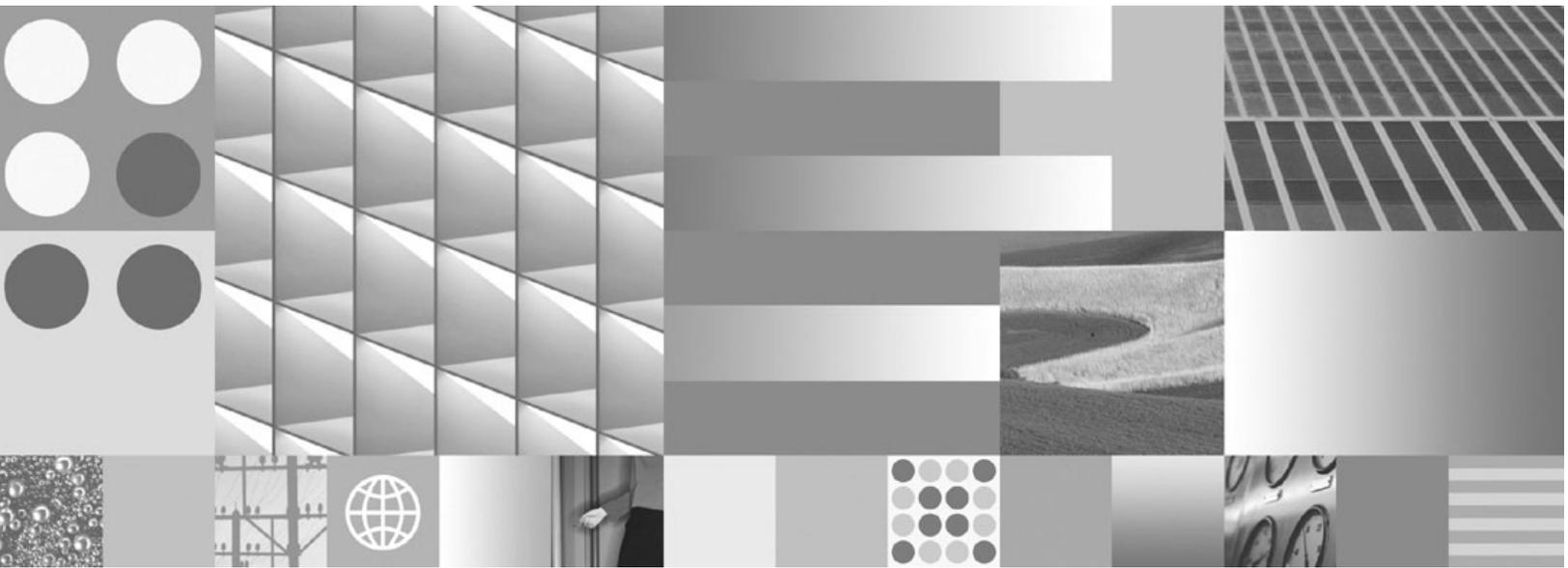


Installation and Upgrade Guide



Installation and Upgrade Guide

Note

Before using this information and the product it supports, read the information in "Notices" on page 729.

This edition applies to version 4.5.0 of IBM FileNet Content Manager (product number 5724-R81), version 4.5.0 of IBM FileNet Business Process Manager (product number 5724-R76), and to all subsequent releases and modifications until otherwise indicated in new editions.

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Revision log

The following table identifies changes made to this document since the IBM® FileNet® P8 Platform 4.5 release.

Date	Revision
07/09	Adds updates and edits for documentation defects.
05/09	Includes changes for P8CSE-4.5.0-001 and P8CE-4.5.0-002. Adds updates and edits for documentation defects.
02/09	Adds a new appendix, “Manually redeploy Content Engine” on page 721 . Changes task order in the Content Engine install and upgrade sections to install software updates prior to configuring Content Engine. Adds updates and edits for documentation defects.
01/09	Adds information for the post-release qualification of Process Engine installations on Sun Solaris Zones and HP Integrity servers. Adds updates and edits for documentation defects.
12/08	Adds updates and edits for documentation defects.
11/08	Adds updates and edits for documentation defects. Adds additional introductory information to the appendix “Configuration Manager reference” on page 638 .
11/08	Initial release of this document for release 4.5.

About this document

This document provides installation and upgrade information about IBM FileNet P8 Platform, which includes Application Engine (AE), Content Engine (CE), and Process Engine (PE).

NOTE Installations that use Workplace XT as the web-based client instead of AE must refer to the *IBM FileNet Workplace XT Installation and Upgrade Guide* for Workplace XT information when topics in this document are about AE.

Topics in this document apply specifically to FileNet P8 Platform installation tasks. Information about preparing the FileNet P8 Platform environment before you start these installation tasks is in the *Plan and Prepare Your Environment for IBM FileNet P8* document.

To download these documents from the IBM FileNet support Web site, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

Intended audience

This document is intended for software professionals who will install the FileNet P8 applications. Installation by an IBM FileNet Certified Professional (FCP) is recommended. For more information about the FCP program, contact your IBM service representative.

Typographical conventions

This document uses the following typographical conventions:

Convention	Usage	Example
Bold	Platform-specific headings	Start the application server. WebSphere® Refer to IBM WebSphere documentation for more information. WebLogic Refer to BEA WebLogic documentation for more information.
Gray bold	Clickable items, such buttons, and tabs.	Click OK .
	Menu paths or breadcrumb trails.	Select Start > Settings > Control Panels > Display > Screen Saver .
<i>Italics</i>	Variables that require user-supplied values	The calculation is: <i>number of object stores * 16 + number of concurrent users</i> .
	Document titles	You are reading the <i>IBM FileNet P8 Platform Installation and Upgrade Guide</i> .
Monospace	Text that has to be typed by the user	Copy the file by entering the following command: <code>COPY filename</code>
	Code samples	Find the following text in the web.xml file: <code><context-param><param-name>uploadDir</param-name><param-value>/opt/FileNet/AE/Upload1</param-value> </context-param></code>
	Display text, such as prompts and error messages	Are you sure you want to delete this object? You do not have permission to delete this object.
	Elements such as filenames, properties, classes and so on, whose meaning might get confused in regular text.	Open the <code>filed</code> file. Enter a value for the <code>new</code> property. Select the <code>senior</code> class.

Convention	Usage	Example
“Text with quotation marks”	User-interface fields that do not use initial capitalization and document headings referenced within a document	See the “Part number” field for the part number. For more information, see “Typographical conventions” on page 14.
UPPERCASE	Case-sensitive text, where uppercase text is required.	Copy the file by entering the following command: <code>COPY filename</code>

Acronyms

This document uses the following IBM FileNet product names and acronyms.

Product Name	Acronyms
Application Engine	AE
Content Engine	CE
Content Search Engine	CSE
Enterprise Manager	EM
Global Configuration Data	GCD
Image Services Resource Adapter	ISRA
Process Engine	PE
Rendition Engine	RE

About IBM FileNet documentation

By default, this document is distributed as part of the *IBM FileNet P8* help system, but it is also available as a downloadable document from the IBM support Web site. Newer versions of *IBM FileNet P8* documentation are sometimes re-released with other events, such as fix pack releases or documentation refreshes. To ensure that you have the latest revision of a document, compare the document part number of your document to the document part number of the document that is posted on the support Web site:

www.ibm.com/support/docview.wss?rs=3278&uid=swg27010422

For example, the last two digits of “GC31-5585-05” indicate that the specified document has been revised five times after the original publishing, which is designated by 00.

Copy Web documents into the help system and make them searchable

The IBM FileNet P8 help system is designed so that you can download updated copies of this document and copies of other IBM FileNet documents into the *IBM FileNet P8* help system and index them so that they can be retrieved by a search in the help system. However, to search the *IBM FileNet P8* help system, it must be installed as a Web site on a Web server that supports Java™ applications.

For more information, see:

- [“Other available documentation” on page 18](#)
- [“Install IBM FileNet P8 Platform documentation” on page 22](#)
- [“Update documentation search index” on page 26](#)

Links to additional information

To help you locate additional information about a topic, this document includes links to:

- Other locations in this document
- External Web sites
- Topics in the FileNet P8 help system

Because this document is included in the default FileNet P8 help system, the links to the FileNet P8 help topics work only when you view this document from within the help system. If you view this document from outside of the help system, the links to FileNet P8 help topics do not work.

Gather reference documentation

Following are two tables with information about the IBM FileNet P8 documents that are available as part of the FileNet P8 release. To download these documents from the IBM FileNet support Web site, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)

Installation reference documents

Consider having one or more of the following documents (or help topics) nearby for reference purposes during the installation of IBM FileNet P8 Platform.

Document or help topic name...	Refer to this document...
<i>Plan and Prepare Your Environment for IBM FileNet P8</i>	To confirm the target environment is ready for a FileNet P8 installation or upgrade.
<i>IBM FileNet Workplace XT Installation and Upgrade Guide</i>	For information about how to install and upgrade Workplace XT in a FileNet P8 environment.
<i>IBM FileNet P8 Hardware and Software Requirements</i>	To confirm that the target environment has at least the minimum supported levels of software from independent software providers.
<i>IBM FileNet P8 Compatibility Matrix</i>	To confirm that the version of FileNet P8 to be installed is compatible with at least the minimum supported levels of other FileNet products that are or will be used with FileNet P8.
<i>IBM FileNet P8 Release Notes</i>	To familiarize yourself with the new features and known issues associated with the FileNet P8 release.
<i>IBM FileNet P8 Non-English Support Guide</i>	For information about how FileNet P8 supports non-English environments.
<i>IBM FileNet P8 High Availability Technical Notice</i>	For information about how to set up FileNet P8 using clusters, farms and other high-availability software and hardware.
<i>IBM FileNet P8 Performance Tuning Guide</i>	For critical tuning information required to make deployments of all sizes and levels of complexity work efficiently before going into production. Attention This guide provides many specific recommendations for making performance-related choices that are either difficult or impossible to change once the system goes into production.
<i>IBM FileNet P8 Troubleshooting Guide</i>	For troubleshooting tips associated with a FileNet P8 Installation.

Document or help topic name...	Refer to this document...
<i>IBM FileNet P8 help topic:</i> Administration > Enterprise-wide Administration > FileNet P8 Security > Users and Groups	For a complete list of the user and group roles, accounts, and responsibilities required to install, configure, and maintain a FileNet P8 system.
<i>IBM FileNet P8 help topic:</i> Administration > Enterprise-wide Administration > Shutdown and Startup	For information about how to shut down and start up FileNet P8 and any expansion products.

Other available documentation

Review the list of remaining FileNet P8 documents that you can download from the FileNet support Web site.

Document name	Refer to this document...
<i>IBM FileNet P8 System Overview</i>	For a technical summary of the FileNet P8 architecture, including a overview of features and capabilities.
<i>IBM FileNet P8 Disaster Recovery Technical Notice</i>	For information about potential options and solutions involved in a FileNet P8 disaster recovery plan.
<i>IBM FileNet P8 Process Task Manager Advanced Usage Technical Notice</i>	For information about properties found under the Advanced tab in Process Task Manager.
<i>IBM FileNet P8 Version Tools Technical Notice</i>	For information about the set of versions tools that are installed with FileNet P8 Platform and that identify the levels of Application Engine, Content Engine, and Process Engine in a FileNet P8 environment.
<i>IBM FileNet P8 Security Help Extract</i>	For security-related information from the FileNet P8 help system in PDF format.
<i>IBM FileNet Rendition Engine Installation and Upgrade document</i>	For information about how to install and upgrade Rendition Engine in a FileNet P8 environment.
<i>IBM FileNet P8 eForms Installation and Upgrade Guide</i>	For information about how to install and upgrade eForms in a FileNet P8 environment.
<i>IBM FileNet Connector for SharePoint Web Parts Installation and Upgrade Guide</i>	For information about how to install and upgrade IBM FileNet Connector for SharePoint Web Parts in a FileNet P8 environment.
<i>IBM FileNet Connector for SharePoint Document Libraries Installation and Upgrade Guide</i>	For information about how to install and upgrade IBM FileNet Connector for SharePoint Document Libraries in a FileNet P8 environment.

Document name	Refer to this document...
<i>IBM FileNet P8 Portlets for WebSphere Installation and Upgrade Guide</i>	For information about how to install and upgrade FileNet P8 Portlets for WebSphere in a FileNet P8 environment.
<i>IBM FileNet Process Analyzer Installation and Upgrade Guide</i>	For information about how to install and upgrade Process Analyzer in a FileNet P8 environment.
<i>IBM FileNet Process Simulator Installation and Upgrade Guide</i>	For information about how to install and upgrade Process Simulator in a FileNet P8 environment.
<i>IBM FileNet Records Manager Installation and Upgrade Guide</i>	For information about how to install and upgrade Records Manager in a FileNet P8 environment.
<i>IBM FileNet Business Activity Monitor Installation and Configuration Guide</i>	For information about how to install and configure Business Activity Monitor in a FileNet P8 environment.
<i>IBM FileNet Content Federation Services Installation and Upgrade Guide</i>	For information about how to install and upgrade Content Federation Services in a FileNet P8 environment.
<i>IBM FileNet Content Federation Services for Image Services Planning and Configuration Guide</i>	For information about how to configure Image Services for document federation.
<i>IBM FileNet Content Federation Services for Content Manager OnDemand Planning and Configuration Guide</i>	For information about how to configure Content Manager for OnDemand for document federation.
<i>IBM FileNet Content Management Widgets Installation Guide</i>	For information about how to install Content Management Widgets in a FileNet P8 environment.

Autonomy K2 software documentation for configuring the FileNet P8 Content Search Engine

Autonomy (formerly Verity) K2 software, which underlies the optional CSE component, installs with a large body of documentation that is not included in the general FileNet P8 documentation.

For details on how to access this documentation, see the "Configure Content Engine for Content-Based Retrieval" topic in the IBM FileNet P8 Platform Installation and Upgrade Guide.

Access IBM FileNet documentation, compatibility matrices, and fix packs

To access documentation, compatibility matrices, and fix packs for IBM FileNet products:

1. Navigate to the Product Documentation for FileNet P8 Platform support page. (<http://www.ibm.com/support/docview.wss?rs=3247&uid=swg27010422>).
2. Select a PDF or a Doc Link, whichever is appropriate.

Customer support

For information about contacting customer support:

1. Navigate to the FileNet Product Family support page: (<http://www-01.ibm.com/software/data/content-management/filenet-product-family/support.html>).
2. Click **IBM FileNet Support Communications**, or search for a particular support topic under "Enter search terms".

Feedback

Your feedback helps us to provide quality information. Send your comments about this publication or any other IBM FileNet documentation by e-mail to comments@us.ibm.com. Be sure to include the name of the product, the version number of the product, and the name and part number of the book (if applicable). If you are commenting on specific text, include the location of the text (for example, a chapter and section title, a table number, a page number, or a help topic title).

Install and configure IBM FileNet P8 Platform

This section contains the following tasks:

- [“Install IBM FileNet P8 Platform documentation” on page 22](#)
- [“Install and configure Content Engine” on page 29](#)
- [“Install and configure Content Search Engine” on page 142](#)
- [“Install and configure Process Engine” on page 171](#)
- [“Install and configure Application Engine” on page 206](#)
- [“Configuration and startup tasks” on page 253](#)
- [“Optional installation tasks” on page 272](#)

Install IBM FileNet P8 Platform documentation

Do the tasks in this section to install the IBM FileNet P8 documentation. See the following topics and tasks:

- [“Installation considerations” on page 23](#)
- [“Overview of Procedures” on page 24](#)
- [“Install the core IBM FileNet P8 Platform documentation” on page 24](#)
- [“Install expansion-products, custom, and auxiliary documentation” on page 25](#)
- [“Update documentation search index” on page 26](#)
- [“Complete and verify the documentation installation” on page 28](#)

Task 1: Install IBM FileNet P8 Platform documentation (All)

This task covers the installation and, if necessary, search-related indexing of your IBM FileNet P8 Platform documentation.

Installation considerations

Install the documentation for IBM FileNet P8 Platform and its expansion products on a supported web application server (for example, WebSphere, WebLogic, or JBoss). This will enable you to

- Access online help from within any IBM FileNet P8 applications (for example, Workplace, Enterprise Manager, and Process Task Manager).
- Use the full-text search feature.

Optionally, you can also install and index auxiliary documentation that is available solely on the IBM Web site (for example, the *IBM FileNet P8 Release Notes*). Installing and indexing makes the auxiliary documentation easier to access and includes it in the IBM FileNet P8 Platform documentation search functionality. For a complete list of such documentation, see "Gather auxiliary documentation" in the *Plan and Prepare Your Environment for IBM FileNet P8* guide.

NOTES

For all Web Servers

- You can collocate the IBM FileNet P8 documentation on an application server with either Application Engine or Content Engine server components installed.
- To ensure proper documentation search functionality, make sure that JavaScript support is enabled on each user browser client.
- Depending on your operating system and application server levels, your options might be slightly different from the options documented in the provided examples.
- Re-index the IBM FileNet P8 documentation any time you install (or reinstall) the core IBM FileNet P8 Platform documentation *AND* add on any expansion products or auxiliary documentation.
- You can use multipart root directories (for example, `/docs/ecm_help`) if your application server supports them.
- You can download a refresh of the documentation from the [IBM Information Management support page on www.ibm.com](#).

For WebSphere

- IBM FileNet P8 documentation must be installed as a WAR file (`ecm_help.war`). You cannot install as an EAR file because the internal documentation search engine might not function as expected.

For WebLogic and JBoss

- You cannot install the IBM FileNet P8 help files as WAR or EAR files because the internal documentation search engine might not function as expected.
- A valid Java SDK must be available for the WebLogic and JBoss application servers.
- Unpack the `ecm_help.war` file or use the `ecm_help` flat file structure to install the IBM FileNet P8 documentation.

Overview of Procedures

Perform the following steps in order unless otherwise directed:

- [“Install the core IBM FileNet P8 Platform documentation” on page 24](#) -- Begin here if you are installing the IBM FileNet P8 Platform documentation for the first time, or reinstalling the IBM FileNet P8 Platform documentation.
- [“Install expansion-products, custom, and auxiliary documentation” on page 25](#) -- Begin here if you have already installed the core IBM FileNet P8 Platform documentation and need to add on the documentation for IBM FileNet expansion products (for example, Process Analyzer, Process Simulator, IBM FileNet P8 eForms, Content Federation Services, or IBM FileNet Records Manager). Optionally, you could also add auxiliary documentation that you downloaded from the IBM support site, or documentation that you customized.
- [“Update documentation search index” on page 26](#) -- Perform this procedure only after you have installed documentation for all of your expansion products. If you install the core IBM FileNet P8 Platform documentation only, which has a pre-configured search index, you can skip this procedure. This section also provides information about planning for disaster recovery of the installed IBM FileNet P8 Platform documentation.
- [“Complete and verify the documentation installation” on page 28](#) -- After you have installed the core IBM FileNet P8 Platform documentation, added on documentation for your expansion products, and regenerated the search index, use this procedure to verify the installation.

Install the core IBM FileNet P8 Platform documentation

This procedure establishes the core web application for documentation associated with the IBM FileNet P8 Platform. It assumes that your application server is already installed and operational.

To install the core IBM FileNet P8 Platform documentation

1. Access the IBM FileNet P8 Platform Documentation installation software and perform the following actions, depending on your application server type:

WebSphere

- a. Copy the IBM FileNet P8 `ecm_help.war` file from the IBM FileNet P8 documentation package to the local hard disk drive.
- b. From the administrative console, select Applications > Install a New Application.
- c. Enter the Local Path location or Browse to the `ecm_help.war` file.

- d. Enter a Context Root, then click **Next** and follow all WebSphere installation screens.

NOTE The Context Root (for example, `ecm_help`) and installation directory can be user-defined. Substitute your actual values when prompted if you do not want to take the WebSphere default values.

- e. Save your changes to the WebSphere Master Configuration.

WebLogic

- a. Unpack the IBM FileNet P8 `ecm_help.war` file or copy the entire `ecm_help` directory structure from the IBM FileNet P8 documentation package to the local hard disk drive.
- b. From the WebLogic administrative console, install a new web application for the IBM FileNet P8 Platform documentation.

JBoss

- a. From the IBM FileNet P8 documentation package, perform one of the following actions to create a deployable `ecm_help.war` directory on the JBoss application server:
 - Unpack the `ecm_help.war` file to the `ecm_help.war` directory.

OR

- Copy the `ecm_help` directory to the JBoss application server and rename it `ecm_help.war`.

2. Continue as follows:

- To add documentation for any IBM FileNet P8 expansion product or any auxiliary documentation, continue with [“Install expansion-products, custom, and auxiliary documentation” on page 25](#).
- If you have no further documentation to install, continue with [“Complete and verify the documentation installation” on page 28](#).

Install expansion-products, custom, and auxiliary documentation

Use the procedure in this topic to install documentation for expansion products, such as FileNet P8 eForms and FileNet Content Federation Services, onto an existing IBM FileNet P8 Platform documentation server. You can also install documentation you have customized.

Optionally, you can install auxiliary documentation that is available solely on the IBM (www.ibm.com) Web site. For example, the Web site provides the *IBM FileNet P8 Release Notes*, the *IBM FileNet P8 Troubleshooting Guide*, and others.

If you do not have additional documentation to add on, skip to the procedure [“Complete and verify the documentation installation” on page 28](#).

To install expansion product documentation

1. Determine the expansion product documentation location, either on local media source or network location. For most expansion products, use the *Documentation* package included as part of the particular software product.

2. Stop the IBM FileNet P8 Platform `ecm_help` documentation application. For WebLogic and WebSphere Application Server, use the administrative console. For JBoss, shut down the JBoss application server. Verify that no processes are accessing the documentation web application.
3. **For all web application servers:** Copy all directories and files below the expansion product `ecm_help` directory to the core IBM FileNet P8 Platform documentation location (`ecm_help`).
NOTE You can copy the documentation for more than one expansion product documentation set to the documentation application server. The result is one `ecm_help` directory structure containing the core documentation set and one or more sets of expansion product documentation files.
4. Download the latest web-posted updates of planning and preparation, installation and upgrade guide PDF files for the IBM FileNet P8 Platform and various expansion products.
Note Check the *Documentation* page on the [IBM Information Management support page on www.ibm.com](#) for the latest versions of these guides. See also, “[Access IBM FileNet documentation, compatibility matrices, and fix packs](#)” on page 20 for details.
5. Repeat these steps for each of your expansion products, custom applications, and auxiliary documentation.
6. Go on to the procedure in the following topic, “[Update documentation search index](#)” on page 26.

Update documentation search index

You must update the documentation search index when the following conditions apply:

- You have installed expansion-products or auxiliary documentation.
- You have previously installed expansion products or auxiliary documentation, and you refresh the core IBM FileNet P8 Platform documentation.

If neither of these conditions apply, skip to the procedure in the following topic, “[Complete and verify the documentation installation](#)” on page 28.

NOTE Every time you update the documentation search index, a backup copy of the files in the existing `Index/core` subdirectory is automatically copied to the `Index/IndexOld` subdirectory. You can reapply these backed-up files to the `core` subdirectory (after first moving or deleting the files created there) if you need to return to the previous indexed state.

To update the documentation search index

1. If the IBM FileNet P8 Platform documentation application (`ecm_help`) is running, stop it. Verify that no processes are accessing the IBM FileNet P8 Platform documentation application.
NOTE Add all expansion-products and auxiliary documentation that you intend to use before updating the search index. Otherwise, you might have to repeat this procedure if you install additional documentation later.
2. Open a terminal or command prompt on the application server. From the command line, navigate to the `search` subdirectory under the application root directory, for example, `ecm_help`.

3. Modify the search-indexing script file that is appropriate for your operating system as follows:

UNIX®

Add execute permissions (chmod 755) on the **indexFiles.sh** file because it is set to read-only in the documentation package.

Windows®

Set permissions on the **indexFiles.bat** file, because it is set to read-only in the documentation package.

4. Using a text editor, open the search-indexing script file that is appropriate for your operating system:

UNIX

```
indexFiles.sh
```

Windows

```
indexFiles.bat
```

5. If necessary for your environment, set the JAVA_HOME variable in the script file with the path to your Java Run Time Environment (JRE) installation location.

NOTE The Java JRE installation subdirectory can be user-defined, so substitute your actual location, as appropriate.

6. Save your changes and close the text editor.
7. From the `ecm_help/search` directory, run the updated search-indexing script file that is appropriate for your server operating system:

UNIX

```
indexFiles.sh
```

Windows

```
indexFiles.bat
```

NOTE As you run the search-indexing script file, you might notice periodic Parse Abort errors. You can ignore these error conditions, as they are benign and do not affect the overall indexing process.

(Optional) Prepare for disaster recovery or easy redeployment

- Now that you have built your complete IBM FileNet P8 Platform documentation location (`ecm_help`), you can regenerate the `ecm_help.war` file using the `ecm_help` directory structure that contains your core IBM FileNet P8 Platform documentation and all added-on IBM FileNet P8 expansion products. This regenerated `ecm_help.war` file could then be placed into safe disaster recovery storage or used to quickly bring additional FileNet P8 Platform documentation servers online.

Complete and verify the documentation installation

Perform this procedure after you have installed and reindexed (for installations with add-on documentation) the IBM FileNet P8 documentation on the application server.

To complete and verify the documentation installation

1. From your application server, start the IBM FileNet P8 documentation (*ecm_help*) application.
2. In a web browser, enter the URL for your web environment, using your documentation server name, and port number, as in these examples:

WebSphere

`http://yourdocserver:9080/ecm_help/`

WebLogic

`http://yourdocserver:7001/ecm_help/`

JBoss

`http://yourdocserver:8080/ecm_help/`

If the installation was a success, the help system displays.

NOTE Make a note of the URL for your application server. Use it as the documentation URL for the IBM FileNet P8 components. Specify this URL either while running installation programs or later in the site preferences settings (for example, in Workplace or FileNet Workplace XT).

3. Click the **Search** link on the Help Directory toolbar. The documentation Search page opens.
4. Enter a value for your Search query and run the query.
5. Select one of the Search query result links. The associated help page opens.

Install and configure Content Engine

To set up Content Engine, do the following tasks:

1. [“Install Content Engine” on page 30](#)
2. [“Install FileNet Enterprise Manager” on page 34](#)
3. [“Install Content Engine software updates” on page 36](#)
4. [“Install ECM Centera SDK library files” on page 102](#)
5. [“Configure Content Engine instances” on page 37](#)
6. [“Install the latest Content Search Engine Client files on Content Engine servers” on page 74](#)
7. [“Install the latest Process Engine Client files on Content Engine servers” on page 75](#)
8. [“Deploy Content Engine instances” on page 78](#)
9. [“Install Tivoli Storage Manager client and add native API library paths \(WebSphere\)” on page 95](#)
10. [“Install Tivoli Storage Manager client and add native API library paths \(WebLogic\)” on page 97](#)
11. [“Install Tivoli Storage Manager client and add native API library paths \(JBoss\)” on page 100](#)
12. [“Complete Content Engine post-deployment steps” on page 106](#)
13. [“Establish the FileNet P8 domain and Global Configuration Data \(GCD\)” on page 109](#)
14. [“Create the data sources for an object store” on page 117](#)
15. [“Create the initial object store” on page 133](#)
16. [“Verify the Content Engine installation” on page 140](#)

Task 1: Install Content Engine

Use the procedure in this task to interactively or silently install the Content Engine components shown in the following table. Note that some of the components can be installed only on Windows-based machines.

Component	Required Platform
Content Engine Server	UNIX or Windows
Configuration Manager	UNIX or Windows
.NET Clients (including FileNet Enterprise Manager)	Windows only
Content Engine Upgrader	Windows only
FileNet Deployment Manager	Windows only

Install .NET Clients software only on machines where you intend to run either the FileNet Enterprise Manager administrative client or your own customized client application to administer Content Engine.

The Content Engine Upgrader is required only to upgrade Content Engine and Content Search Engine data from an earlier version.

The FileNet Deployment Manager is an optional component that you can use to move one IBM FileNet P8 environment into another, such as moving a test system into a production environment. See [Application Deployment > Get Started with FileNet Deployment Manager](#) for details.

To install Content Engine

1. Log on as `ce_install_user` to the application server machine where you are going to install Content Engine software.

If you are installing Content Engine in a managed environment rather than a single-server environment, the application server must be the WebSphere Deployment Manager node or the WebLogic Administrator node.

2. Navigate to the Content Engine software package in the installation media.
3. (Red Hat Linux® only) On the machine where you are going to run the Content Engine installation program, install the shared library `libstdc++.so.5`:
 - a. Navigate to the Red Hat 5 installation software.
 - b. Install the package `compat-libstdc++-33-3.2.3-61.i386.rpm`, which contains the necessary shared library `libstdc++.so.5`.
4. Begin the Content Engine installation, choosing either the interactive or silent steps below. For information on the Content Engine parameter values to specify in the installation, see

"Installation and Upgrade Worksheet" in *Plan and Prepare Your Environment for IBM FileNet P8*.

- To install interactively:
 - i. With the **Data > Filter > AutoFilter** command enabled, perform the following steps to see only the installation properties you must specify for the current task:
 - Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CE Installer" for your operating system.
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation, Upgrade."
 - Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
 - ii. To start the installation wizard, run one of the following commands, depending on your operating system:

Platform	Command
AIX®	P8CE-4.5.0-AIX.BIN
HPUX	P8CE-4.5.0-HPUX.BIN
HPUXi	P8CE-4.5.0-HPUXI.BIN
Linux	P8CE-4.5.0-LINUX.BIN
Solaris	P8CE-4.5.0-SOL.BIN
Windows	P8CE-4.5.0-WIN.EXE
zLinux	P8CE-4.5.0-ZLINUX.BIN

- iii. Complete the wizard using the following table:

In this screen...	Perform this action...
Welcome	Click Next to proceed with the installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Software License Agreement	Review and accept the license agreement, and then click Next .

In this screen...	Perform this action...
Choose Components (Windows only)	<p>Set the Install Set value to Content Engine and choose the components you want to install:</p> <ul style="list-style-type: none"> Content Engine Server Installs Content Engine Server and Configuration Manager software. .NET Clients and FileNet Enterprise Manager Installs the components to administer Content Engine from this machine. Tools Installs Configuration Manager, Deployment Manager, and Content Engine Upgrader. <p>Click Next to continue.</p>
Choose Install Path	Specify the directory where you want to install Content Engine. If the directory (or its parent) doesn't exist, the program will create it. Click Next to continue.
Specify Documentation URL	<p>Optionally specify the URL for the IBM FileNet P8 documentation that you deployed in "Install IBM FileNet P8 Platform documentation (All)" on page 23, and then click Next.</p> <p>Alternatively, you can specify the URL (after you have created the FileNet P8 domain in "Establish the FileNet P8 domain and Global Configuration Data (GCD)" on page 109) using FileNet Enterprise Manager, as follows:</p>
.NET API COM Compatibility Layer (CCL) URL (Windows only)	Specify a URL for the .NET API COM Compatibility Layer if you intend to configure CCL for a custom COM-based FileNet P8 application, and then click Next .
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing software.
Installation Complete	Click Done .

- To install silently:
 - With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to see only the

installation properties you must specify for the Content Engine silent-installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE Installer.
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the **AutoFilter** drop-down arrow in the "File Hosting the Value (if any)" column header and select ce_silent_install.txt.
 - Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- ii. Open the `CE_silent_install.txt` file in the software package for editing.
 - iii. Set the parameter values in the `CE_silent_install.txt` file for your site.
 - iv. Run one of the following commands in the software package, depending on your operating system:

Platform	Command
AIX	<code>P8CE-4.5.0-AIX.BIN -f CE_silent_install.txt -i silent</code>
HPUX	<code>P8CE-4.5.0-HPUX.BIN -f CE_silent_install.txt -i silent</code>
HPUXi	<code>P8CE-4.5.0-HPUXI.BIN -f CE_silent_install.txt -i silent</code>
Linux	<code>P8CE-4.5.0-LINUX.BIN -f CE_silent_install.txt -i silent</code>
Solaris	<code>P8CE-4.5.0-SOL.BIN -f CE_silent_install.txt -i silent</code>
Windows	<code>P8CE-4.5.0-WIN.EXE -f CE_silent_install.txt -i silent</code>
zLinux	<code>P8CE-4.5.0-ZLINUX.BIN -f CE_silent_install.txt -i silent</code>

5. After the installation finishes (and you have clicked **Done** if you installed interactively), check for errors in the Content Engine error log file `ce_install_path/ce_install_log_4_5_0.txt`, where `ce_install_path` is the installation path to Content Engine. You can locate the errors by searching the file for the following strings:
 - Warnings
 - NonFatalErrors
 - FatalErrors

Task 2: Install FileNet Enterprise Manager

If you did not install FileNet Enterprise Manager on the Content Engine server machine in [“Install Content Engine” on page 30](#), you can install it now on the same Windows server or on some other Windows machine.

Microsoft .NET Framework 2.0 and Web Services Enhancements 3.0 must already be installed on the machine where you intend to install FileNet Enterprise Manager.

NOTE You cannot install FileNet Enterprise Manager on a UNIX machine.

To install FileNet Enterprise Manager

1. On the machine where you will install FileNet Enterprise Manager, log on as a member of the Local Administrators group or the Power Users group.
2. Access the Content Engine software package.
3. Start the FileNet Enterprise Manager installation. For information on parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- To install interactively:
 - i. Run the following command in the software package:
`P8CE-4.5.0-Win.exe`
 - ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
Welcome	Click Next to proceed with the installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Software License Agreement	Review and accept the license agreement, and then click Next .

In this screen...	Perform this action...
Choose Components	Set the Install Set value to Content Engine, select the check boxes for .NET Clients and FileNet Enterprise Manager, and clear all the other check boxes. Click Next to continue.
Choose Install Path	Specify the directory where you want to install FileNet Enterprise Manager. If the directory (or its parent) doesn't exist, the program will create it. Click Next to continue.
Specify Documentation URL	Optionally specify the URL for the IBM FileNet P8 documentation that you deployed in " Install IBM FileNet P8 Platform documentation (All) " on page 23, and then click Next .
.NET API COM Compatibility Layer (CCL) URL	Specify a URL for the .NET API COM Compatibility Layer if you intend to configure CCL for a custom COM-based FileNet P8 application, and then click Next .
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing FileNet Enterprise Manager.
Installation Complete	Click Done .

- To install silently:
 - i. Open the `CE_silent_install.txt` file in the software package for editing.
 - ii. Set the parameter values in the `CE_silent_install.txt` file for your site. Be sure to set the `CHOSEN_INSTALL_FEATURE_LIST` parameter value to:


```
DotNetClients,AdminTools
```
 - iii. Save your edits.
 - iv. Run the following command in the software package:


```
P8-CE-4.5.0-WIN.EXE -f CE_silent_install.txt -i silent
```

Task 3: Install Content Engine software updates

Perform the procedure in this topic for each Content Engine instance to install software updates, fix packs, or interim fixes.

If no Content Engine software updates are available, skip to [“Configure Content Engine instances” on page 37](#).

To install the Content Engine software updates

1. For instructions on how to obtain the latest Content Engine software updates, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).
2. Open the readmes for the Content Engine software updates and perform the installation procedures in the readmes on each Content Engine instance.

If you installed an instance into a managed environment, perform the procedure on the Deployment Manager node (WebSphere) or the Administrator node (WebLogic).

Task 4: Configure Content Engine instances

You will configure and deploy all of your Content Engine application instances with the new Configuration Manager tool. Configuration Manager prepares the Content Engine application for deployment on the application server. A single Content Engine application instance equates to one deployed application on your application server.

You first provide and apply information about your Content Engine application environment, and then later deploy the application. You can configure multiple instances before deploying any of them, or you can configure and deploy one instance at a time. This topic provides the configuration steps for one instance. Repeat the steps as need for additional instances in your environment.

You use Configuration Manager to configure the following information for the Content Engine application instance:

- Application server properties
- Java Database Connectivity (JDBC) data source properties
- Directory service (LDAP) provider
- Content Engine bootstrap properties

TIPS

- (WebSphere only) For best results, configure no more than one Content Engine instance in a WebSphere profile.
- Use the command line version of Configuration Manager if either of these conditions is true:
 - Your system is Novell SUSE Linux Enterprise 9. You can configure Content Engine only with the command line.
 - You need an accessible software version of Configuration Manager for people with disabilities to use.
- To avoid having to perform the Content Engine deployment task multiple times, perform the deployment after you install the Process Engine Client files. Configuration Manager can deploy a Content Engine application any time after you configure the other properties for your environment. However, you must also perform the deployment task after you install or update the Process Engine Client files on the Content Engine server. The Process Engine Client files are required if you set up Process Engine in your IBM FileNet P8 environment.

Delete existing data sources as needed

One of the tasks you will run in Configuration Manager is to create data sources for the Global Configuration Database (GCD) and for object stores. You will do this either with the graphical user interface (using the Configure JDBC Data Sources task) or the command line interface (using the ConfigureJDBC task).

Configuration Manager will not create a new data source with the same name as that of an existing data source. If you want to reuse the name of an existing data source for the GCD or for an object store, manually delete the existing data source before creating the new data source. Refer to your application server documentation for more information.

Grant permissions to the Configuration Manager user

complete the following procedure to grant the file and directory permissions required by *config_mgr_user*, the user who will run Configuration Manager. For details on required accounts and related permissions, see [“Accounts for Content Engine” on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

To grant permissions to the Configuration Manager user

1. Log on to the application server where you installed Content Engine as *ce_install_user*. For details on required accounts and related permissions, see [“Accounts for Content Engine” on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Grant *config_mgr_user* execute permission (UNIX) or read & execute permission (Windows) on the executable file of the interface of Configuration Manager you intend to use:

- To enable use of the graphical user interface, grant permission to one of the following files in the *ce_install_path/tools/configure/CMUI* directory, where *ce_install_path* is the path in which you installed Content Engine:

UNIX

cmui

Windows

cmui.exe

- To enable use of the command line interface, grant permission to one of the following files in the *ce_install_path/tools/configure* directory, where *ce_install_path* is the path in which you installed Content Engine:

UNIX

configmgr.sh

Windows

configmgr.bat

3. Grant write permission to the directory where you want Configuration Manager to place the configuration XML files it will generate.

If you are not going to specify this directory when you run Configuration Manager, grant write permission on the default directory, `ce_install_path/tools/configure` and all its files and subdirectories.

4. Log off the Content Engine application server, and log back on as `config_mgr_user`, the Configuration Manager user.
5. Continue with one of the following topics:
 - [“Configure instances using the graphical user interface” on page 39](#)
 - [“Configure instances using the command line interface” on page 65](#)

Configure instances using the graphical user interface

In this subtopic you will configure a Content Engine application on an application server using the graphical user interface version of Configuration Manager. Use the information in your installation worksheet to specify the values for the parameters required to configure Content Engine. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

For more information on the properties and values that you enter in Configuration Manager, roll your mouse over the property name to view the tool tip help for the property. Refer to the appendix [“Configuration Manager user interface reference” on page 645](#) for complete information on using the graphical user interface.

To set the GUI password save option (optional)

- By default, Configuration Manager does not save passwords that you enter in the graphical user interface. That is, each time you start Configuration Manager and open a saved profile, you will need to specify any passwords required by the tasks and for the application server properties. For more information on password handling and how to change the password save setting, see [“Handling passwords in Configuration Manager” on page 643](#).

To start Configuration Manager

Complete one of the following steps, depending on the operating system that runs on the machine where you installed Content Engine:

UNIX

- Run the following command:

```
ce_install_path/tools/configure/CMUI/cmui
```

where `ce_install_path` is the location where Content Engine server software is installed.

Windows

- Complete one of the following actions:
 - Double-click the **FileNet Configuration Manager** desktop shortcut.
 - Select **Start > All Programs > IBM FileNet P8 Platform > FileNet Configuration Manager**.
 - Run `ce_install_path\tools\configure\CMUI\cmui.exe`,
where `ce_install_path` is the location where Content Engine server software is installed.

To create a configuration profile

1. Refer to your installation worksheet to specify the values for the properties required for your new profile. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select **CM: Set Application Server properties**.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify Setup Type contains "Installation".
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

2. Start the Create New Configuration Profile wizard by selecting **File > New Configuration Profile**.

In this screen...	Perform this action...
Configuration Profile Information	<ul style="list-style-type: none"> • Provide the following information for the profile: <ul style="list-style-type: none"> – Enter a name for the profile. The name must be valid as a directory name for your operating system. Configuration Manager will create a directory with the profile name for storing the configuration files associated with this profile. For more information of profiles, see “Configuration profile concepts” on page 639 in the Configuration Manager reference appendix. – Specify the directory for the profile. Either type in the full path to the profile directory or click Browse to locate the directory. The default path is <code>ce_install_path/tools/configure/profiles</code>, where <code>ce_install_path</code> is the location where Content Engine is installed. • Click Next. • Choose an application server type for the profile. Select WebSphere, JBoss, or WebLogic, and then click Next. If you click Finish instead of Next, you will need to come back later to supply the required application server properties before you can run the configuration tasks. • Continue at one of the following screens: <ul style="list-style-type: none"> – “Set Application Server Properties for WebSphere” on page 42 – “Set Application Server Properties for JBoss” on page 43 – “Set Application Server Properties for WebLogic” on page 43

In this screen...	Perform this action...
Set Application Server Properties for WebSphere	<p>This screen is displayed only if you selected WebSphere in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the Global Configuration Database (GCD), and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the name of the WebSphere application server cell where Content Engine will be deployed. – If you have already configured WebSphere to use certificates, clear the “Do not use SSL certificates for server communications” check box. Otherwise, leave the check box selected. <p>IMPORTANT If you select this check box, your WebSphere settings for communicating with other servers, such as Application Engine, will be changed.</p> • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 44.

In this screen...	Perform this action...
Set Application Server Properties for JBoss	<p>This screen is displayed only if you selected JBoss in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server. <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the name of the JBoss application server name where Content Engine will be deployed. • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 44.
Set Application Server Properties for WebLogic	<p>This screen is displayed only if you selected WebLogic in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the Global Configuration Database (GCD), and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the machine name or the IP address of the local host for the application server host. – Enter the fully qualified path to the WebLogic application server user projects directory, or click Browse to locate the directory.

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this screen...	Perform this action...
Set Application Server Properties for WebLogic (continued)	<ul style="list-style-type: none"> – Enter the WebLogic application server domain name where Content Engine will be deployed. – Enter the name of the WebLogic application server name where Content Engine will be deployed. • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 44.
Select the tasks that you want included in the Configuration Profile	<ul style="list-style-type: none"> • Select the tasks that you want to include in this profile. For a new Content Engine installation, you need to complete all four configuration tasks: <ul style="list-style-type: none"> – Configure JDBC Data Sources – Configure LDAP – Configure Bootstrap – Deploy Application. • Click Finish to create the profile and save the application server properties.

The profile you created is displayed as an icon in the profile pane (left-hand pane), along with icons for the tasks you selected.

To configure a Content Engine instance using the Configuration Manager graphical user interface

You will complete the configuration tasks in this procedure to prepare the Content Engine application instance for deployment on the application server. You will complete the deploy task later in [“Deploy Content Engine instances” on page 78.](#)

You can perform the configuration tasks in any order, and you do not need to complete work on one configuration task before starting another. You can save your edits, switch between tasks, close the tasks, and reopen tasks as needed.

1. Start or stop the application server, depending on its type:

WebSphere and WebLogic

Start the application server if it is not already running.

JBoss

Stop the application server.

2. Refer to your installation worksheet to specify the values for the properties required for [Step 3](#) through [Step 5](#). For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8.*

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select one of these Configuration Manager options:
 - CM: Configure JDBC Data Sources
 - CM: Configure LDAP
 - CM: Configure Bootstrap Properties
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify Setup Type contains "Installation".
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
3. Provide property values for the JDBC data sources for the Global Configuration Database (GCD).
- a. If your configuration profile is not open in Configuration Manager, open the profile you created earlier in ["To create a configuration profile" on page 40](#).
 - b. Right-click **Configure JDBC Data Sources** in the profile pane, and select **Edit Selected Task**.
 - c. Provide the property values for your database, using the appropriate table for your database type:

DB2® for Linux, UNIX, Windows

In this field...	Provide this information...
JDBC driver name	Select "DB2 Universal JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the Global Configuration Database (GCD) and object stores.
Database name	The name of the Global Configuration Database (GCD) database.

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
Database user name	The name of the DB2 Global Configuration Database (GCD) tablespace user.
Database password	The password for the DB2 Global Configuration Database (GCD) tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e . The default is enabled.

DB2 for z/OS®

In this field...	Provide this information...
JDBC driver name	Select "DB2 for z/OS Universal JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, <code>FNGCDDS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, <code>FNGCDDSXA</code> .

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the Global Configuration Database (GCD) and object stores.
Database name	The name of the Global Configuration Database (GCD) database instance name.
Database user name	The name of the DB2 Global Configuration Database (GCD) tablespace user.
Database password	The password for the DB2 Global Configuration Database (GCD) tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e . The default is enabled.

MS SQL Server

In this field...	Provide this information...
JDBC driver name	Select "Microsoft® JDBC Driver 2005" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the SQL Server database instance in which you create databases for the Global Configuration Database (GCD) and object stores.
Database name	The name of the Global Configuration Database (GCD) database for SQL Server.
Database user name	The name of the SQL Server user with administrative rights to the Global Configuration Database (GCD) database.
Database password	The password for the SQL Server user with administrative rights to the Global Configuration Database (GCD) database. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e . The default is enabled.

Oracle

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, <code>FNGCDDS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, <code>FNGCDDSXA</code> .
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database name	The SID of the Oracle database containing the Global Configuration Database (GCD) tablespace.
Database user name	The name of the Oracle Global Configuration Database (GCD) tablespace owner.
Database password	<p>The password for the Oracle Global Configuration Database (GCD) tablespace owner. The tool encrypts the password for you.</p> <p>Enter the password again in the Confirm field.</p>

In this field...	Provide this information...
JDBC data source file name	<p>The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	<p>Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e. The default is enabled.</p>

Oracle RAC

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver (RAC support)" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
Database server name RAC node 1	The host name of the machine where the database software is installed for node 1.
Database port number RAC node 1	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database server name RAC node 2	The host name of the machine where the database software is installed for node 2.
Database port number RAC node 2	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database service name	The SID of the Oracle database containing the Global Configuration Database (GCD) tablespace.
Oracle RAC retries	The number of retries for Oracle RAC.
Oracle RAC delay	The amount of delay for Oracle RAC.
Database user name	The name of the Oracle Global Configuration Database (GCD) tablespace owner.
Database password	The password for the Oracle Global Configuration Database (GCD) tablespace owner. The tool encrypts the password for you. Enter the password again in the Confirm field.

In this field...	Provide this information...
JDBC data source file name	<p>The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e . The default is enabled.

- d. Select **File > Save** to save your changes.
- e. Apply the JDBC property settings by right-clicking **Configure JDBC Data Sources** in the profile pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the JDBC properties.

TIP You can check the completion status of a task by right-clicking **Configure JDBC Data Sources** in the profile pane, and select **Check Task Status**.

- f. Close the Configure JDBC Data Sources task pane.

NOTE In this step, you created the Global Configuration Database (GCD) data sources. You will create the initial object store data sources later in [“Create the data sources for an object store” on page 117](#).

4. Provide property values for the LDAP provider:
 - a. Right-click **Configure LDAP** in the profile pane, and select **Edit Selected Task**.
 - b. Provide the property values for your LDAP provider, using the appropriate table for your provider.

Tivoli® Directory Server

In this field...	Provide this information...
Directory service provider type	Select "Tivoli Directory Server" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Tivoli Directory Server.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Tivoli Directory Server. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.

In this field...	Provide this information...
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.

In this field...	Provide this information...
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later in Step d . The default is enabled.

Active Directory

In this field...	Provide this information...
Directory service provider type	Select "Active Directory" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Active Directory.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Active Directory. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in Active Directory. For example, (sAMAccountName={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later in Step d . The default is enabled.

ADAM or AD LDS

In this field...	Provide this information...
Directory service provider type	Select "ADAM or AD LDS" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to ADAM or AD LDS.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in ADAM or AD LDS. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>

In this field...	Provide this information...
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later in Step d . The default is enabled.

eDirectory

In this field...	Provide this information...
Directory service provider type	Select eDirectory from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to eDirectory.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in eDirectory. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.

In this field...	Provide this information...
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	<p>WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.</p>
SSL enabled	<p>WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.</p>
Kerberos support	<p>JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.</p>
Task enabled	<p>Select the Task enabled check box to execute the configure LDAP task later in Step d. The default is enabled.</p>

Sun Java Directory Server

In this field...	Provide this information...
Directory service provider type	<p>Select "Sun Java Directory Server" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.</p>

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Sun Java Directory Server.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Sun Java Directory Server. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.

To configure a Content Engine instance using the Configuration Manager graphical user interface

In this field...	Provide this information...
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later in Step d . The default is enabled.

To configure a Content Engine instance using the Configuration Manager graphical user interface

- c. Select **File > Save** to save your changes.
 - d. Apply the LDAP property settings by right-clicking **Configure LDAP** in the profile pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the LDAP properties.

TIP You can check the completion status of the task by right-clicking **Configure LDAP** in the profile pane, and select **Check Task Status**.
 - e. Close the Configure LDAP task pane.
5. Provide property values for Content Engine bootstrap.
 - a. Right-click **Configure Bootstrap Properties** in the profile pane, and select **Edit Selected Task**.
 - b. Provide the bootstrap property values, using the following table.

In this field...	Provide this information...
Content Engine EAR path	The fully qualified path to the Content Engine EAR file that was installed by the Content Engine installation program. For example, /opt/FileNet/ContentEngine/lib/Engine-ws.ear or c:\Program Files\FileNet\ContentEngine\lib\Engine-ws.ear.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
Bootstrapped EAR directory	The name of a subdirectory that will store the EAR file that contains the Content Engine bootstrap information. The bootstrap information is needed for creating the GDC and for starting Content Engine. Specify the directory relative to the ce_install_path/lib directory. For example, to specify /opt/FileNet/ContentEngine/lib/bootstrap, enter "bootstrap".
Bootstrap user name	The name of a directory server user that accesses the Global Configuration Database (GCD) data sources. Use only the short name of the bind user defined by the LDAP user attribute. For example, 'administrator'.
Bootstrap password	The password for the directory server user that accesses the Global Configuration Data (GCD) data sources. The tool encrypts the password for you.

In this field...	Provide this information...
Master key	<p>A word or phrase of any length that is used to encrypt sensitive GCD entries. The tool encrypts the password for you.</p> <p>The master key is used to configure the GCD settings for the Content Engine bootstrap settings. Store the master key in a secure location, as it is not retrievable. You will have to specify it later any time you access the GCD with applications built with non-FileNet APIs.</p>
Web Services HTTP port	<p>The Content Engine Web Services HTTP port number. The Content Engine Web Service (CEWS) is an industry standards-conformant SOAP interface to the FileNet Content Engine. It allows applications to access most of the functionality available through the Content Engine APIs. The default is 9080. For a cluster deployment, this port number must be the same value on each server in the cluster.</p>
Task enabled	<p>Select the Task enabled check box to execute the configure bootstrap task in Step d. The default is enabled.</p>

- c. Select **File > Save** to save your changes.
 - d. Apply the bootstrap property settings by right-clicking **Configure Bootstrap Properties** in the profile pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the bootstrap properties.

TIP You can check the completion status of the task by right-clicking **Configure Bootstrap Properties** in the profile pane, and select **Check Task Status**.
 - e. Close the Configure Bootstrap task pane.
6. Continue at [“Install the latest Content Search Engine Client files on Content Engine servers” on page 390](#).

Configure instances using the command line interface

In this subtopic you will configure a Content Engine Server instance on a given application server using the command-line version of Configuration Manager. Configuring a Content Engine instance involves four major steps, which are documented in detail in the procedural subtopics that follow. You must repeat all these steps to configure each Content Engine Server instance:

1. Generate the configuration XML files that contain the properties and values used to perform various tasks required to configure the environment for a Content Engine instance. See [“Generate the configuration XML files for a Content Engine instance” on page 66](#).

2. Edit the configuration XML files by inserting your site's properties and values. See ["Edit the configuration XML files for a Content Engine instance"](#) on page 69.
3. Execute the configuration XML files you edited. See ["Execute the configuration XML files for a Content Engine instance"](#) on page 70.
4. Check that the configuration XML files that you executed have resulted in a correct configuration of the Content Engine instance. See ["Check the completion status of Content Engine configuration tasks"](#) on page 72.

If you are deploying multiple Content Engine instances on the same machine, you will need to generate, edit, and deploy a complete set of configuration files for each instance. Store the configuration files for each instance in a separate directory.

You can navigate through the steps above by generating all the configuration XML files before editing, executing, or verifying any of them; or you can generate, edit, execute, and verify one file at a time.

TIP The following subtopic refers to Configuration Manager as `configmgr`. When you run the tool, substitute `configmgr.sh` (on UNIX) or `configmgr.bat` (on Windows) in place of `configmgr`, depending on your operating system.

Generate the configuration XML files for a Content Engine instance

The following table lists the configuration XML files that you will generate using Configuration Manager:

File Name	Description
configurejdbc.xml	Settings for configuring JDBC connections to the databases used by Content Engine. You will need to generate, edit, and execute the configure the JDBC task once for the data source for the Global Configuration Data (GCD) and once for the data source for each object store.
configureldap.xml	Settings for connecting to and searching within a directory server
configurebootstrap.xml	Settings for creating the Global Configuration Data (GCD) and starting Content Engine
deployapplication.xml	Settings for deploying a Content Engine instance
configureapplicationserver.xml	Parent file of the above listed configuration XML files that points to each configuration file. This file is created only if you generate all the configuration files at once instead of individually.
applicationserver.xml	Settings for the application server, including the location of the application server software and the name of the server. This file is generated when any other configuration file is generated (either all at once or individually) and is used by all of the configuration tasks.

You can generate the configuration XML files, in either of two ways:

- Run the tool multiple times, generating one configuration XML file at a time.
- Run the tool once to generate a “parent” file, `configureapplicationserver.xml`, and automatically generate all the configuration XML files. The parent file points to the individual configuration XML files.

Running the tool also generates the `applicationserver.xml` file (used in several configuration tasks). Subsequent executions of the tool will not overwrite `applicationserver.xml`.

To generate configuration XML files

1. Set the current directory to `ce_install_path/tools/configure`.
2. At the command prompt, run Configuration Manager to generate the configuration XML files all at once ([Step a](#)) or one at a time ([Step b](#)).

See [“Configuration Manager command-line reference” on page 695](#) for details on Configuration Manager syntax.

- a. To generate all the configuration files at once with a parent configuration file, run the following command. Do not type any line breaks when you type the command.

```
configmgr generateConfig -appserver app_server_type -db db_type  
-ldap ldap_type -deploy deploy_type -task ConfigureApplicationServer -path mypath
```

where:

app_server_type is WebSphere, WebLogic, or JBoss.

db_type specifies the type of database to be used by Content Engine and must be one of the following: mssql, oracle, oracle_rac, db2, or db2zos.

ldap_type specifies the type of directory service repository Content Engine uses for authenticating users and must be one of the following: activedirectory, adam, edirectory, sunjava, or tivoli. The adam option applies to both Microsoft ADAM and AD LDS.

deploy_type specifies the type of Content Engine deployment. The value must be one of the following: standard, cluster, or netdeploy (network deployment). Specify standard if you are deploying Content Engine to a standalone (that is, a server that is neither managed nor clustered) WebSphere, WebLogic, or JBoss application server. Specify cluster if you are deploying Content Engine to a WebSphere, WebLogic, or JBoss application server cluster. Specify netdeploy if you are deploying Content Engine to a managed WebSphere application server instance (using Network Deployment for managing individual servers that are not necessarily in a cluster).

`-path mypath` is optional and specifies the path to where the generated configuration XML files will be placed. If you are deploying multiple Content Engine instances on the same machine, you will need to specify a separate directory for each instance.

For example, the following command generates all the configuration XML files for a standard WebSphere deployment using Tivoli Directory Server and DB2 in the `ce_install_path/tools/configure/wstdb2` path:

```
configmgr generateConfig -appserver WebSphere -db db2 -ldap tivoli
-deploy standard -task ConfigureApplicationServer -path wstdb2
```

Continue at [“Edit the configuration XML files for a Content Engine instance” on page 69.](#)

- b. To generate a single configuration XML file, run the command in one of the following substeps:

- To generate the `configurejdbc.xml` file:

```
configmgr generateConfig -appserver app_server_type -db db_type
-ldap ldap_type -deploy deploy_type -task ConfigureJDBC -path mypath
```

- To generate the `configureldap.xml` file:

```
configmgr generateConfig -appserver app_server_type -db db_type
-ldap ldap_type -deploy deploy_type -task ConfigureLDAP -path mypath
```

- To generate the `configurebootstrap.xml` file:

```
configmgr generateConfig -appserver app_server_type -db db_type
-ldap ldap_type -deploy deploy_type -task ConfigureBootstrap -path mypath
```

where:

app_server_type is WebSphere, WebLogic, or JBoss.

db_type specifies the type of database to be used by Content Engine and must be one of the following: `mssql`, `oracle`, `oracle_rac`, `db2`, or `db2zos`.

ldap_type specifies the type of directory service repository Content Engine uses for authenticating users and must be one of the following: `activedirectory`, `adam`, `edirectory`, `sunjava`, or `tivoli`. The `adam` option applies to both Microsoft ADAM and AD LDS.

deploy_type specifies the type of Content Engine deployment. The value must be one of the following: `standard`, `cluster`, or `netdeploy` (network deployment). Specify `standard` if you are deploying Content Engine to a standalone (that is, a server that is neither managed nor clustered) WebSphere, WebLogic, or JBoss application server. Specify `cluster` if you are deploying Content Engine to a WebSphere, WebLogic, or JBoss application server cluster. Specify `netdeploy` if you are deploying Content Engine to a managed WebSphere application server instance (using Network Deployment for managing individual servers that are not necessarily in a cluster).

`-path mypath` is optional and specifies the path to where the generated configuration XML files will be placed. If you are deploying multiple Content Engine instances on the same machine, you will need to specify a separate directory for each instance.

Repeat [Step b](#) to generate one of the other configuration XML files, or continue at [“Edit the configuration XML files for a Content Engine instance” on page 69.](#)

You will eventually need to generate each of the configuration XML files to configure a Content Engine instance.

Edit the configuration XML files for a Content Engine instance

Complete the following procedure for each file you generated in [“Generate the configuration XML files for a Content Engine instance” on page 66](#) to insert your site’s properties and values. Use the information in your worksheet to specify the values for the parameters required to configure Content Engine. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select one of these Configuration Manager options:
 - CM: Set Application Server properties
 - CM: Configure JDBC Data Sources
 - CM: Configure LDAP
 - CM: Configure Bootstrap Properties
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade".
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

To edit values in the configuration XML files

1. Use a text editor or XML editor to open one of the following configuration XML files that you generated in [“Generate the configuration XML files for a Content Engine instance” on page 66](#):

- `configurejdbc.xml`
- `configureldap.xml`
- `configurebootstrap.xml`
- `applicationserver.xml`

If you generated all the files at once with the ConfigureApplicationServer task in [“Generate the configuration XML files for a Content Engine instance” on page 66](#), you will also have generated the `deployapplication.xml` file. You will open this file for editing in [“Deploy Content Engine instances” on page 78](#).

2. Make the following changes to each XML configuration file:
 - a. Replace each occurrence of `****INSERT VALUE****` with a value appropriate for your site. Refer to the descriptions in the file for more information.
 - b. Verify that the default values for the remaining properties are correct for your site.

NOTE If you previously specified values in the `configureldap.xml` file to add a realm to a federated repository, and want to put an additional realm in the repository, replace the previous values with the values for the additional realm.

- c. Set the `<TaskEnabled>` value to `true` in any configuration XML file you edit if you want to run the configuration task in [“Execute the configuration XML files for a Content Engine instance” on page 70](#).
 3. (Optional, WebSphere only) If you have previously created XA and non-XA data sources that you want to use for the Global Configuration Data (GCD) database, make the following edits:
 - a. In the `configurejdbc.xml` file, set the `<TaskEnabled>` value to `false` to avoid creating another pair (XA and non-XA) of data sources.
 - b. In the `configurebootstrap.xml` file, set the `<JDBCDataSourceXAFileName>` and `<JDBCDataSourceFileName>` values to the XA and non-XA JNDI names, respectively, associated with the Global Configuration Database (GCD) database.
 4. (Optional) Encrypt any passwords that you need to insert into the file by running the password encryption utility (see [“To encrypt a password for Configuration Manager” on page 700](#)), and then copy the encrypted value into the file. It is a best practice to encrypt the passwords for the following accounts:
 - The application server administrator account used in `applicationserver.xml`
 - The database administrator account used in `configurejdbc.xml`
 - The LDAP provider service principal account used in `configureldap.xml`
 - The master key—a word or phrase for encrypting sensitive FileNet P8 Global Configuration Data (GCD) entries—used in `configurebootstrap.xml`.
- IMPORTANT** Any password you do not encrypt will be stored and sent as clear text.
5. Save your edits.
 6. Continue at one of the following procedures:
 - Repeat [Step 1](#) through [Step 5](#) of this procedure for any other configuration XML file that you have not yet edited.
 - Continue at [“Execute the configuration XML files for a Content Engine instance” on page 70](#) to execute a configuration XML file(s) you have edited.
 - Return to [“Generate the configuration XML files for a Content Engine instance” on page 66](#) to generate additional configuration XML files.

Execute the configuration XML files for a Content Engine instance

After you have generated and edited the configuration XML files for a Content Engine instance, you need to apply the settings by executing the tasks.

- Any task with the `<TaskEnabled>` element value set to `false` will not run (see [Step 2 on page 69](#) in [“To edit values in the configuration XML files” on page 69](#)).
- If you are executing tasks for a profile that was created or edited in the Configuration Manager GUI, verify that the XML files contain values for the required passwords. See [“Handling passwords in Configuration Manager” on page 643](#) for more information.

To execute the configuration XML file settings

1. Start or stop the application server, depending on its type:

WebSphere and WebLogic

Start the application server if it is not already running.

JBoss

Stop the application server.

2. Set the current directory to `ce_install_path/tools/configure`.
3. At the command prompt, run Configuration Manager to execute the configuration XML files all at once ([Step a](#)) or one at a time ([Step b](#)). See [“Configuration Manager command-line reference” on page 695](#) for command syntax details.

When running the tool, the `-path mypath` parameter is optional and specifies where you placed the configuration XML file. If you do not specify a path, the file must be in `ce_install_path/tools/configure/profiles`.

- a. To execute all the configuration files at once with a parent configuration file, run the following command.

```
configmgr execute -task ConfigureApplicationServer -path mypath
```

where `-path mypath` is optional and specifies the path to the generated configuration XML files.

NOTES

- To execute all tasks at once, you must have generated all the files at once with the `ConfigureApplicationServer` task in [“Generate the configuration XML files for a Content Engine instance” on page 66](#).
 - If you did not enable the deployment task in the `deployapplication.xml` file, the tool will display an informational message indicating that the deployment did not occur. In which case, you will complete the deployment in [“Deploy Content Engine instances” on page 78](#).
- b. To execute a single configuration XML file, type and run the command in one of the following substeps. You can execute the files in any order.
 - To execute the `configurejdbc.xml` file:


```
configmgr execute -task ConfigureJDBC -path mypath
```
 - To execute the `configureldap.xml` file:


```
configmgr execute -task ConfigureLDAP -path mypath
```
 - To execute the `configurebootstrap.xml` file:


```
configmgr execute -task ConfigureBootstrap -path mypath
```

where `-path mypath` is optional and specifies the path to the generated configuration XML files.

TIP If you generated a complete set of XML files, but want to execute the files individually, you only need to execute the three files listed above. You cannot execute the `applicationserver.xml` file or the `ConfigureApplicationServer.xml` file. The values in the `applicationserver.xml` file are used to identify the application server for the other execution tasks. The `ConfigureApplicationServer.xml` file is a parent file that lists the tasks to execute when you execute all the configuration files at once.

Repeat [Step b](#) to execute one of the other configuration XML files, or continue at [“Check the completion status of Content Engine configuration tasks” on page 72](#).

You will eventually need to execute each of the configuration XML files to complete the configuration of a Content Engine instance.

IMPORTANT You must run the `ConfigureJDBC` task at least 2 times to configure the minimum data sources. First enter the Global Configuration Database (GCD) data source values, save, and run the task. Then, enter the object store data source values, save, and run the task again. You will need to edit and run the `ConfigureJDBC` task once for each additional object store.

4. Continue at [“Check the configuration status of a Content Engine instance” on page 93](#).

Check the completion status of Content Engine configuration tasks

Use the procedure in this subtopic to verify that one or more Content Engine configuration tasks that you executed in [“Execute the configuration XML files for a Content Engine instance” on page 70](#) have completed. You can check the status of all the tasks you executed or just check individual tasks.

Checking the completion status does not validate the information in the XML files.

To check the status of a Content Engine configuration

1. At the command prompt, run Configuration Manager to check the status of the configuration tasks all at once ([Step a](#)) or one at a time ([Step b](#)).

When running the tool, the `-path mypath` parameter is optional and specifies where you placed the configuration XML file. If you do not specify a path, the file must be in `ce_install_path/tools/configure/profiles`.

See [“Configuration Manager command-line reference” on page 695](#) for command syntax details.

- a. To check the status of all the configuration tasks at once, run the following command:

```
configmgr checkStatus -task ConfigureApplicationServer -path mypath
```

NOTE To check the status of all tasks at once, you must have generated all the files at once with the `ConfigureApplicationServer` task in [“Generate the configuration XML files for a Content Engine instance” on page 66](#).

Continue at [Step 3](#).

b. To check the completion status of a single configuration task, run the tool in one of the following substeps.

- To check the status of the ConfigureJDBC task using the configuration file in the specified path:

```
configmgr checkStatus -task ConfigureJDBC -path mypath
```

- To check the status of the ConfigureLDAP task using the configuration file in the specified path:

```
configmgr checkStatus -task ConfigureLDAP -path mypath
```

- To check the status of the ConfigureBootstrap task using the configuration file in the specified path:

```
configmgr checkStatus -task ConfigureBootstrap -path mypath
```

If you performed [Step b](#), repeat the step to check the status of any other configuration tasks you have executed; otherwise, continue at [Step 2](#).

2. Continue at one of the following procedures, as needed; otherwise, continue at [Step 3](#).
 - If you have any other configuration tasks to execute, continue at [“Execute the configuration XML files for a Content Engine instance” on page 70](#).
 - If you have any other configuration XML files to generate, continue at [“Generate the configuration XML files for a Content Engine instance” on page 66](#).
 - If you want to add a realm to a federated repository, continue at [“Edit the configuration XML files for a Content Engine instance” on page 69](#).
3. Continue at [“Install the latest Content Search Engine Client files on Content Engine servers” on page 390](#).

Task 5: Install the latest Content Search Engine Client files on Content Engine servers

To install the latest Content Search Engine Client files, perform the following procedure for each Content Engine instance you configured in [“Configure Content Engine instances”](#) on page 37.

To install the latest Content Search Engine Client files

1. Locate the Content Search Engine fix pack software for your Content Engine platform. For example, if Content Engine runs on Windows, locate the fix pack software that runs on Windows. For instructions on how to obtain the latest Content Search Engine Client files, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs”](#) on page 20.
2. Open the readme file for the latest IBM FileNet P8 Content Search Engine 4.5.0 fix pack and perform the installation procedures in the Content Search Engine Client section of the file.
3. Continue at [“Install the latest Process Engine Client files on Content Engine servers”](#) on page 75.

Task 6: Install the latest Process Engine Client files on Content Engine servers

To install the Process Engine Client files, perform the following steps on all application server machines where Content Engine Server is to be deployed. Except where noted, these steps apply to WebSphere, WebLogic, and JBoss.

To install the Process Engine Client files

1. On the machine where Content Engine is to be deployed, log on as *ce_install_user*.
2. Locate the Process Engine Client install software. The version of the Process Engine client software must match the version of Process Engine software.
3. Expand the (TAR or ZIP) Process Engine Client install software.
4. Install the software, either interactively or silently.

For both interactive and silent installs, refer to the appropriate information from your installation worksheet while performing the following steps. For information on the Process Engine parameter values, see ["Installation and upgrade worksheet"](#) on page 229 in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), perform the following steps to quickly see only the installation properties you must specify for the Process Engine client installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select PE Client installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

To run the program interactively, perform the following steps. To install silently, see page 77.

- a. From the table below, run the command appropriate for your operating system, and follow the wizard instructions:

Operating System	Install Program
AIX	P8PE-CLIENT-4.5.0-AIX.BIN
HPUX	P8PE-CLIENT-4.5.0-HPUX.BIN
HPUXi	P8PE-CLIENT-4.5.0-HPUXI.BIN
Linux	P8PE-CLIENT-4.5.0-LINUX.BIN
Solaris	P8PE-CLIENT-4.5.0-SOL.BIN
Windows	P8PE-CLIENT-4.5.0-WIN.EXE
zLinux	P8PE-CLIENT-4.5.0-ZLINUX.BIN

- b. Complete the Process Engine client install screens, as follows:

In this screen...	Perform this action...
Welcome to Process Engine Client Installer	Click Next to proceed with the installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Specify Installation Location	Choose the destination directory for Process Engine Client log files and uninstallation files. Accept the default location or click Browse to change the location.
Select FileNet P8 Applications	Select Content Engine as the product for which you would like to install Process Engine Client files. Click Next to continue.
Specify the EAR file to update	Specify the bootstrapped Content Engine EAR file to update with the new Process Engine client files. The default path in the installer does not point to the correct path for the bootstrapped EAR file. Change the path in the installer to point to the bootstrapped EAR file. Default paths to the bootstrapped EAR files are: UNIX <i>/opt/FileNet/ContentEngine/lib/bootstrap_dir</i> Windows <i>C:\Program Files\FileNet\ContentEngine\lib\bootstrap_dir</i> where <i>bootstrap_dir</i> is the directory that contains the bootstrap EAR file. Specify the file that was bootstrapped during Configuration Manager configuration steps. Valid options for the EAR file are: <ul style="list-style-type: none"> • Engine-jb.ear • Engine-jbc.ear • Engine-wl.ear • Engine-ws.ear

In this screen...	Perform this action...
Content Engine Installation Path	<p>Enter the full path to the Content Engine installation location. The defaults are as follows:</p> <p>UNIX</p> <p>/opt/FileNet/ContentEngine</p> <p>Windows</p> <p>C:\Program Files\FileNet\ContentEngine</p> <p>Click Next to continue.</p>
Stop running BPM software	<p>If the installer detects running BPM software components, click Next to stop the software and continue with the installation.</p>
Review Pre-Installation Summary	<p>Verify your component selections, and click Install to start installing Process Engine Client.</p>

To run the program silently, perform the following steps:

- a. In the expanded install software, open the file PEClient_silent_install.txt and edit it as follows:
 - i. Change the Variable_CheckboxCE line to the following:


```
-V Variable_CheckboxCE="true"
```
 - ii. Save your edit.
- b. From the table below, run the command appropriate for your operating system to perform the silent install:

Operating System	Install Program
AIX	P8PE-CLIENT-4.5.0-AIX.BIN -silent -options "PEClient_silent_install.txt"
HPUX	P8PE-CLIENT-4.5.0-HPUX.BIN -silent -options "PEClient_silent_install.txt"
HPUXi	P8PE-CLIENT-4.5.0-HPUXI.BIN -silent -options "PEClient_silent_install.txt"
Linux	P8PE-CLIENT-4.5.0-LINUX.BIN -silent -options "PEClient_silent_install.txt"
Solaris	P8PE-CLIENT-4.5.0-SOL.BIN -silent -options "PEClient_silent_install.txt"
Windows	P8PE-CLIENT-4.5.0-WIN.EXE -silent -options "PEClient_silent_install.txt"
zLinux	P8PE-CLIENT-4.5.0-ZLINUX.BIN -silent -options "PEClient_silent_install.txt"

Task 7: Deploy Content Engine instances

To deploy one or more instances of Content Engine, complete the procedures in this topic after you have completed the configuration tasks in [“Configure Content Engine instances” on page 37](#).

Complete the procedures in one of the following subtopics:

- [“Deploy instances using the Configuration Manager graphical user interface” on page 78](#)
- [“Deploy instances using the Configuration Manager command line interface” on page 90](#)

Use the command line version of Configuration Manager if either of these conditions is true:

- Your system is Novell SUSE Linux Enterprise 9. You can configure Content Engine only with the command line.
- You need an accessible software version of Configuration Manager for people with disabilities to use.

Deploy instances using the Configuration Manager graphical user interface

Use the procedure in this subtopic to deploy a Content Engine Server instance on an application server using the Configuration Manager’s graphical user interface. Use the information in your installation worksheet to specify the values that are required to configure Content Engine. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

For more information on the properties that you set in the Configuration Manager, roll your mouse over the property name to view the tool tip help for the property. Refer to the appendix [“Configuration Manager user interface reference” on page 645](#) for complete information on using the graphical user interface.

To deploy a Content Engine instance using the Configuration Manager graphical user interface

1. Log on to the application server where you installed the Content Engine software as *config_mgr_user*, the Configuration Manager user. For details on required accounts and related permissions, see [“Accounts for Content Engine” on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Start Configuration Manager by completing one of the following steps:

UNIX

```
ce_install_path/tools/configure/CMUI/cmui
```

where *ce_install_path* is the path to the Content Engine Server software.

Windows

Complete one of the following actions:

- Double-click the **FileNet Configuration Manager** desktop shortcut.
- Select **Start > All Programs > IBM FileNet P8 Platform > FileNet Configuration Manager**.
- Run `ce_install_path\tools\configure\CMUI\cmui.exe`.

where `ce_install_path` is the path to the Content Engine Server software.

3. Refer to your installation worksheet to specify the values for the properties required for your new profile. For more information, see ["Installation and upgrade worksheet" on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Deploy Application".
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

4. Select **File > Open Configuration Profile**.
5. In the Open Configuration Profile wizard, enter the path to the profile for the Content Engine instance that you configured in ["Configure Content Engine instances" on page 37](#), or click **Browse** to locate the profile directory, and then click **Finish**.
6. Right-click the **Deploy Application** task in the profile pane (left pane), and select **Edit Selected Task**.
7. Provide the property values for your deployment, using the appropriate table for your deployment type:

WebSphere Standard

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties that are displayed depend on the type of deployment that you select.

In this field...	Provide this information...
Bootstrapped EAR path	The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example: UNIX <code>/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</code> Windows <code>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</code>
Content Engine Application name	The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.
Application server name	The name of the WebSphere Application Server where Content Engine will be deployed.
Application server node	The name of the WebSphere Application Server node where Content Engine will be deployed.
Script	The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/ scripts/deployWSApplication.tcl</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\script s\deployWSApplication.tcl</code>

In this field...	Provide this information...
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 9. The default is disabled.</p> <p>Continue with Step 8 on page 90.</p>

WebSphere Cluster

In this field...	Provide this information...
Deployment type	Select "Cluster" from the list. The remaining properties that are displayed depend on the type of deployment that you select.
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre data-bbox="605 657 1425 720">/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</pre> <p>Windows</p> <pre data-bbox="605 793 1425 877">c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</pre>
Content Engine Application name	<p>The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.</p>
Application server cluster name	<p>The name of the WebSphere Application Server cluster where Content Engine will be deployed.</p>
Script	<p>The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example:</p> <p>UNIX</p> <pre data-bbox="605 1371 1425 1434">/opt/FileNet/ContentEngine/tools/configure/scripts /deployWSApplication.tcl</pre> <p>Windows</p> <pre data-bbox="605 1507 1425 1612">c:\Program Files\FileNet\ContentEngine\tools\configure\script s \deployWSApplication.tcl</pre>

In this field...	Provide this information...
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 9. The default is disabled.</p> <p>Continue with Step 8 on page 90.</p>

WebSphere Network Deployment

In this field...	Provide this information...
Deployment type	Select "Network Deployment" from the list. The remaining properties that are displayed depend on the type of deployment that you select.
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</pre>
Content Engine Application name	The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.
Application server name	The name of the WebSphere Application Server where Content Engine will be deployed.

In this field...	Provide this information...
Application server node	The name of the WebSphere Application Server node where Content Engine will be deployed.
Script	<p>The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/scripts /deployWSApplication.tcl</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\script s \deployWSApplication.tcl</pre>
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 9. The default is disabled.</p> <p>Continue with Step 8 on page 90.</p>

JBoss Standard

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties that are displayed depend on the type of deployment that you select.

In this field...	Provide this information...
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre data-bbox="605 520 1425 583">/opt/FileNet/ContentEngine/lib/bootstrap/Engine-jb.ear</pre> <p>Windows</p> <pre data-bbox="605 657 1425 741">c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-jb.ear</pre>
Kerberos support	<p>This setting specifies whether Kerberos authentication is used. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.</p>
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 9. The default is disabled.</p>

JBoss Cluster

In this field...	Provide this information...
Deployment type	Select "Cluster" from the list. The remaining properties that are displayed depend on the type of deployment that you select.
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre data-bbox="613 657 1385 720">/opt/FileNet/ContentEngine/lib/bootstrap/Engine-jbc.ear</pre> <p>Windows</p> <pre data-bbox="613 793 1385 877">c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-jbc.ear</pre>
Kerberos support	This setting specifies whether Kerberos authentication is used. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 9. The default is disabled.</p> <p>Continue with Step 8 on page 90.</p>

WebLogic Standard

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties that are displayed depend on the type of deployment that you select.

In this field...	Provide this information...
Bootstrapped EAR path	The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example: UNIX <code>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-wl.ear</code> Windows <code>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-wl.ear</code>
Content Engine Application name	The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.
Script	The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/scripts/deployWLApplication.py</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\deployWLApplication.py</code>
Temporary directory	The fully qualified path to a temporary directory to be used by the configuration task. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/tmp</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</code>

In this field...	Provide this information...
Task enabled	Select the Task enabled check box to execute the deploy application task later in Step 9 . The default is disabled. Continue with Step 8 on page 90 .

WebLogic Cluster

In this field...	Provide this information...
Deployment type	Select "Cluster" from the list. The remaining properties that are displayed depend on the type of deployment that you select.
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-wl.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-wl.ear</pre>
Content Engine Application name	<p>The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.</p>
Script	<p>The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/scripts/deployWLApplication.py</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\deployWLApplication.py</pre>

In this field...	Provide this information...
Temporary directory	The fully qualified path to a temporary directory to be used by the configuration task. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/tmp</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</code>
Task enabled	Select the Task enabled check box to execute the deploy application task later in Step 9 . The default is disabled. Continue with Step 8 on page 90 .

8. Select **File > Save**.
9. Right-click the **Deploy Application** task in the left pane, and select **Run Task**.
 Running the deploy task may take a few minutes. The task execution status messages are displayed in the Console pane below the deploy application properties.
10. Continue at [“Complete Content Engine post-deployment steps” on page 106](#).

Deploy instances using the Configuration Manager command line interface

Use the procedure in this subtopic to deploy a Content Engine Server instance on an application server using the Configuration Manager’s command-line interface. Deploying a Content Engine Server instance involves four major steps:

1. Generate the deploy-application XML file, `deployapplication.xml`. See [“Generate the deployapplication.xml file” on page 91](#).
2. Edit the `deployapplication.xml` file by inserting your site’s values. See [“Edit the configuration files for a Content Engine instance” on page 91](#).
3. Execute the `deployapplication.xml` file. See [“Execute the deployapplication.xml file for a Content Engine instance” on page 93](#).
4. Check that the `deployapplication.xml` file has resulted in a correct deployment of the Content Engine instance. See [“Check the configuration status of a Content Engine instance” on page 93](#).

If you are deploying multiple Content Engine instances on the same machine, you must generate, edit, and execute a `deployapplication.xml` file for each instance. Store each `deployapplication.xml` file in a separate directory.

NOTE This subtopic refers to the Configuration Manager tool as `configmgr`. When you run the tool, substitute `configmgr.sh` (on UNIX) or `configmgr.bat` (on Windows) in place of `configmgr`, depending on your operating system.

Generate the deployapplication.xml file

The `deployapplication.xml` file is created when you generate all files at once or when you generate the XML files for a single task using the `-task DeployApplication` switch. If you did not create the `deployapplication.xml` file in “Configure Content Engine instances” on page 37, complete the following procedure for the Content Engine instance you are deploying; otherwise, skip to “To edit the values in the configuration XML files” on page 91.

To generate the deployapplication.xml file

1. Log on to the application server machine as `config_mgr_user`, the user who will run Configuration Manager. For details on required accounts and related permissions, see “Accounts for Content Engine” on page 71 in *Plan and Prepare Your Environment for IBM FileNet P8*.

2. Set the current directory to `ce_install_path/tools/configure`, where:

`ce_install_path` is the path where you installed Content Engine.

3. Run the following command without carriage returns to generate the `applicationserver.xml` file and the `deployapplication.xml` file:

```
configmgr generateConfig -appserver app_server_type -deploy deploy_type  
-task DeployApplication -path mypath
```

where:

`app_server_type` specifies the type of application server: WebSphere, WebLogic, or JBoss.

`deploy_type` indicates one of the following deployment types: `standard`, `cluster`, or `netdeploy` (network deployment). The `netdeploy` value applies only to Content Engine deployment on WebSphere.

`-path mypath` is optional and specifies the path for the XML files. If you do not specify a path, the files will be placed in the `ce_install_path/tools/configure/profiles` directory.

If you are deploying multiple Content Engine instances on the same machine, you must specify a separate path for each instance.

See “Configuration Manager command-line reference” on page 695 for `configmgr` syntax details.

Edit the configuration files for a Content Engine instance

Complete the following procedure to insert your site’s values into the configuration XML files.

To edit the values in the configuration XML files

1. If you have not already edited the `applicationserver.xml` file in “Configure Content Engine instances” on page 37, set the application server property values for your site.
 - a. Use a text editor or XML editor to open the `applicationserver.xml` file.

- b. Edit the values in the `applicationserver.xml` file as appropriate for your site. Refer to the descriptions in the file and to the values in your installation worksheet. For more information, see ["Installation and upgrade worksheet" on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following steps to quickly see only the installation properties you must specify for deploying Content Engine:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Set Application Server Properties."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

- c. Save your edits.

2. Set the deployment property values for your site.

- a. Use a text editor or XML editor to open the `deployapplication.xml` file.

- b. Edit the values in the `deployapplication.xml` file as appropriate for your site. Refer to the descriptions in the file and to the values in your installation worksheet. For more information, see ["Installation and upgrade worksheet" on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following steps to quickly see only the installation properties you must specify for deploying Content Engine:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Deploy Application."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

In particular, complete the following substeps as applicable:

- i. By default, the value inside the `<TaskEnabled>` element in the `deployapplication.xml` file is set to `false`. For deployment to occur, set the value to `true`.
- ii. Verify that the default parameter values are correct for your site.
- iii. (WebSphere only) Specify values for the following XML element values that apply to your deployment type:
 - For standard deployment or network deployment, specify values for `<applicationservername>` and `<applicationservernode>`
 - For cluster deployment, specify values for `<applicationservername>`, `<applicationservernode>`, and `<applicationserverclustername>`

- iv. Save your edits.

3. Continue at ["Execute the `deployapplication.xml` file for a Content Engine instance" on page 93](#).

Execute the deployapplication.xml file for a Content Engine instance

Complete the procedure in this subtopic to execute the settings in the `deployapplication.xml` file.

To execute the deployapplication.xml file settings

1. Set the current directory to `ce_install_path/tools/configure`, where:
`ce_install_path` is the path where you installed Content Engine server software.
2. At the command prompt, run Configuration Manager to execute the `deployapplication.xml` file.

NOTE If you did not enable the deployment task in the `deployapplication.xml` file, the tool will display an informational message indicating that the deployment did not occur.

```
configmgr execute -task DeployApplication -path mypath
```

The `-path mypath` entry is optional and specifies the path where you placed `deployapplication.xml`. If you do not specify a path, the file must be in the following directory:

```
ce_install_path/tools/configure/profiles
```

If you are deploying multiple Content Engine instances on the same machine, you will need to specify a separate path to the `deployapplication.xml` file for each instance.

See [“Configuration Manager command-line reference” on page 695](#) for configmgr syntax details.

3. Continue at [“Check the configuration status of a Content Engine instance” on page 93](#).

Check the configuration status of a Content Engine instance

Use the procedure in this subtopic to check all the tasks, or just the one you executed in [“Edit the configuration files for a Content Engine instance” on page 91](#).

To check the status of a Content Engine configuration

1. At the command prompt, run the following command to check the status of the deploy application task:

```
configmgr checkStatus -task DeployApplication -path mypath
```

The `-path mypath` entry is optional and specifies the path where you placed the `deployapplication.xml` file. If you do not specify a path, the file must be in the `ce_install_path/tools/configure/profiles` directory. See [“Configuration Manager command-line reference” on page 695](#) for configmgr syntax details.

2. Continue at one of the following topics:
 - If the Content Engine instance is deployed in a JBoss cluster, continue at [“Deploy Content Engine to additional JBoss servers in a cluster” on page 94](#).
 - If you have more Content Engine instances to deploy, continue at [“Generate the deployapplication.xml file” on page 91](#).

- If you have no more Content Engine instances to deploy, “[Complete Content Engine post-deployment steps](#)” on page 106.

Deploy Content Engine to additional JBoss servers in a cluster

Use the following procedure to a deploy a Content Engine Server instance on each additional JBoss server in your cluster.

CAUTION Because JBoss clusters communicate state over multicast, it is critical that you configure clusters for Content Engine to segregate multicast traffic from each other and from other JBoss clusters. You can find instructions regarding JBoss cluster configuration at <http://www.jboss.com>.

To deploy Content Engine Server on additional JBoss servers in a cluster

1. Leave Content Engine deployed on the application server where you installed it.
2. Copy the following files from the initial Content Engine instance to each JBoss node you are setting up:
 - All data source (*JBoss_HOME/server/all/deploy/*-ds.xml*) files created as part of the configuration process.
NOTE Depending on how you installed JBoss, there might be data source files not created by Configuration Manager, such as *hsqldb-ds.xml*, in the same location. Do not copy these files.
 - *JBoss_HOME/server/all/deploy/Engine-ds.xml*
 - The JDBC driver in *JBoss_HOME/server/all/lib*
 - *JBoss_HOME/server/all/conf/login-config.xml*
 - *JBoss_HOME/server/all/deploy/Engine-jbc.ear*
NOTE Clustered JBoss instances are deployed from the “all” directory and not the “default” directory. You can find instructions regarding JBoss cluster configurations at <http://www.jboss.com>.
3. Start or restart the JBoss application server.
4. Verify that the *server.log* file located in the *JBoss_home/server/all/log* directory lists deployment of the WAR or EAR file you used. If it does, then the deployment of Content Engine Server is successful.
5. Continue at one of the following topics:
 - If you have any more Content Engine Server instances to deploy, continue at “[Execute the deployapplication.xml file for a Content Engine instance](#)” on page 93
 - If you have no more Content Engine Server instances to deploy, continue at “[Complete Content Engine post-deployment steps](#)” on page 106.

Task 8a: Install Tivoli Storage Manager client and add native API library paths (WebSphere)

If Tivoli Storage Manager fixed content devices will be in your IBM FileNet P8 environment, complete the following procedures on each application server where Content Engine is deployed.

To install Tivoli Storage Manager client

1. Download the Tivoli Storage Manager client software from the IBM Support site <http://www-01.ibm.com/support/docview.wss?uid=swg24019757>.
2. Complete the platform-specific installation instructions included with each Tivoli Storage Manager client download package.

(UNIX only) Record the path where you install Tivoli Storage Manager client because you will need to specify the path as the DSML directory when you create a Tivoli fixed content device in FileNet Enterprise Manager. If you are installing Tivoli Storage Manager client on multiple UNIX hosts, the installation path must be the same on each host.

On AIX, install Tivoli Storage Manager client at `/usr/tivoli/tsm/client/ba/bin`.

To copy the Tivoli Storage Manager API library files to additional servers

- If you are running a Content Engine server farm, copy the entire `tsm100` directory structure from the Content Engine installation directory to each of the servers in the farm. It is a best practice to use the same directory structure on each server in the farm. The following are example paths:

UNIX

```
/opt/FileNet/ContentEngine/tsm100
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100
```

To create a shared library definition for Tivoli Storage Manager native API library files

1. Log on to the WebSphere administrative console.
2. Create a shared library definition according to the type of deployment (standalone or clustered), the version of WebSphere, and the operating system on which WebSphere runs. For the detailed procedure on creating the shared library, visit this web site:

<http://www-01.ibm.com/software/webservers/appserv/was/library/>

- a. Specify a Node scope for the library.
- b. In a server farm, if you installed the `tsm100` directory in different locations, choose Server scope and add a Shared Library entry for each server in your server farm.
- c. Provide a name for the shared library, for example TSMAPLIB.

- d. In the Classpath field, specify the full path to the `TsmJavaApi.jar` file (substituting your own path if it differs from the default shown here for your operating system):

UNIX

```
/opt/FileNet/ContentEngine/tsm100/TsmJavaApi.jar
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100\TsmJavaApi.jar
```

- e. In the Native Library Path, specify the full path to the `tsm100` directory (substitute your own path if it differs from the ones shown below):

UNIX

```
/opt/FileNet/ContentEngine/tsm100
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100
```

- f. Save your changes to the master configuration.
- g. Navigate to the FileNetEngine application and click the **Shared library references** link.
- h. Under the Available box, select the shared library you created earlier (for example, TSMAPILIB) and click the right arrow to move it to the Selected box.
- i. Click OK twice to return to the FileNetEngine page and save changes to the master configuration.

Task 8b: Install Tivoli Storage Manager client and add native API library paths (WebLogic)

If Tivoli Storage Manager fixed content devices will be in your IBM FileNet P8 environment, complete the following procedures on each application server where Content Engine is deployed.

To install Tivoli Storage Manager client

1. Download the Tivoli Storage Manager client software from the IBM Support site <http://www-01.ibm.com/support/docview.wss?uid=swg24019757>.

(UNIX only) Record the path where you install Tivoli Storage Manager client because you will need to specify the path as the DSMI directory when you create a Tivoli fixed content device in FileNet Enterprise Manager. If you are installing Tivoli Storage Manager client on multiple UNIX hosts, the installation path must be the same on each host.

On AIX, install Tivoli Storage Manager client at `/usr/tivoli/tsm/client/ba/bin`.

To copy the Tivoli Storage Manager API library files to additional servers

- If you are running a Content Engine server farm, copy the entire `tsm100` directory structure from the Content Engine installation directory to each of the servers in the farm. It is a best practice to use the same directory structure on each server in the farm. The following are example paths:

UNIX

```
/opt/FileNet/ContentEngine/tsm100
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100
```

To create a shared library definition for Tivoli Storage Manager native API library files

1. Open in an edit window the WebLogic script that sets up the domain environment. The following are example paths to this script:

UNIX

```
/opt/bea/user_projects/domains/base_domain/bin/setDomainEnv.sh
```

Windows

```
C:\bea\user_projects\domains\base_domain\bin\setDomainEnv.cmd
```

2. Edit the WebLogic script by adding the lines shown below before the line in which the `WL_HOME` variable is set. Substitute your version identifier in place of `weblogic92` as appropriate. There is no carriage return after any line that ends with `'/'` or `'\'`.

AIX

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LIBPATH=${LIBPATH} : ${TSMAPILIB}
```

```
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LIBPATH EXT_POST_CLASSPATH
WL_HOME="/opt/bea/weblogic92"
export WL_HOME
```

HP-UX

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
SHLIB_PATH=${SHLIB_PATH}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export SHLIB_PATH EXT_POST_CLASSPATH
WL_HOME="/opt/bea/weblogic92"
export WL_HOME/opt/bea/user_projects/domains/base_domain/bin/
setDomainEnv.sh
```

Linux

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH EXT_POST_CLASSPATH
WL_HOME="/opt/bea/weblogic92"
export WL_HOME
```

Solaris

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH EXT_POST_CLASSPATH
WL_HOME="/opt/bea/weblogic92"
export WL_HOME
```

Solaris (64-bit)

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH_64=${LD_LIBRARY_PATH_64}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH_64 EXT_POST_CLASSPATH
JAVA_OPTIONS="${JAVA_OPTIONS} -d64"
export JAVA_OPTIONS
WL_HOME="/opt/bea/weblogic92"
export WL_HOME
```

Windows

```
set TSMAPILIB=C:\Program Files\FileNet\ContentEngine\tsm100
set PATH=%PATH%;%TSMAPILIB%
set EXT_POST_CLASSPATH=%EXT_POST_CLASSPATH%;%TSMAPILIB%\TsmJavaApi.jar
set WL_HOME=C:\bea\weblogic92
```

3. If you are using WebLogic Node Manager to start and stop WebLogic Managed Servers in a clustered environment, you must enable Node Manager to use the appropriate start script:
 - a. Open for editing the node manager configuration file `WL_HOME/common/nodemanager/nodemanager.properties`.
 - b. Set the `StartScriptEnabled` property to true (default is false).
 - c. Set the `StartScriptName` to match the script name used by Node Manager to start the managed server, depending on your operating system:

UNIX

StartScriptName=startManagedWebLogic.sh

Windows

StartScriptName=startManagedWebLogic.cmd

NOTE If the managed server is not on the same machine as the WebLogic Administration Server and you have an alternate script matching the name of the Managed Server in the domain `bin` directory, make sure to specify that script name instead of the more generic "startManagedWebLogic" script.

4. Save your edits in `nodemanager.properties` and restart the Node Manager.

Task 8c: Install Tivoli Storage Manager client and add native API library paths (JBoss)

If Tivoli Storage Manager fixed content devices will be in your IBM FileNet P8 environment, complete the following procedures on each application server where Content Engine is deployed.

To install Tivoli Storage Manager client

1. Download the Tivoli Storage Manager client software from the IBM Support site <http://www-01.ibm.com/support/docview.wss?uid=swg24019757>.

(UNIX only) Record the path where you install Tivoli Storage Manager client because you will need to specify the path as the DSML directory when you create a Tivoli fixed content device in FileNet Enterprise Manager. If you are installing Tivoli Storage Manager client on multiple UNIX hosts, the installation path must be the same on each host.

On AIX, install Tivoli Storage Manager client at `/usr/tivoli/tsm/client/ba/bin`.

To copy the Tivoli Storage Manager API libraries to additional servers

- If you are running a Content Engine server farm, copy the entire `tsm100` directory structure from the Content Engine installation directory to each of the servers in the farm. It is a best practice to use the same directory structure on each server in the farm. The following are example paths:

UNIX

```
/opt/FileNet/ContentEngine/tsm100
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100
```

To create a shared library definition for Tivoli Storage Manager native API library files

1. Open in an edit window the JBoss startup script that sets up the domain environment:

UNIX

```
run.sh
```

Windows

```
run.bat
```

2. Edit the startup script by adding the following lines at the start of the script:

- AIX

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LIBPATH=${LIBPATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LIBPATH JBOSS_CLASSPATH
```

- HP-UX

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
SHLIB_PATH=${SHLIB_PATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export SHLIB_PATH JBOSS_CLASSPATH
```

- Linux

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH JBOSS_CLASSPATH
```

- Solaris

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH JBOSS_CLASSPATH
```

- Solaris (64-bit)

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH JBOSS_CLASSPATH
JAVA_OPTS="${JAVA_OPTS} -d64"
export JAVA_OPTS
```

- Windows

```
set TSMAPILIB=C:\Program Files\FileNet\ContentEngine\tsm100
set PATH=%PATH%;%TSMAPILIB%
set JBOSS_CLASSPATH=%JBOSS_CLASSPATH%;%TSMAPILIB%\TsmJavaApi.jar
```

Task 9: Install ECM Centera SDK library files

If you intend to use Centera fixed content devices in your IBM FileNet P8 environment, complete the procedures in this task to install ECM Centera SDK library files on each Content Engine Server machine. The Content Engine 4.5 software package or latest fix pack includes a Centera directory that contains the supported Centera SDK files you must install.

To install EMC Centera SDK version 3.2 library files

1. Log on to the Content Engine Server machine with a user account that has the appropriate permissions to create folders and install files.
2. As shown in the following table, copy the appropriate Centera directory from the Content Engine software package or fix pack to a location on the Content Engine Server machine, such as the UNIX `/tmp` directory or Windows `C:\Temp` directory:.

Operating System	Directory To Be Copied
AIX, Solaris, Windows	Copy the entire <code>Centera</code> directory
Linux	Depending on your version of gcc, copy one of the following directories: <code>Centera/gcc3.3</code> <code>Centera/gcc4</code>
HP-UX 11i v1 (11.11)	Copy <code>Centera/11i-v1-11.11</code>
HP-UX 11i v2 (11.23)	Copy <code>Centera/11iv1-11.23</code>

3. On the Content Engine Server machine, open the install subdirectory of the Centera directory you copied.
4. Run the following installer script that corresponds to the operating system on the Content Engine Server machine. On UNIX, the installer script will prompt you for the installation path on the command line, for example, `C:\Centera_SDK.install` directory. On Windows, specify the install path on the command line, such as `C:\Centera_SDK`.

UNIX

```
install.sh
```

Windows

```
install.bat installation_path
```

The installer script creates both 32-bit and 64-bit library directories, and puts them in a default installation directory, depending on your operating system (as shown in the following table). Accept or change the default when prompted by the script.

Operating System	Subdirectories of extracted EMC Centera SDK Directory	Description
AIX, Solaris, and Windows	lib	lib has the native library files that are to be installed.
Linux	../gcc3.3/lib ../gcc4/lib	
HP-UX	../11i-v1-11.11/lib	
HP-UXi	../11i-v1-11.13/lib	

- When prompted by the installer script, accept or change the default installation locations for ECM Centera SDK library files.

To configure EMC Centera SDK environment variables for version 3.2

- In the Content Engine installation package or fix pack], locate the Centera sample setup script file for your operating system:

UNIX

setCenteraLibPath.sh

Windows

setCenteraLibPath.bat

- Modify the sample setup script as indicated in the following table.

The CENTERA_LIB_PATH variable must include the sample script file subdirectory, not just the installation directory that you designated in the previous procedure.

For example, if you have a 64-bit AIX system, and you change the destination installation path (*install_path* in the table that follows) from:

/usr/local/Centera_SDK (the default)

to:

/usr/local/Centera/SDK3.2.607

then change the installation path of the AIX script to:

/usr/local/Centera/SDK3.2.607/lib/64

Note that the actual location is appended with either `lib/32` or `lib/64` because the installation script creates both 32-bit and 64-bit library directories, and places them inside the `lib` directory.

Operating System	Script Revisions
AIX	<p>From:</p> <pre>CENTERA_LIB_PATH=/usr/local/Centera_SDK/lib/32 LIBPATH=\$LIBPATH:\$CENTERA_LIB_PATH export LIBPATH</pre> <p>to:</p> <pre>CENTERA_LIB_PATH=install_path/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>or:</p> <pre>CENTERA_LIB_PATH=install_path/lib/64 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre>
Solaris	<p>From:</p> <pre>CENTERA_LIB_PATH=/opt/Centera_SDK/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>to:</p> <pre>CENTERA_LIB_PATH=install_path/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>or:</p> <pre>CENTERA_LIB_PATH=install_path/lib/64 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre>
Linux	<p>From:</p> <pre>CENTERA_LIB_PATH=/usr/local/Centera_SDK/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>to:</p> <pre>CENTERA_LIB_PATH=install_path/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>or:</p> <pre>CENTERA_LIB_PATH=install_path/lib/64 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre>

Operating System	Script Revisions
HP-UX HP-UXi	<p>From:</p> <pre>CENTERA_LIB_PATH=/opt/Centera_SDK/lib/32 SHLIB_PATH=\$SHLIB_PATH:\$CENTERA_LIB_PATH export SHLIB_PATH</pre> <p>to:</p> <pre>CENTERA_LIB_PATH=install_path/lib/32 SHLIB_PATH=\$SHLIB_PATH:\$CENTERA_LIB_PATH export SHLIB_PATH</pre> <p>or:</p> <pre>CENTERA_LIB_PATH=install_path/lib/64 SHLIB_PATH=\$SHLIB_PATH:\$CENTERA_LIB_PATH export SHLIB_PATH</pre>
Windows	<p>From:</p> <pre>set CENTERA_LIB_PATH=C:\Centera_SDK\lib\32 set PATH=%PATH%;%CENTERA_LIB_PATH%</pre> <p>to:</p> <pre>set CENTERA_LIB_PATH=install_path\lib\32 set PATH=%PATH%;%CENTERA_LIB_PATH%</pre> <p>or:</p> <pre>set CENTERA_LIB_PATH=install_path\lib\64 set PATH=%PATH%;%CENTERA_LIB_PATH%</pre>

- Copy the modified script text into one of the application server startup scripts shown in the following table, or save the updated script and call it from the application server startup script.

Application Server	Startup Script (UNIX)	Startup Script (Windows)
WebSphere	setupCmdLine.sh	setupCmdLine.cmd
WebLogic	setDomainEnv.sh	setDomainEnv.cmd
JBoss	run.sh	run.cmd

Task 10: Complete Content Engine post-deployment steps

Before you can put an IBM FileNet P8 system into production, you must perform one of the following post-deployment procedures in this topic, depending on your application server type:

- [“To complete post-deployment steps \(WebSphere\)” on page 106](#)
- [“To complete post-deployment steps \(WebLogic\)” on page 107](#)
- [“To complete post-deployment steps \(JBoss\)” on page 107](#)

Then perform the procedure [“To verify the deployment of Content Engine” on page 107](#).

To complete post-deployment steps (WebSphere)

1. If you are using federated user repositories, perform the following substeps; otherwise, continue at [Step 2](#).
 - a. Using the WebSphere administrative console, navigate to **Security > Secure administration, applications, and infrastructure** and click **Configure**.
 - b. If you have not already done so, specify a unique user (short name) for the *Primary administrative user name*.

NOTE This name must exist in one of the realms and must be unique.
 - c. Specify the *Server user identity*. You can specify *Automatically generated server identity*, or specify one that exists in one of the repositories.

NOTE This name must exist in one of the realms and must be unique.
 - d. Save your changes to the master configuration.
2. Use the WebSphere administrative console to adjust the following security settings:
 - a. Enable administrative security, if it is not already enabled, and application security before creating a FileNet P8 domain.

To enable WebSphere application or administrative security, you must do so manually. The deployment of Content Engine does not enable or check these settings.
 - b. Disable Java2 security so that Content Engine will not be able to start and process requests.
3. Restart the WebSphere application server where Content Engine is deployed in one of the following ways, depending on your deployment type:
 - For a standalone server, stop and start the application server.
 - For a WebSphere network deployment, stop and start the application server where Content Engine is deployed, including the Deployment Manager and all managed nodes.
 - For a cluster, stop and start the cluster.
4. Continue at [“To verify the deployment of Content Engine” on page 107](#).

To complete post-deployment steps (WebLogic)

1. Restart the WebLogic application server (to reinitialize the WebLogic cache) where Content Engine is deployed, as follows:
 - For a standalone server, stop and start the application server.
 - For a cluster, stop and start the cluster.
2. Continue at [“To verify the deployment of Content Engine” on page 107.](#)

To complete post-deployment steps (JBoss)

1. If your directory server type is Windows Active Directory, perform the following substeps; otherwise continue at [Step 2](#):
 - a. Make a backup of `JBOSS_HOME/server/all/conf/login-config.xml` file
 - b. Open the `login-config.xml` for editing.
 - c. Locate the following line inside the scope of the `<login-module>` XML element at the beginning of the file:


```
<login-module code="org.jboss.security.auth.spi.LdapExtLoginModule"
                flag="sufficient">
```
 - d. Add the following line immediately after the line you located in [Step c](#):


```
<module-option name="java.naming.referral">follow</module-option>
```
 - e. Save your edit.
2. Stop and start the JBoss application server.
3. Continue at [“To verify the deployment of Content Engine” on page 107.](#)

To verify the deployment of Content Engine

1. Browse to the following web page:

`http://server:port/FileNet/Engine`

where:

server is the host name of the machine where Content Engine Server is deployed.

port is the HTTP port used by the application server where Content Engine Server is deployed. Example web page addresses are shown in the following table:

Application Server Type	Web Page Address
WebSphere	<code>http://server:9080/FileNet/Engine</code>
WebLogic	<code>http://server:7001/FileNet/Engine</code>
JBoss	<code>http://server:8080/FileNet/Engine</code>

NOTE It is a best practice to bookmark the Web page address in your browser.

2. Verify your installation by checking the following information on the Web page:
 - a. The value for the Startup Message key, which shows the Content Engine build and version (for example, dap440.001.008), must match the build and version in the `ce_install_path/ContentEngine/ce_version.txt` file.
 - b. The value for the Process Engine key, which shows the Process Engine Client build and version (for example, pui410.010), must match the build and version in the `pe_client_install_path/version.txt` file, where `pe_client_install_path` is the path to the directory where you installed the Process Engine Client files.
 - c. The values for JDBC driver, server instance, operating system, etc. must match the values you chose when planning the IBM FileNet P8 installation.
3. If you want to deploy another Content Engine instance on the application server, continue at [“Configure Content Engine instances” on page 37](#).
4. Continue at one of the following topics:
 - If you have not already installed FileNet Enterprise Manager, continue at [“Install FileNet Enterprise Manager” on page 34](#).
 - If you have a working FileNet Enterprise Manager available, continue at [“Establish the FileNet P8 domain and Global Configuration Data \(GCD\)” on page 109](#).

Task 11: Establish the FileNet P8 domain and Global Configuration Data (GCD)

With Content Engine installed and deployed, you will use Enterprise Manager to create a FileNet P8 domain. You can also use Enterprise Manager to set a URL to the IBM FileNet P8 online help if you did not do so when you ran the Content Engine installation program.

To create a FileNet P8 domain

NOTE If you run Enterprise Manager as a limited user account, you cannot update the *Base URL for the FileNet P8 Platform help files* field in the General tab of the Enterprise Manager properties dialog box.

1. Start Enterprise Manager by double-clicking the FileNet Enterprise Manager Administration Tool icon on the desktop, or by choosing **Start > All Programs > IBM FileNet P8 Platform > FileNet Enterprise Manager Administration Tool**.
2. Work through the screens in the following table. The initial values displayed in the screens are default values that you must change to match your site. Refer to your installation worksheet for the values for your site. For information, see "installation and upgrade worksheet" in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), perform the following steps to quickly see only the installation properties you must specify for the Create FileNet P8 domain wizard:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select "EM: Create FileNet P8 domain."
- Click the AutoFilter drop-down arrow in the "Setup Type" column header and select "Installation."
- Click the AutoFilter drop-down arrow in all the other column headers and select (All).

In this screen...	Perform this action...
FileNet P8 Logon	Click Add to create a FileNet domain. NOTE For subsequent logons to Enterprise Manager, you can access an existing FileNet P8 domain by clicking Connect .

In this screen...	Perform this action...
Add Domain Configuration	<p>Provide the following information, and then click OK.</p> <ul style="list-style-type: none"> • Nickname - A name (not part of any credentials) for connecting to Content Engine. • Connection - http • Server - The host name of the machine where the Deployment Manager (WebSphere) or Administrative Server (WebLogic) runs. <p>NOTE In a non-managed application server environment (such as a JBoss cluster, or a standalone WebSphere or WebLogic), specify the host name for just one of the application servers. You can configure Enterprise Manager connections to the other non-managed application servers.</p> <ul style="list-style-type: none"> • Port - The port number appropriate for you application server. For example: <ul style="list-style-type: none"> – 9080 (WebSphere) – 7001 (WebLogic) – 8080 (JBoss) <p>NOTE In a non-managed application server environment (such as a JBoss cluster, or a standalone WebSphere or WebLogic), specify the port number for just one of the application servers.</p> <ul style="list-style-type: none"> • Path - wsi/FNCEWS40MTOM • URL - http://<i>server</i>:<i>port</i>/wsi/FNCEWS40MTOM where <i>server</i> and <i>port</i> are the values you specified above. • Username - The value you specified for the bootstrap user name in Configuration Manager (see <i>ce_bootstrap_admin</i> in <i>Plan and Prepare Your Environment for IBM FileNet P8</i>). • Password - The password for the bootstrap user. • Remember password - Select the check box if you want to avoid typing the password each time you log on as the bootstrap user. (The password will be encrypted.) • Use integrated login - Select the check box if you want Kerberos authentication for the bootstrap user.

3. Continue at [“To configure directory service authentication” on page 111](#).

To configure directory service authentication

NOTE For multi-realm authorization, run the Create a Directory Configuration wizard once for each realm. Refer to [FileNet P8 Administration > Enterprise-wide Administration > FileNet P8 Security > How to > Configure for multiple realms](#).

1. In the FileNet P8 Logon dialog box, select the FileNet P8 domain you created in ["To create a FileNet P8 domain"](#) on page 109 and click **Connect**.
2. In the FileNet P8 Domain Logon dialog box, type the user name and password to log on to the FileNet P8 domain. The Create a Directory Configuration wizard appears.

NOTE If the wizard detects an error, check the application server log file on the machine where Content Engine is deployed:

Application Server Type	Path to log file
WebSphere	<i>WAS_install_path/AppServer/profiles/profile_name/logs/server_name/SystemOut.log</i>
WebLogic	<i>WLS_install_path/user_projects/domains/domain_name/servers/server_name/logs/server_name.log</i>
JBoss	<i>JBOSS_DIST/server/server_name/log/server_name.log</i>

3. Work through the Create a Directory Configuration wizard screens in the following table. The initial values displayed in the screens are default values that you must change to match your site.

The configuration parameters required by the Create a Directory Configuration wizard are in many cases the same as those you provided to Configuration Manager when you configured LDAP in ["Configure Content Engine instances"](#) on page 37.

If you have installed IBM FileNet P8 help, refer also to the topic for your directory service within the IBM FileNet P8 help topic [System Administration > Enterprise-wide Administration > FileNet P8 Security > Directory service providers](#).

Refer to your installation worksheet for the values for your site. For information, see "installation and upgrade worksheet" in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), perform the following steps to quickly see only the installation properties you must specify for the Create a Directory Configuration wizard:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select "EM: Create a Directory Configuration."
- Click the AutoFilter drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation".
- Click the AutoFilter drop-down arrow in all the other column headers and select (All).

In this screen...	Perform this action...
Welcome	Click Next to proceed.
Select Type and Name Directory Configuration	<p>Provide the following information, and then click Next.</p> <ul style="list-style-type: none"> • Type - The type of directory server you specified in Configuration Manager • Display Name - A name (unique across all FileNet P8 domains in a forest) for the new directory configuration • Existing Names - The names of existing directory configurations within the domain to help you choose a unique display name.
Select General Directory Configuration Properties	<p>Provide the following information, and then click Next.</p> <ul style="list-style-type: none"> • Host - The name or IP address of the host where the Windows domain controller is installed. In a forest environment, the Windows domain names must be distinct if name you specify must be unique within each. • Port - The LDAP port number (389, by default). • Directory Service User - Fully qualified distinguished name of <i>ce_service_user</i>, the directory service bind user you specified when you configured LDAP using Configuration Manager. • Password - Password of the directory service user. • Is SSL Enabled - True or False. <p>The following parameters apply only to Active Directory:</p> <ul style="list-style-type: none"> • Connection Timeout - Specifies the Active Directory Service provider connection timeout in milliseconds. The default is 500 milliseconds. If the connection is across a WAN, consider increasing the value. • Return Name as DN - Specifies format in which Active Directory returns user or group names: <ul style="list-style-type: none"> – True - Return in Distinguished Name format – False - Return in User Principal Name format (default choice)

In this screen...	Perform this action...
Select User Directory Configuration Properties	<p>Provide the following information, and then click Next.</p> <ul style="list-style-type: none"> • Base DN - Base distinguished string to use in LDAP user searches. • User Search Filter - LDAP search filter for finding user names. • User Display Name Attribute - The display name for a user object generated by the authentication provider: <p>Active Directory, Active Directory LDS, IBM Tivoli Directory Server, Novell eDirectory</p> <p>cn (by default)</p> <p>Sun Java System Directory Server</p> <p>uid</p> <p>User Short Name Attribute - The name you use to log in:</p> <p>Active Directory</p> <p>samAccount</p> <p>Active Directory, Active Directory LDS, IBM Tivoli Directory Server, Novell eDirectory</p> <p>cn</p> <p>Sun Java System Directory Server</p> <p>uid</p>

In this screen...	Perform this action...
Select Group Directory Configuration Properties	<p>Provide the following information, and then click Next.</p> <ul style="list-style-type: none"> Group Base DN - Base distinguished string to use in LDAP group searches. Group Search Filter - LDAP search filter for finding group names. Group Display Name Attribute - cn, by default. Group Short Name Attribute - cn, by default. Group Membership Search Filter - The search filter for group membership queries. <p>The following parameter applies to Active Directory only:</p> <ul style="list-style-type: none"> Search Cross Forest Group Membership: <ul style="list-style-type: none"> True - Enables cross-forest group membership searches. False - Disables such searches (the default). <p>The following parameter applies to all directory server types but has no effect for Active Directory LDS, which does not support cross-domain memberships:</p> <ul style="list-style-type: none"> Restrict membership to configured realms: <ul style="list-style-type: none"> Select the check box to limit group lookups, such that a user's group memberships in unconfigured realms are ignored. Clear the check box to prevent a user with memberships in unconfigured realms from logging on because the system cannot look up all the group memberships of the user).[Deleted the following (last) paragraph in this table cell.]
Completing the Create a Directory Configuration Wizard	Click Finish .

- In the Configure New Domain Permissions message box, click **OK** to acknowledge that the directory configuration is complete but remains in restricted mode. The Configure New Domain Permissions wizard automatically starts (if you are in Enterprise Manager for the first time and have not defined any GCD administrators). Continue at ["To configure permissions for a FileNet P8 domain" on page 114](#).

To configure permissions for a FileNet P8 domain

- Work through the screens in the Configure New Domain Permissions wizard, as shown in the following table.

For information on the GCD administrators, see “Installation and upgrade worksheet” in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Configure New Domain Permissions wizard:

- Click the AutoFilter drop-down arrow in the “Installation or Configuration Program” column header, and select “EM: Configure New Domain Permissions.”
- Click the AutoFilter drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation".
- Click the AutoFilter drop-down arrow in all the other column headers and select (All).

In this screen...	Perform this action...
Welcome	Click OK to proceed.
Specify Domain Administrators	Click Add to load the Select Users and Groups dialog box that lets you add users and groups to the list of GCD administrators. (Optional) Click Remove to remove the Content Engine system user (<code>ce_bootstrap_admin</code> in <i>Plan and Prepare Your Environment for IBM FileNet P8</i>). Click Next .
Completing the New Domain Permissions Wizard	Click Finish .

2. In the Configure New Domain Permissions message box, click **OK**.
3. Continue at one of the following procedures:
 - If you set a URL to the IBM FileNet P8 online help when you installed Content Engine, continue at [“To set the Statement Cache Size value for the GCD database” on page 116](#).
 - If you did not set a URL to the IBM FileNet P8 online help and want to do so now, continue at [“To set a URL to the IBM FileNet P8 online help” on page 115](#).

To set a URL to the IBM FileNet P8 online help

1. In Enterprise Manager, right-click the Enterprise Manager root node in the tree view and choose Properties.
2. In the *Base URL for the FileNet P8 Platform help files* box of the General tab, specify the URL of the IBM FileNet P8 online help that you deployed in [“Install IBM FileNet P8 Platform documentation \(All\)” on page 23](#). For example,

```
http://servername:port/ecm_help.war
```

where:

servername is the name of the host where you deployed IBM FileNet P8 help.

port is the port number used by the application server where you deployed IBM FileNet P8 help.

3. Continue at [“To set the Statement Cache Size value for the GCD database” on page 116.](#)

To set the Statement Cache Size value for the GCD database

If you are using Microsoft SQL Server 2005 JDBC Driver or Oracle JDBC Driver, you need to set the Statement Cache Size parameter value to 0 for each data source you created to access the GCD database, as shown in the following steps:

1. Access the page containing the Statement Cache Size parameter:

WebSphere

Navigate to the WebSphere administrative console page containing the field Statement Cache Size property. For example, in WebSphere 6.1.x, navigate to Resources > JDBC Providers > JDBC_provider > Data sources > *data_source* > WebSphere Application Server data source properties.

WebLogic

Navigate in the tree view of WebLogic Administration Console to *FNCEDomain* > Services > JDBC > Data Sources > *Data_Source_Name* > Connection Pool.

2. Set the Statement Cache Size to 0 and save your change.

Task 12: Create the data sources for an object store

Each object store in your site requires its own distributed (XA) and non-distributed (non-XA) JDBC data sources. When you completed [“Configure Content Engine instances” on page 37](#), you created the JDBC data sources for the Global Configuration Database (GCD). Complete either of the procedures in this topic to use Configuration Manager to create the pair (XA and non-XA) of data sources for the initial object store. (You can use the same procedures to create data sources for subsequent object stores.)

For each additional object store, you must create another pair of data sources, using the procedures in this topic. You can create these data sources after you have confirmed your Content Engine configuration.

NOTE Configuration Manager will not create a new data source with the same name as that of an existing data source. If you want to reuse the name of an existing data source for an object store, manually delete the existing data source before creating the new data source. Refer to your application server documentation for more information.

Refer to the information in your installation worksheet to complete the procedures in this topic. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

To create the data sources using the graphical user interface to Configuration Manager

1. If you have not done so already, log on to the machine where you installed Content Engine as *ce_install_user*. For details on required accounts and related permissions, see [“Accounts for Content Engine” on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Start the GUI version of Configuration Manager by running one of the following commands, depending on the operating system on the machine where you installed Content Engine:

UNIX

```
ce_install_path/tools/configure/CMUI/cmui
```

Windows

Complete one of the following actions:

- Double-click the **FileNet Configuration Manager** desktop shortcut.
 - Select **Start > All Programs > IBM FileNet P8 Platform > FileNet Configuration Manager**.
 - Run `ce_install_path\tools\configure\CMUI\cmui.exe`.
3. Refer to your installation worksheet to specify the values for the properties required for your new object store data source profile. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select one of these Configuration Manager options:
 - CM: Set Application Server properties
 - CM: Configure JDBC Data Sources
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

4. Start the Create New Configuration Profile wizard by choosing **File > New Configuration Profile** or by clicking the wizard icon in the tool bar.

In this screen...	Complete this action...
Configuration Profile Information	<ul style="list-style-type: none"> • Provide the following information for the profile: <ul style="list-style-type: none"> – Enter a name for the profile. The name must be valid as a directory name for your operating system. Configuration Manager will create a directory with the profile name for storing the configuration files associated with this profile. For more information of profiles, see “Configuration profile concepts” on page 639 in the Configuration Manager reference appendix. – Specify the path for the profile. Either type in the full path to the profile directory or click Browse to locate the directory. The default path is <code>ce_install_path/tools/configure/profiles</code>, where <code>ce_install_path</code> is the location where Content Engine is installed. • Choose an application server type for the profile. Select WebSphere, JBoss, or WebLogic. • Click Next. If you click Finish instead of Next, you will create a default profile instead of a profile for just the Configure JDBC task. You will need to come back later to supply the required application server properties before you can run the configure JDBC task. • Continue at one of the following screens: <ul style="list-style-type: none"> – “Set Application Server Properties for WebSphere” on page 120 – “Set Application Server Properties for JBoss” on page 121 – “Set Application Server Properties for WebLogic” on page 122

In this screen...	Complete this action...
Set Application Server Properties for WebSphere	<p>This screen is displayed only if you selected WebSphere in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the object store, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the name of the WebSphere application server cell where Content Engine will be deployed. – If you have already configured WebSphere to use certificates, clear the “Do not use SSL certificates for server communications” check box. Otherwise, leave the check box selected. <p>NOTE Selecting this check box will change your WebSphere settings for communicating with other servers, such as Application Engine.</p> • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 122.

In this screen...	Complete this action...
Set Application Server Properties for JBoss	<p data-bbox="605 352 1339 420">This screen is displayed only if you selected JBoss in the previous screen.</p> <ul data-bbox="605 436 1422 844" style="list-style-type: none"><li data-bbox="605 436 1422 714">• Provide the following information for the application server:<ul data-bbox="654 489 1422 714" style="list-style-type: none"><li data-bbox="654 489 1422 525">– Select the application server version from the list.<li data-bbox="654 535 1422 630">– Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory.<li data-bbox="654 640 1422 714">– Enter the name of the JBoss application server name where Content Engine will be deployed.<li data-bbox="605 730 1422 766">• Click Next.<li data-bbox="605 783 1422 844">• Continue with “Select the tasks that you want included in the Configuration Profile” on page 122.

In this screen...	Complete this action...
Set Application Server Properties for WebLogic	<p>This screen is displayed only if you selected WebLogic in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the object store, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the machine name or the IP address of the local host for the application server host. – Enter the fully qualified path to the WebLogic application server user projects directory, or click Browse to locate the directory. – Enter the WebLogic application server domain name where Content Engine will be deployed. – Enter the name of the WebLogic application server name where Content Engine will be deployed. • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 122.
Select the tasks that you want included in the Configuration Profile	<ul style="list-style-type: none"> • Select only the Configure JDBC Data Sources task. Clear the check box for all other tasks. • Click Finish to create the profile and save the application server properties.

The profile you create will be displayed as an icon in the profile pane (left-hand pane), along with the Configure JDBC Data Sources icon.

5. Provide property values for the JDBC data sources for the object store.
 - a. Right-click **Configure JDBC Data Sources** in the profile pane, and select **Edit Selected Task**.
 - b. Provide the property values for your database, using the appropriate table for your database type:

DB2® for Linux®, UNIX®, Windows®

In this field...	Provide this information...
JDBC driver name	Select “DB2 Universal JDBC Driver” from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the object store tablespace or database. For example, FNOS1DS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the object store tablespace or database. For example, FNOS1DSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the object stores.
Database name	The name of the object store database.
Database user name	The name of the DB2 object store tablespace user.
Database password	The password for the DB2 object store tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the object store. The file name must end with <code>-ds.xml</code> . For example, <code>os1-ds.xml</code> .

In this field...	Provide this information...
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the object store. The file name must end with <code>-ds.xml</code> . For example, <code>os1-ds.xml</code> .
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6 . The default is enabled.

DB2® for z/OS®

In this field...	Provide this information...
JDBC driver name	Select “DB2 for z/OS Universal JDBC Driver” from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the object store tablespace or database. For example, <code>FNOS1DS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD tablespace or database. For example, <code>FNOS1DSXA</code> .
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the GCD and object stores.
Database name	The name of the GCD database instance name.
Database user name	The name of the DB2 GCD tablespace user.
Database password	The password for the DB2 GCD tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.

In this field...	Provide this information...
JDBC data source file name	<p>The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	<p>Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6. The default is enabled.</p>

MS SQL Server

In this field...	Provide this information...
JDBC driver name	Select "Microsoft JDBC Driver 2005" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD tablespace or database. For example, FNOS1DS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD tablespace or database. For example, FNOS1DSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the SQL Server database instance in which you create databases for the GCD and object stores.
Database name	The name of the GCD database for SQL Server.
Database user name	The name of the SQL Server user with administrative rights to the GCD database.
Database password	The password for the SQL Server user with administrative rights to the GCD database. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.

In this field...	Provide this information...
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6 . The default is enabled.

Oracle

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD tablespace or database. For example, <code>FNOS1DS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD tablespace or database. For example, <code>FNOS1DSXA</code> .
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database name	The SID of the Oracle database containing the GCD tablespace.
Database user name	The name of the Oracle GCD tablespace owner.
Database password	<p>The password for the Oracle GCD tablespace owner. The tool encrypts the password for you.</p> <p>Enter the password again in the Confirm field.</p>

In this field...	Provide this information...
JDBC data source file name	<p>The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6 . The default is enabled.

Oracle RAC

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver (RAC support)" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the object store tablespace or database. For example, <code>FNOS1DS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the object store tablespace or database. For example, <code>FNOS1DSXA</code> .
Database server name RAC node 1	The host name of the machine where the database software is installed for node 1.
Database port number RAC node 1	The port number used by the Oracle database instance in which you create tablespaces for the object stores.
Database server name RAC node 2	The host name of the machine where the database software is installed for node 2.

In this field...	Provide this information...
Database port number RAC node 2	The port number used by the Oracle database instance in which you create tablespaces for the object stores.
Database service name	The SID of the Oracle database containing the object store tablespace.
Oracle RAC retries	The number of retries for Oracle RAC.
Oracle RAC delay	The amount of delay for Oracle RAC.
Database user name	The name of the Oracle object store tablespace owner.
Database password	The password for the Oracle object store tablespace owner. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the object store. The file name must end with <code>-ds.xml</code> . For example, <code>os1-ds.xml</code> .
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the object store. The file name must end with <code>-ds.xml</code> . For example, <code>os1-ds.xml</code> .
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6 . The default is enabled.

c. Select **File > Save** to save your changes.

- Apply the JDBC property settings by right-clicking **Configure JDBC Data Sources** in the profile pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the bootstrap properties.

TIP You can check the completion status of a task by right-clicking **Configure JDBC Data Sources** in the profile pane, and select **Check Task Status**.

- Repeat [Step 4](#) through [Step 6](#) for each additional object store in your environment. Each object store requires a separate data source.
- (Oracle and JBoss only) Continue at [“To edit XA data source XML files” on page 132](#).
- (WebSphere only) Stop and start WebSphere Application Server.
- Continue at [“Create the initial object store” on page 133](#).

To create the data sources using the command-line interface to Configuration Manager

1. If you have not done so already, log on to the machine where you installed Content Engine as *ce_install_user*. For details on required accounts and related permissions, see [“Accounts for Content Engine” on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

2. Set the current directory to *ce_install_path/tools/configure*, where:

ce_install_path is the path where you installed Content Engine.

3. Generate the *configurejdbc.xml* file and the *applicationserver.xml* file by running the following command:

```
configmgr generateConfig -appserver app_server_type -db db_type -ldap
ldap_type -deploy deploy_type -task ConfigureJDBC -path mypath
```

where:

app_server_type is WebSphere, WebLogic, or JBoss.

db_type specifies the type of database to be used by Content Engine and must be one of the following: mssql, oracle, oracle_rac, db2, or db2zos.

ldap_type specifies the type of directory service repository Content Engine uses for authenticating users and must be one of the following: activedirectory, adam, edirectory, sunjava, or tivoli. The adam option applies to both Microsoft ADAM and AD LDS.

deploy_type specifies the type of Content Engine deployment. The value must be one of the following: standard, cluster, or netdeploy (network deployment). Specify standard if you are deploying Content Engine to a standalone (that is, a server that is neither managed nor clustered) WebSphere, WebLogic, or JBoss application server. Specify cluster if you are deploying Content Engine to a WebSphere, WebLogic, or JBoss application server cluster. Specify netdeploy if you are deploying Content Engine to a managed WebSphere application server instance (using Network Deployment for managing individual servers that are not necessarily in a cluster).

-path mypath is optional and specifies the path to where the generated configuration XML files will be placed. If you are deploying multiple Content Engine instances on the same machine, you will need to specify a separate directory for each instance.

4. Use a text editor or XML editor to open the *applicationserver.xml* file and edit it as follows:
 - a. Refer to the appropriate parameter information from your installation and upgrade worksheet for the following steps. For information on the parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), complete the following steps to quickly see only the installation properties you must specify for your application server:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Set Application Server properties."
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."

- Click the AutoFilter drop-down arrow in all other column headers and select (All).
- b. Replace each occurrence of `****INSERT VALUE****` with a value appropriate for your site. Refer to the descriptions in the file for more information.
- c. Verify that the default values for the remaining properties are correct for your site.
- d. (Optional) Encrypt the password for the application server administrative user by running the password encryption utility (see [“Encrypt passwords” on page 700](#)), and then copy the encrypted value into the file.

CAUTION Any password you do not encrypt will be stored and sent as clear text.

- e. Save your edits.
5. Use a text editor or XML editor to open the `configurejdbc.xml` file and edit it as follows:
- a. Refer to the appropriate parameter information from your installation and upgrade worksheet for the following steps. For information on the parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following steps to quickly see only the installation properties you must specify for creating JDBC data sources:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Create JDBC data sources."
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
- b. Replace each occurrence of `****INSERT VALUE****` with a value appropriate for your site. Refer to the descriptions in the file for more information.
 - c. Verify that the default values for the remaining properties are correct for your site.
 - d. Set the `<TaskEnabled>` value to `true` so you can run the configuration task in [Step 6](#).
 - e. (Optional) Encrypt the password for the user of the database associated with the data sources you are creating by running the password encryption utility (see [“Encrypt passwords” on page 700](#)), and then copy the encrypted value into the file.

CAUTION Any password you do not encrypt will be stored and sent as clear text.

- f. Save your edits.
6. Execute the `configurejdbc.xml` file by running the following command:
- ```
configmgr execute -task ConfigureJDBC -path mypath
```
- where `-path mypath` is optional and specifies the path to the `configureJDBC.xml` file.

7. Check the completion status by running the following command:
- ```
configmgr checkStatus -task ConfigureJDBC -path mypath
```
- where `-path mypath` is optional and specifies the path to the `configureJDBC.xml` file.

8. Repeat [Step 3](#) through [Step 7](#) for each additional object store in your environment. Each object store requires a separate data source.
9. (Oracle and JBoss only) Continue at [“To edit XA data source XML files” on page 132](#).
10. (WebSphere only) Stop and start WebSphere Application Server.
11. Continue at [“Create the initial object store” on page 133](#).

To edit XA data source XML files

Configuration Manager puts the following <mbean> tag into the XML file for each XA data source it creates when the database type is Oracle and the application server type is JBoss:

```
<mbean code="org.jboss.resource.adapter.jdbc.vendor.OracleXAExceptionFormatter"
      name="jboss.jca:service=OracleXAExceptionFormatter">
  <depends optional-attribute name="TransactionManagerService">
    jboss:service=TransactionManager
  </depends>
</mbean>
```

At this point, if you have created an XA data source for the GCD in [“Configure Content Engine instances” on page 37](#) and have not manually created any XA data sources, only one XA data source XML file contains an <mbean> tag.

Because exactly one XA data source XML file must contain an <mbean> tag, you need to remove the tag from the XML file for the XA data source you have just created in this topic, or for any XA data source you create later; otherwise, you will not be able to create an associated object store.

Complete the following steps to remove the <mbean> tag from the XA data source XML file:

1. Navigate to the directory containing all the XA data source XML files. For example, if JBoss is installed on a UNIX machine and the JBoss server name is server1, the directory is typically `JBOSS_HOME/server/server1/deploy`.
2. Find the XML file for the XA data source you created in this topic and open it for editing. For example, if the XA data source is named FNDS1, the XML file name is `FNDS1XA-ds.xml`.
3. Find and delete the <mbean> tag from the XML file.
4. Save your edits.
5. Continue at [“Create the initial object store” on page 133](#).

Task 13: Create the initial object store

In this task you will create the initial object store. If you have not already done so, perform the following preparation before starting the Create an Object Store wizard.

- Set up the initial storage area for the object store (see [“Prepare storage areas for object stores” on page 56](#) in *Plan and Prepare your Environment for FileNet P8*).
- Install the latest Content Engine service pack, as indicated in [“Install Content Engine software updates” on page 36](#).
- Create XA and non-XA data sources for the object store, as indicated in [“Create the data sources for an object store” on page 117](#)).
- Read the FileNet P8 help topic [System Administration > Content Engine Administration > Object stores > Concepts](#)

NOTES

- The Create Object Store wizard will fail if you try to assign a new object store to a database/tablespace that is not completely empty.
- For each additional object store you intend to create, you must first create XA and a non-XA data sources, as indicated in [“Create the data sources for an object store” on page 117](#).
- To create an additional object store, you can perform the procedure in this topic again, or the one in the FileNet P8 help topic [System Administration > Content Engine Administration > Content Engine Wizard Help > Create Object Store](#).
- Once an object store is created, you can refine its definition and add content to it.

To create an object store

1. Start Enterprise Manager by double-clicking the FileNet Enterprise Manager desktop icon, or by choosing **Start > All Programs > FileNet P8 Platform > Enterprise Manager**.
2. In the FileNet P8 Logon screen, select the FileNet P8 domain in which you will create an object store, and then click **Connect**.
3. In the tree view, right-click the **Object Stores** container and choose **New Object Store** to start the Create an Object Store wizard.
4. Work through the wizard screens. For information on parameter names and values you will specify when running the wizard, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*. For additional details, click **Help** in the wizard screens.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Create Object Store wizard:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "EM: Create Object Store."

- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).

In this screen...	Perform this action...
Welcome	Click Next to proceed with creating an object store.
Name and Describe the Object Store	<p>Type the display name for the object store. The symbolic name and description are entered automatically as you type the display name, but you can edit them before leaving this screen. Click Next.</p> <p>NOTE The symbolic name, used for internal programmatic purposes, must contain only ASCII characters and must begin with an alphabetic character.</p>
Specify the Data Sources	<p>Specify the JNDI names associated with the data sources for your database, as follows:</p> <ul style="list-style-type: none"> • JNDI Data Source Name: The data source that binds the non-XA connection pool to the database/tablespace. • JNDI XA Data Source Name: The data source that binds the XA connection pool to the database/tablespace. <p>Click Next.</p>
Specify the default Content Store	<p>Click one of the following to specify the default location for the content of the object store, and then click Next. If you clicked</p> <ul style="list-style-type: none"> • Database Storage Area – continue at “Specify object store administrators” on page 138 • File Storage Area – continue at “Specify File Storage Area Directory” on page 135 • Fixed Storage Area – continue at “Fixed Storage Area” on page 135

In this screen...	Perform this action...
Specify File Storage Area Directory	<p>Type, or browse (Windows only) to, the path name of an <i>empty</i> directory to contain the file storage area:</p> <p>Windows - Specify the UNC of the network share to contain the file storage area. If you browse to the path name, be sure to omit the drive letter when you specify the UNC.</p> <p>UNIX - Specify the path to the file storage area:</p> <ul style="list-style-type: none"> • Local: <code><hfs_mount>/ecmdata/file_stores/obj_store_name</code> • Remote: <code><nfs_mount>/ecmdata/file_stores/obj_store_name</code> <p>NOTE Refer to “IT Administrator Tasks > Prepare storage areas for object stores > Configure file servers for file storage areas > users and groups” in <i>Plan and Prepare your Environment for FileNet P8</i> for information on the permissions required on the directory where your file storage area will be created.</p> <p>Click Next and continue at “Specify object store administrators” on page 138.</p>
Fixed Storage Area	<p>If you specified Fixed Storage Area as your default Content Store, choose a fixed content device from the drop-down list, specify the staging area path, and click Next.</p> <p>The items in the drop-down list are those fixed content devices that have been configured in the P8 domain's Fixed Content Devices page.</p> <p>If your fixed content device type is</p> <ul style="list-style-type: none"> • EMC Centera, continue at “EMC Centera” on page 136 • FileNet Image Services continue at “FileNet Image Services” on page 136 • NetApp SnapLock, continue at “NetApp SnapLock” on page 137

In this screen...	Perform this action...
EMC Centera	<p>Specify the information for the Centera device type:</p> <ul style="list-style-type: none"> • Default retention period: Select one of the settings for retention period. Content whose retention period has not yet expired cannot be deleted. Your selection will override the fixed content device's own retention setting, unless you select the "Same as..." (which uses the fixed content device's own setting). Note that the expiration date only indicates when content can be deleted; it does not carry out the deletion. • No minimum (default): Content may be deleted at any time (retention period is zero). • Infinite (content can never be deleted): Content can never be deleted (retention period is infinitely long). • Same as the retention period of the fixed content device: Use the default value of the fixed content device itself. • User defined: Use the controls to set a retention period <p>Continue at "Specify object store administrators" on page 138.</p>
FileNet Image Services	<p>Specify the information for the FileNet Image Services device type:</p> <ul style="list-style-type: none"> • IS Document Class Displays the Image Services document class that was selected as the default at the time the IS Fixed Content Device was created. • Use default Select to use the default document class. • Selected below Select to query the IS server for a list of eligible document classes that will appear in the drop-down list. Select one of the classes. If you use this option and change the default setting, map this IS document class to an object store document class if documents will be captured by IS and exported to Content Engine. <p>Continue at "Specify object store administrators" on page 138.</p>

In this screen...	Perform this action...
NetApp SnapLock	<p>Specify the information for the NetApp SnapLock device type:</p> <ul style="list-style-type: none"> • Default retention period Select one of the settings for retention period. You cannot delete content whose retention period has not yet expired. Note that the expiration date only indicates when content can be deleted; it does not carry out the deletion. • Minimum The creation time of each document + the minimum retention value specified for the fixed content device. • Maximum The creation time of each document + the maximum retention value specified for the fixed content device. • Default The creation time of each document + the default retention value specified for the fixed content device. • User defined The creation time of each document + the value specified in the edit box. Note that this must be between the minimum and maximum retention values. <p>Continue at “Specify object store administrators” on page 138.</p>

In this screen...	Perform this action...
Specify object store administrators	<p>An object store administrator can log on to Enterprise Manager, has administrative (add/delete/change) access to the object store, and is in security lists on objects. The initial object-store administrators list includes the account that creates the object store.</p> <p>To add object store administrators to the list, do the following:</p> <ol style="list-style-type: none"> Click Add... In the Select Users and Groups screen, specify object type, realm, and search criteria as needed, and then click Find to display a list from which to select object store administrators. Select a single item, or press and hold the CTRL (or SHIFT) key, and use the left mouse button to select multiple items (or the first and last of a range of items). Release the CTRL (or SHIFT) key and click OK. <p>To remove object store administrators from the list, do the following:</p> <ol style="list-style-type: none"> Select a single item, or press and hold the CTRL (or SHIFT) key, and use the left mouse button to select multiple items (or the first and last of a range of items). Release the CTRL (or SHIFT) key and click OK. <p>When your list is complete, click Next and continue at “Specify Initial User Groups” on page 139.</p> <p>NOTE If you specify an empty list, the wizard automatically adds #AUTHENTICATED-USERS, which gives all network users in the authentication realm administrative access to the object store (for example, under Windows authentication, all accounts in Domain Users).</p>

In this screen...	Perform this action...
Specify Initial User Groups	<p>User groups have non-administrative (browse directories and read documents) access to the object store. Specify the initial list of groups, as follows:</p> <p>To add user groups to the list, do the following:</p> <ol style="list-style-type: none"> Click Add... In the Select Users and Groups screen, specify object type, realm, and search criteria as needed, and then click Find to display a list from which to select user groups. Select a single item, or press and hold the CTRL (or SHIFT) key, and use the left mouse button to select multiple items (or the first and last of a range of items). Release the CTRL (or SHIFT) key and click OK. <p>To remove user groups from the list, do the following:</p> <ol style="list-style-type: none"> Select a single item, or press and hold the CTRL (or SHIFT) key, and use the left mouse button to select multiple items (or the first and last of a range of items). Release the CTRL (or SHIFT) key and click OK. <p>When your list is complete, click Next.</p> <p>NOTE If you specify an empty list, the wizard automatically adds #AUTHENTICATED-USERS, which gives non-administrative access to all network users in the authentication realm.</p>
Completing the Create an Object Store Wizard	<p>Review your selections and click Finish to create the object store. When the status displayed in the Object Store Create Status window shows that the object store has been successfully created, click OK.</p>

Task 14: Verify the Content Engine installation

Perform the following procedure to verify that Enterprise Manager can successfully access the object store you created in “[Create the initial object store](#)” on page 133. Perform the procedure also for each subsequent object store you create.

The procedure verifies that you can carry out the following operations in Enterprise Manager:

- Create folders and documents.
- Check documents in and out.

To verify the Content Engine installation

1. In Enterprise Manager, create a subfolder as follows:
 - a. Expand the **Object Stores** container and expand the node for the object store you just created.
 - b. Right-click the icon of the folder labeled **Root Folder**, and select **New Sub Folder** to start the Create New Folder wizard.
 - c. Enter the folder name, click **Create**.
2. Create a document as follows:
 - a. Expand the **Root Folder container**.
 - b. Right-click the **subfolder** you just created, and select **New Document**.
 - c. Enter the Document Title (for example, *Coffee Bean.bmp*), click **With content**, and click **Next**.
 - d. Click **Browse/Add** to select a file (for example, *c:\windows\Coffee Bean.bmp*), click **Open**, and then click **Create**.

NOTE The new containment name should be *Coffee Bean* with a major version of 1.
3. Check out a document as follows:
 - a. Right-click the document object (**Coffee Bean.bmp**) you just created, and select **Exclusive Check Out** (Default). Note the version number of the document as you check it out.
 - b. Navigate to the folder where you want the checked-out document to reside and click **Open**.
 - c. Click **Yes** to edit the file.
 - d. Make some change to the file and save it.
 - e. Close the application you used to edit the file.
4. Check in a document, as follows:
 - a. Right-click the document object (**Coffee Bean.bmp**) you just edited, and select **Check In**.
 - b. In the File Name field, click **Browse/Add**.
 - c. Select the file you have checked out (e.g., *Coffee Bean.bmp*) and click **Open**.

- d. Click **Check In**.
- e. Right-click the **document object** you just checked in and click the **Versions** tab of the Properties dialog box. You should now see the Major Version field change once the document is checked in. Note that the version number has been incremented.

To enable Enterprise Manager to display file storage area status

The Windows user who logged on to Enterprise Manager as a FileNet P8 user and then created a file storage area will see the status of the file storage area as *online*, and will be able to add content to it. All other Windows users, even if logged on to Enterprise Manager as the same FileNet P8 user who created the file storage area, will see its status as *offline*, and thus will not be able to add content to it.

- To make file storage areas visible and accessible to a Windows logon user, do one of the following:
 - Add the user to the directory security of the file storage area with the following permissions: Modify, Read & Execute, List Folder Contents, Read, and Write.
 - As a member of the Local Administrators group, add the Windows logon user to a group account, as explained in the IBM FileNet P8 help topic [FileNet P8 Administration > Enterprise-wide Administration > FileNet P8 Security > Authorization > Storage area security](#).

Install and configure Content Search Engine

This section contains the following major topics:

- [“Install Content Search Engine” on page 150](#)
- [“Configure Content Search Engine” on page 143](#)
- [“\(optional\) Install additional locales” on page 159](#)
- [“Create a Content Search Engine collections directory” on page 162](#)
- [“Configure Content Engine for content-based retrieval” on page 165](#)
- [“Verify the Content Search Engine installation” on page 170](#)

Task 15: Configure Content Search Engine

Use this procedure to configure services required on the K2 Master Administration Server, and on additional Administration Servers you may install for IBM FileNet P8 Content Search Engine. All servers are configured through the Master Administration Server Dashboard.

NOTES

- When naming servers you create with this procedure, it is a best practice to indicate the type of server you've created. Otherwise, when you configure Content Engine through the Enterprise Manager, determining which server is which could be confusing. For example, use *server_name_broker* to indicate a Broker Server service.
- Ensure you carefully record the server names, ports and settings that you define. Much of the following information will be required later when you configure the IBM FileNet P8 Content Engine for Content-Based Retrieval later in this guide.
- A range of ports is recommended in the Verity K2 Dashboard for each service you create. You do not have to choose a port number from within that range.
- Repeat the related step in the procedure below to add additional services. Some guidelines must be adhered to when adding additional services:
 - Multiple brokers can be assigned, so that if one goes down the others will be used. However, each broker must have all K2 Servers (search servers) attached that are needed to access collections (index areas). The Content Engine Server will not call multiple brokers and merge the results.
 - If you add additional Index Servers and K2 Servers (search servers), they will not be activated until you enable them through Enterprise Manager. See ["Configure Content Engine for content-based retrieval" on page 165](#) for details.
 - Each K2 Administration Server must contain a Ticket Server for Content Engine.
 - For good stability and performance, Broker Servers must be attached to local Ticket Servers for security on each machine.

To configure Content Search Engine

1. Configure the Autonomy K2 Dashboard to use SSL security. The Autonomy K2 Dashboard web application, by default, uses a non-SSL web site and sends username and password information in plain text. For information on how to modify your Tomcat web applications to use SSL, access the following address:

`http://tomcat.apache.org/tomcat-5.5-doc/ssl-howto.html`

2. Access the K2 Dashboard by launching your browser and entering:

`http://Master Administration Server hostname:9990/verity_dashboard/main.jsp`

Use the appropriate values from your installation and upgrade worksheet for the procedures that follow. For more information, see ["Installation and upgrade worksheet" on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (p8_worksheet.xls), perform the following steps to quickly see only the required properties:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "K2 Dashboard".
 - Optional: click the **AutoFilter** drop-down arrow in the "FileNet P8 Component" column header and select "CSE (UNIX)" or "CSE (Windows)", depending on your operating system type.
 - Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
3. Create a K2 Index Server, as follows:
 - a. Click **K2 Index Servers** under System View.
 - b. Click **Add a K2 Index Server** on the K2 Index Server Summary page.
 - c. Enter the following information on the Configure basic settings for the new K2 Index Server page:
 - Service Alias: *K2 Index Server Alias*
 - Port: 9960 - 9979 (suggested range)
 - d. Click **Next** to continue with the installation.
 - e. Enter the following information on the Configure threads for the K2 Index Server page:
 - Synchronous Threads: 25
 - Asynchronous Threads: 3
 - Access Type: **Authorized Administrator**
 - f. Click **Finish** to continue with the installation.
 4. Set the Index Server logging properties:
 - a. Click the Index Server, Under System View, that you want to adjust.
 - b. Click **Edit Properties** under Actions.
 - c. Click the **Logging** tab.
 - d. For Status Log Nominal Size, enter the following value:
9000 kilobytes
 - e. Click **Modify**.

5. Create a K2 Broker Server:
 - a. Click **K2 Brokers** under System View.
 - b. Click **Add a K2 Broker** on the K2 Broker Summary page.
 - c. Enter the following information on the Configure basic settings for the new K2 Broker page:
 - Service Alias: *K2 Broker Server Alias*
 - Port: 9900 - 9909 (suggested range)
 - d. Click **Finish**.
6. Create a K2 Server (search server) and attach the Broker:
 - a. Click **K2 Servers** under System View.
 - b. Click **Add a K2 Server** under Actions on the K2 Server Summary page.
 - c. Enter the following information on the Configure basic settings for the new K2 Server page:
 - Service Alias: *K2 Server (search server) Alias*
 - Port: 9920 - 9949 (suggested range)
 - d. Click **Next**.
 - e. Click **Next** on the *Set security options for this service* page.
 - f. Enter the following information on the Attach to K2 Brokers page:
 - Select the K2 Brokers that will provide access to this service: Select the K2 Broker you created in step 3 from the drop-down menu, *server_name_broker*.
 - g. Click **Finish**.
7. Import the IBM FileNet Styleset.
 - a. Click **Collections** under System View.
 - b. Click **Manage Style Sets** under Actions on the Collection Summary page.
 - c. Click **Import** on the Manage Style Sets page (top right).

d. Enter the following information on the Import page:

- Style Set Alias: `FileNet_FileSystem_PushAPI`
- Gateway Type: `--Auto-detect--`
- Source Administration Server. If multiple servers are installed, choose the server to which you will import the Styleset.
- Source Path:

Windows

```
install_path\verity\data\stylesets\FileNet_FileSystem_PushAPI
```

UNIX

```
install_path/verity/data/stylesets/FileNet_FileSystem_PushAPI
```

e. Click **Import**.

NOTE The K2 Dashboard displays a notification that the StyleSet Editor web application cannot be accessed. This message can be ignored as it relates to a function that is not used by IBM FileNet Content Search Engine.

8. Create a K2 Ticket Server.

a. Click **K2 Ticket Servers** under System View.

b. Click **Add a K2 Ticket Server** under Actions on the K2 Ticket Server Summary page.

c. Enter the following information on the Configure basic settings for the new K2 Ticket Server page:

- Service Alias: *K2 Ticket Server Alias*
- Port: 9910 - 9919 (recommended range)

d. Click **Next**.

e. Enter the following information on the Configure the login module to use with this K2 Ticket Server page:

- Select which Login Module type to use with this K2 Ticket Server:

NOTE LDAP Ticket Servers are not currently supported.

– Windows

– UNIX

- Default Domain (Windows only): Enter the domain on which this K2 Server is authenticated.

f. Click **Next**.

- g. Enter the following information on the Configure the persistent store module to use with this K2 Ticket Server page:
 - Select the Persistent Store Module type to use with this K2 Ticket Server: Choose File and Memory.
 - h. Click **Finish**.
 - i. (Windows only) Specify local login settings:
 - i. Click **Edit Properties**.
 - ii. Click Windows Login Module.
 - iii. Check **Use Local Credentials**.
 - iv. Check Enable Built-in Groups.
 - v. Click **Modify**.
9. Set Autonomy K2 Administration Security.
- a. Click the K2 Ticket Server you created.
 - b. Click **Manage Administration Security** under Actions.
 - c. Enter the following information on the Manage Administration Security page:
 - Select a K2 Ticket Server to configure for administration security: From the drop-down menu, select the K2 Ticket Server you just created.
 - User Name: Enter the *k2_os_user*. For UNIX installs, this is the user you logged in as to run the installation. For details on required accounts and related permissions, see [“Accounts for Content Search Engine” on page 92](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
 - Password: Enter the authentication password.
 - Default Domain (Windows only): Enter the domain on which this user and K2 Server are authenticated.
 - d. Click **Modify**.
- The K2 software will authenticate the user based on the information you entered. If the check fails, an error message will indicate what failed and request that you re-enter the information.
- If administrator access is successful, Autonomy K2 will close the Dashboard and require that you log on again as the Dashboard Administrator to complete the configuration.
10. Launch the K2 Dashboard and log on.

11. Restart K2 services:

- a. Under *Notifications* on the K2 Dashboard Home page, a number of servers are listed as requiring a restart. Click **Start/Stop this Service** to access the settings page and follow the instructions listed there. You must perform either a **Quick Restart** or a **Full Restart**.
- b. Click Home in the top-left corner of the page after each restart to view the remaining notifications. Repeat the process until there are no notifications remaining.

12. Enable additional K2 Admin Users (optional).

- a. From the K2 Dashboard home page, click **Administration Servers**.
- b. Click **Manage K2 Administrative Users**.
- c. Click **Add User** on the Manage K2 Administrative Users page.
- d. Enter the name of an authenticated user on the directory service that you want to make a K2 Administrator and click **Add**.

13. Enable security on the K2 services you have created.

- a. From the K2 Dashboard home page, click **K2 Ticket Servers**.
- b. Click your ticket server *server_name_ticket_server*.
- c. Click **Manage K2 Broker/K2 Server Security** in the Services Secured by this K2 Ticket Server section of the page (bottom right).
- d. Click the **K2 Servers** button on the Manage K2 Broker/K2 Server Security page.
- e. Click the service you just created which is listed in the window on the right to enable security.

CAUTION If you have a multi-server configuration, numerous services, installed on other machines, will be listed also. Select only the service to which you want to attach a broker. Brokers must be attached to local ticket servers for Content Search Engine.

- f. Click the **K2 Brokers** button on the Manage K2 Broker/K2 Server Security page.
- g. Click the Broker in the window on the right that you want to attach to the local K2 ticket server you selected above.
- h. Click **Modify** to save your changes.

14. Restart K2 services, as follows:

- a. Click **Home** in the top left corner of the page.
- b. Under *Notifications* on the Verity K2 Dashboard Home page, a number of servers are listed as requiring a restart. Click **Start/Stop this Service** to access the settings page and follow the instructions listed there. You must perform either a **Quick Restart** or a **Full Restart**.

Click **Home** in the top left corner of the page after each restart to view the remaining notifications. Repeat the process until there are no notifications remaining.

To configure services on Administration Servers

Use this procedure to create and configure services on specific Content Search Engine machines (Administration Servers), other than the Master Administration Server. Services for all machines in your Content Search Engine configuration are configured through the Master Administration Server Dashboard.

1. Click **Administration Servers** under System View.
2. Click the Administration Server to which you want to add services.
3. Click **Add a Service** under K2 Services on this Administration Server.
4. Select the service you want to add.
5. Follow the instructions and guidelines for the appropriate service in the *To configure Content Search Engine* procedure above to complete the service addition.

Task 1: Install Content Search Engine

Use this procedure to install and configure IBM FileNet P8 Content Search Engine, an optional component based on the Autonomy K2 product.

Overview

The Autonomy K2 software must be installed on each machine that is part of your Content Search Engine configuration. You must designate one machine in the configuration as the Master Administration Server. The Master Administration Server can be used as a standalone Content Search Engine, or additional K2 Administration Servers can be added. All K2 Administration servers are configured and controlled through the K2 Dashboard of the Master Administration server.

The Autonomy K2 software that underlies IBM FileNet P8 Content Search Engine has many inherent features that you might want to configure that are not discussed in the IBM FileNet documentation. For details, see the Autonomy documentation that is installed with the Autonomy K2 Master Administration Server located at:

`http://Master Administration Server hostname:9990/verity_docs/`

The Autonomy documentation set is not searchable from the IBM FileNet P8 Help but it does have its own internal index and search functionality.

CAUTION Although the K2 Dashboard provides you with documentation for, and direct interfaces to, the K2 collections, IBM FileNet requires that you use Enterprise Manager to manage collections associated with Content Search Engine index areas (for example, to add and remove index areas).

NOTES

- Autonomy K2 was previously known as Verity, and you will see Verity still used in many of the interfaces described in the following procedures.
- If your Content Engine runs on Windows, then the machines in your Content Search Engine configuration must run on Windows. If your Content Engine runs on UNIX, then the machines in your Content Search Engine configuration must run on UNIX, but it doesn't have to be the same UNIX type.
- Where machine name variables are required, IP addresses will not validate. A valid name must be entered.
- If you unimport the style set, the original files will be deleted from your system. In this scenario, if you wish to re-import the style set, you will need to recover it from your installation package. In order to avoid this situation, you can either enter a unique name for the Style Set Alias during the initial Content Search Engine (Autonomy K2) installation, or make a backup copy of the original style set. If you enter a unique name for the style set during installation, ensure you use that name when you configure Content Engine for Content-Based Retrieval.
- Stop word files can be used to increase performance by about 30%. You can put a file named `style.stp` into the `stylefiles` directory to list words you do not want full-text indexed (for example, short words such as `a`, `the`, and `and`). However, using a stop word file also prevents searching on these words. See the K2 documentation for more details. To create a stop word file you can typically copy a file named `vdk30.stp` from either the main K2 install directory or

the foreign language locales package over to the main stylefile directory, and then rename it to style.stp. You must do this copy operation before you create collections.

Indexing is case-sensitive, so the style.stp file should include capitalized versions of words in the stop word list in addition to the lower-case version. For example, use “the”, “The” and “THE” if you think all of these would be encountered on a search.

Install Content Search Engine on Windows

Install the Autonomy K2 software on each machine in your Content Search Engine configuration. You must complete a K2 Master Administration Server software installation before you can add any additional K2 Administration Server installations. The Master Administration Server's dashboard is the central control point for configuring all additional Administration Servers that are part of the Content Search Engine configuration.

You must designate each installation as either a Master Administration Server software installation or an Administration Server software installation.

CAUTION Only one K2 Master Administration Server can be installed for each Content Engine Domain.

To install Autonomy K2 on Windows

1. Access the host machine and log on as *k2_os_user*. For details on required accounts and related permissions, see [“Accounts for Content Search Engine” on page 92](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

NOTE Ensure *k2_os_user* has administrator privileges on this machine.

2. Set the JAVA_HOME environment variable as follows:
 - a. Open the System control panel.
 - b. Click the **Advanced** tab.
 - c. Click **Environment Variables**.
 - d. Click **New** under System Variables.
 - e. Set the variable information as follows:

Variable name: JAVA_HOME

Variable value: *Java (JDK) install path*

NOTE The installer will not allow you proceed with the installation until the JAVA_HOME environment variable is set.

3. Start the Content Search Engine installation, choosing either the interactive or silent steps below, For information on the Content Search Engine parameter values to specify in the installation, see “Installation and Upgrade Worksheet” in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (p8_worksheet.xls), perform the following steps to quickly see only

the installation properties you must specify for the Content Search Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "FileNet P8 Component" column header and select CSE (Windows).
- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header, and select CSE Installer.
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- To install interactively:
 - i. Access the IBM FileNet Content Search Engine installation package and execute the P8CSE-4.5.0-WIN.EXE file.
 - ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
JAVA_HOME Not Set	<p>This screen will appear only if you have not set the JAVA_HOME environment variable on the machine.</p> <p>Click Cancel to exit the installation program and set the required environment variable.</p> <p>NOTE The installer will not allow you to continue until you set the environment variable.</p> <p>Click Next to continue.</p>
JAVA_HOME for K2 Server	<p>Enter the path to the supported Java (JDK) installation and click Next to continue.</p>
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement.</p> <p>Click Next to continue.</p>
Specify Content Search Engine Installation Path	<p>Specify the directory in which you want to install Content Search Engine. The installation program will create any specified directories that do not already exist.</p> <p>Click Next to continue.</p>
Select Autonomy K2 Server Type	<p>Choose whether to install a Master Administration Server (required for first-time installation) or an Administration Server.</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify Administration Server Information	This screen will appear only if you selected Administration Server on the Select Autonomy K2 Server Type screen. Enter the host name and port for the Administration Server. Click Next to continue.
Specify Master Administration Server Information	Enter the host name and server port for the Master Administration Server. NOTE If you are installing a K2 Administration Server, the Master Administration Server must already be installed. Click Next to continue.
K2 Operating System User Account	Enter the <i>k2_os_user</i> login information and the name of the Verity domain on which this K2 server communicates with the Content Engine. Click Next to continue.
Review Pre-installation Summary	Verify your component selections, and click Install to start installing software.
Install Complete	Click Done to complete the installation.

- To install silently
 - i. Access the IBM FileNet Content Search Engine installation package and edit the `CSE_silent_install.txt` file to reflect the appropriate responses for your installation.
 - ii. Launch the Content Search Engine installer by executing the following command:

```
P8CSE-4.5.0-WIN.EXE -f CSE_silent_install.txt -i silent
```

NOTE The following two Autonomy K2 services will be installed and started on your machine after the installation is complete:

- Verity K2 6.2.1 Administration Server service.
 - Verity K2 Administration Web Server service (Tomcat server).
4. Review the following Content Search Engine log files for installation errors. The files are located in the verity directory of the install path:
 - `cse_install_path\verity\cse_install_log_4_5_0.txt`
 - `cse_install_path\verity\vconfig.log`
 5. Continue at [“Configure Content Search Engine” on page 143](#).

Install Content Search Engine on UNIX

You must install the K2 Master Administration Server software first. The Master Administration Server's dashboard is the central control point for configuring Content Search Engine for single-server or multi-server installations.

You must designate each installation as either a Master Administration Server software installation or an Administration Server software installation.

CAUTION Only one K2 Master Administration Server can be installed for each Content Engine domain.

To install Content Search Engine on UNIX

NOTE Most processes for the Autonomy K2 software will run as *k2_os_user*. However, the *vspget* process must run as root. For details on required accounts and related permissions, see "Accounts for Content Search Engine" on page 92 in *Plan and Prepare Your Environment for IBM FileNet P8*.

1. Access the host machine and log on as a user with root privileges.
2. Enter the following commands to set the *vspget* program's *setuid* bit such that the service runs as root:

```
chown root /verity install path/k2/_platform/bin/vspget
```

```
chmod u+s /verity install path/k2/_platform/bin/vspget
```

Replace *_platform* with the following directory, according to your environment:

Platform	Directory
HPUX	_hpux
AIX	_rs6k43
Solaris	_ssol26
Linux	_ilnx21

3. Log off the machine.
4. Log on to the machine as *k2_os_user*.
5. Set the following environment variable and place the entry in the *.profile* file for *k2_os_user*.

```
JAVA_HOME=java_(JDK)_install_path/jdkversion
```

```
export JAVA_HOME
```

6. Start the Content Search Engine installation using your Installation and Upgrade Worksheet. For information on the Content Search Engine parameter values, see "Installation and Upgrade Worksheet" in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (p8_worksheet.xls), perform the following steps to quickly see only the installation properties you must specify for the Content Search Engine installer:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CSE Installer.
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- To install interactively (X-Terminal must be installed):
 - i. Access the IBM FileNet Content Search Engine installation package and execute the appropriate `installation program`:

Platform	Command
HPUX	P8CSE-4.5.0-HPUX.BIN
AIX	P8CSE-4.5.0-AIX.BIN
Solaris	P8CSE-4.5.0-SOL.BIN
Linux	P8CSE-4.5.0-LINUX.BIN

- ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
JAVA_HOME Not Set	<p>This screen will appear only if you have not set the JAVA_HOME environment variable on the machine.</p> <p>Click Cancel to exit the installation program and set the required environment variable.</p> <p>NOTE The installer will not allow you to continue until you set the environment variable.</p>
JAVA_HOME for K2 Server	<p>Enter the path to the supported Java (JDK) installation and click Next to continue.</p>
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement.</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify Content Search Engine Installation Path	Specify the directory in which you want to install Content Search Engine. The installation program will create any specified directories that do not already exist. Click Next to continue.
Select Autonomy K2 Server Type	Choose whether to install a Master Administration Server (required for first-time installation) or an Administration Server. Click Next to continue.
Specify Administration Server Information	This screen will appear only if you selected Administration Server on the Select Autonomy K2 Server Type screen. Enter the host name and server port for the Administration Server. Click Next to continue.
Specify Master Administration Server Information	Enter the host name and server port for the Master Administration Server. NOTE If you are installing a K2 Administration Server, the Master Administration Server must already be installed. Click Next to continue.
K2 Operating System User Account	Enter the <i>k2_os_user</i> log in information and click Next to continue.
Review Pre-installation Summary	Verify your component selections, and click Install to start installing software.
Install Complete	Click Done to complete the installation.

- To install silently
 - i. Access the IBM FileNet Content Search Engine installation package and edit the `CSE_silent_install.txt` file to reflect the appropriate responses for your installation.
 - ii. Execute one of the following commands, based on your operating system:

Platform	Command
HPUX	<code>P8CSE-4.5.0-HPUX.BIN -f CSE_silent_install.txt -i silent</code>
AIX	<code>P8CSE-4.5.0-AIX.BIN -f CSE_silent_install.txt -i silent</code>

Platform	Command
Linux	P8CSE-4.5.0-LINUX.BIN -f CSE_silent_install.txt -i silent
Solaris	P8CSE-4.5.0-SOL.BIN -f CSE_silent_install.txt -i silent

NOTE The following two Autonomy K2 services will be installed and started on your machine after the installation is complete:

- Verity K2 6.2.1 Administration Server service.
 - Verity K2 Administration Web Server service (Tomcat server).
7. Review the following Content Search Engine log files for installation errors. The files are located in the verity directory of the install path:
 - `cse_install_path/verity/cse_install_log_4_5_0.txt`
 - `cse_install_path/verity/vconfig.log`
 8. Set the following environment variables and place the entries in the `.profile` file for `k2_os_user`.

HP-UX

```
PATH=$PATH:/verity_install_path/k2/_hpux/bin
export PATH
SHLIB_PATH=$SHLIB_PATH:/verity_install_path/k2/_hpux/bin
export SHLIB_PATH
```

AIX

```
PATH=$PATH:/verity_install_path/k2/_rs6k43/bin
export PATH
LIBPATH=$LIBPATH:/verity_install_path/k2/_rs6k43/bin
export LIBPATH
```

Solaris

```
PATH=$PATH:/verity_install_path/k2/_ssol26/bin
export PATH
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/verity_install_path/k2/_ssol26/bin
export LD_LIBRARY_PATH
```

Linux

```
PATH=$PATH:/verity_install_path/k2/_ilnx21/bin
export PATH
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/verity_install_path/k2/_ilnx21/bin
export LD_LIBRARY_PATH
```

To start or stop the Autonomy K2 Services on UNIX

To manually start or stop the Autonomy K2 services, use the following commands, according to your environment:

HP-UX

Start services:

```
nohup /verity_install_path/k2/_hpux/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_hpux/bin/k2adminstop
```

AIX

Start services:

```
nohup /verity_install_path/k2/_rs6k43/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_rs6k43/bin/k2adminstop
```

Solaris

Start services:

```
nohup /verity_install_path/k2/_ssol26/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_ssol26/bin/k2adminstop
```

Linux

Start services:

```
nohup /verity_install_path/k2/_ilnx21/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_ilnx21/bin/k2adminstop
```

Task 2: (optional) Install additional locales

Complete this procedure only if you require locales other than English.

NOTES

- The panels in the Locales installer indicate that the installer is only compatible with Autonomy K2 version 6.2.0. However, the Locales installer is compatible with version 6.2.1, the version you installed with IBM FileNet Content Search Engine 4.5.
- On one of the installer panels, you will be asked to select your installed version of Autonomy K2 from a dropdown menu. Select K2 6.2.0 as the valid entry.

CAUTION Although the Locales installer offers the option of installing to a location other than the Verity install location, do not choose this option. For Content Search Engine, you must install the locales to the k2 directory of the Autonomy K2 installation path.

Windows

1. Access the Autonomy K2 Master Administration Server machine and log on as *k2_os_user*.
2. Copy the P8CSE450WIN.zip file from the installation package to the machine and extract the contents to a local directory.
3. Stop the Autonomy K2 services.
 - a. Access Component Services.
 - b. Stop the Verity K2 Administration Server service and the Verity K2 Administration Web Server service.
4. Create a directory in the following specific location (default drive shown):

```
C:\Program Files\Common
Files\InstallShield\Universal\WinVersion\x86\host_name\Gen1\_vpddb
```

- a. Replace *WinVersion* with one of the following valid options:
 - Windows XP
 - Windows 2000
 - Windows Server 2003
 - Windows Vista (this option also includes Windows 2008)
- b. Replace *host_name* with the name of the Master Administration Server machine.

For example:

```
C:\Program Files\Common Files\InstallShield\Universal\Windows
2003\x86\myMachine\Gen1\_vpddb
```

5. Locate the vpd.script file in the K2 install directory and open it in a text editor. Make the following modifications in the file:
 - Replace the instance of `<K2InstallDir>` with the K2 install directory. For example:


```
C:\Program Files\FileNet\ContentEngine\verity
```
 - Replace the instance of `<myHostName>` with the Master Administration Server machine name.
 - Replace the instance of `<WinVersion>` with the same option you chose in step 4 above.
6. Copy the vpd.script file to the directory location you created in step 4 above.
7. Navigate to the decompressed Locales installer location and execute the setupwin32.exe file. The installer will locate the K2 installation and start, based on the settings you completed above.

NOTE The following license key is required:

```
2UV4MPT-2KPEQBJ-1D6A6KT-2KPE6KT-2KPE6KS
```

8. Start the Verity K2 services after the installation is complete.

UNIX

1. Access the Autonomy K2 Master Administration Server machine and log on as `k2_os_user`.
2. Copy the appropriate compressed file for your platform from the installation package to the machine and extract the contents to a local directory. For example:

```
P8CSE450AIX.tar.gz
```

3. Stop the Autonomy K2 services.
 - a. Access `opt/verity/appserver/bin`
 - b. Use the following command, according to your environment:

HP-UX

```
/verity_install_directory/k2/_hpux/bin/k2adminstop
```

AIX

```
/verity_install_directory/k2/_rs6k43/bin/k2adminstop
```

Solaris

```
/verity_install_directory/k2/_ssol26/bin/k2adminstop
```

Linux

```
/verity_install_directory/k2/_ilnx21/bin/k2adminstop
```

4. Prepare your system with the following environment variable:

```
VERITY_CFG=/opt/verity/k2/common/verity.cfg
export VERITY_CFG
```

5. Navigate to the decompressed Locales installer location and execute the `setupUNIX_type.bin`.
For example:

`setupaix.bin`

NOTE The following license key is required:

`2UV4MPT-2KPEQBJ-1D6A6KT-2KPE6KT-2KPE6KS`

6. Start the Verity K2 services after the installation is complete.

Task 3: Create a Content Search Engine collections directory

Use this procedure to configure the storage location and related security for your K2 collections.

Collections directory requirements

CAUTION Contrary to information outlined in the Autonomy-supplied documentation set, remote collections are not supported for use with IBM FileNet Content Search Engine. Collections must be written locally to the Autonomy K2 server. Using a remote-mounted disk that is accessed via the network (NFS, PCNFS, or CIFS) will cause stability problems under load and corrupt your collections. Any existing configurations that contain non-local collections directories must be re-configured.

To create a collections directory

For performance reasons, create one collections directory for each index area you create in IBM FileNet P8 Content Engine. Each collections directory you create must be set to provide proper security access as outlined below. The path to both the collections directory and collections temp directory must be entered in the index area properties when you create the index area.

Security and communication between Autonomy K2, Content Engine, and the collections directory is handled through the user accounts and permissions provided to those accounts. For details on required accounts and related permissions, see [“Accounts for Content Search Engine” on page 92](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

For detailed information on security, see the IBM FileNet P8 help topic [System Administration > Enterprise-wide Administration > FileNet P8 Security > Authorization > Security for integrated components and third-party products > Autonomy K2 Server > Security for Autonomy K2 Server](#).

1. Create a directory on the Autonomy K2 machine in which you will store collections. Set permissions to allow read, write and execute permissions to *k2_os_user*.

NOTE This path must be local to the index server that will be assigned to write collections.

2. Create a temp directory on the Autonomy K2 machine on which you created the collections directory. The temp directory will be used by the K2 Index Server and Content Engine Server during operations.

NOTE This path must be visible to both the Content Engine and the Content Search Engine servers. If the K2 Master Administration Server and Content Engine are not installed on the same machine, they both must be on a network-mounted file system.

3. Record the collections directory path in the Autonomy K2 configuration file.

Windows

- a. Open the following K2 configuration file in a text editor (default path shown):

```
C:\Program Files\filenet\contentengine\verity\k2\common\verity.cfg
```

- b. Modify the next available alias settings by adding the collections path, where new collections will be written. For example, change alias6, mapping6, and dirmode6 to the following:

```
alias6=path1
mapping6=C:\Collections_Directory
dirmode6=wr
```

UNIX

- a. Open the following K2 configuration file in a text editor (default path shown):

```
/opt/verity/k2/common/verity.cfg
```

- b. Modify the next available alias settings by adding the collections path. For example, change alias6, mapping6, and dirmode6 to the following:

```
alias6=path1
mapping6=/Collections_Directory_Path
dirmode6=wr
```

NOTE The *Collections_Directory_Path* must be a local path and not a mount point.

4. Set file storage area access. Each file storage area that will be full text indexed must be accessible by the Autonomy K2 server that will perform the full-text indexing. Permissions on the file store must be set the same as the permissions on the collections directories, allowing both the Content Engine Operating System User and the K2 Operating System User to access them. The names of the file store directories must also be the same on each server that accesses those directories.

If Content Engine and Autonomy K2 are installed on separate machines, then the file store must be accessible to both the Content Engine and the Autonomy K2 servers. For Windows, the file store path must be a UNC path name accessible to the Autonomy K2 machine. For UNIX, the file store must be NFS-mounted on the Autonomy K2 machine with the same name as it appears on all other machines.

Windows-specific options

You can configure a read-only Autonomy K2 Administration server which will remotely read collections (note that you cannot have a second K2 Administration server that writes the collections). To do this, you must map a drive on the read-only Administration server to the file system on the Autonomy K2 machine that writes collections.

To do this, share the Autonomy K2 machine's collections drive (for example, D:\) as some name other than D\$, because you can't set permissions on D\$. For example, set it as DDrive.

Map the D:\ drive on the read-only Autonomy K2 machine to \\servername\DDrive.

Now D:\collections on the read-only Autonomy K2 machine references the same file system as the D:\ drive on the Autonomy K2 machine that writes the collections.

By default, the k2admin.exe program on the read-only Autonomy K2 machine runs as a Windows service. This is a problem because Windows services can not mount mapped drives.

One solution to this problem is to run the `k2admin.exe` program from a command line instead, so that it doesn't run as a Windows service. To launch the service manually from a command line on a default installation, execute the following command:

```
C:\Program Files\verity\k2_61\k2\_nti40\bin\k2admin.exe" -cfg "C:\Program Files\verity\k2_61\k2\common\verity.cfg
```

NOTE Only the Verity K2 6.1.1 Administration Server service (`k2admin.exe`) must be started this way. The Verity Administration Web Server may be left as a Windows service.

Another solution is to use a tool like the `svrany.exe` program (supplied as part of the Windows Resource kit) to run a `.cmd` file that first maps the drives, and then issues the command above to start the `k2admin.exe` service. The command to map drives, using the above example, is:

```
net use D: \\servername\DDrive
```

There are also third-party products available that function the same as the `svrany.exe` program.

Although the `svrany.exe` program will start the service correctly, it cannot stop the service. You must use the Autonomy `rcadmin` command line tool to stop the service, or use TaskManager and stop all the processes that start with the prefix `k2`.

To use the Autonomy rcadmin program from a command line:

1. Access a command line and type the following command:

```
rcadmin
```

2. Enter the following command to log on:

```
login k2_os_user
```

3. Enter the following command to initiate the shutdown:

```
adminsignal
```

4. Enter one of the following responses to the Type of Signal query:

- 2 - Shutdown
 - 3 - WS Refresh
 - 4 - Restart all servers
-

Task 4: Configure Content Engine for content-based retrieval

This task covers use of Enterprise Manager to configure an index area and enable the content-based retrieval (CBR) feature provided by the IBM FileNet P8 Content Search Engine.

For more detail on content-based retrieval and Content Engine, see the IBM FileNet P8 help topic [Configure CBR](#) found at [FileNet P8 Administration > Content Engine Administration > content-based retrieval > How to... > Configure CBR](#).

NOTES

- Before you complete the procedures in this topic, ensure the IBM FileNet P8 Content Search Engine has been installed and configured on at least one server (In effect, this means you have already installed and configured an Autonomy K2 Master Administration Server).
- Numerous K2 security accounts are referenced within this procedure. For details on required accounts and related permissions, see the *Specify IBM FileNet P8 Accounts* topic.
- Various server names and related ports assigned during the installation and configuration of Autonomy K2 will be required during this procedure. If you do not have a record of the servers created and the ports that have been assigned, log on to the Autonomy K2 dashboard to obtain the information necessary.
- If you unimport the style set, the original files will be deleted from your system. In this scenario, if you wish to re-import the style set, you will need to recover it from your installation disk. In order to avoid this situation, you can either enter a unique name for the Style Set Alias during the initial Content Search Engine (Autonomy K2) installation, or make a backup copy of the original style set. If you entered a unique name for the style set during installation, ensure you use that Style Set Alias name for this procedure.
- Where machine name variables are required, IP addresses will not validate. In these cases, you must enter the host name for the machine.

To configure Content Engine for content-based retrieval

1. Launch Enterprise Manager and log on as the GCD Administrator.
2. Create a Verity Domain Configuration (VDC).
 - a. Right-click **Enterprise Manager [domain]** in the Enterprise Manager tree and select Properties.
 - b. Click the **Verity Domain Config.** tab.

- c. Enter the following K2 Master Administration Server access information:
 - Host Name - the name of the host of the K2 Master Administration Server.
 - Port - the K2 Master Administration Server port.
 - User Domain - the authentication domain in which your K2 services are installed.
 - User Group - K2 Security Group.
 - Verity Username - K2 Security User.
 - Password - the K2 Security User password.
 - d. Click Create Configuration to create a Verity Domain Configuration object.
3. Assign a K2 Broker Server:
 - a. Click the **Verity Server** tab.
 - b. From the Brokers AVAILABLE pane, select the broker and click **Add** to move the server to the Brokers Selected pane.
 - c. Click **OK**.

NOTE You can assign multiple Broker Servers to a K2 Administration Server, primarily for failover. If one Broker Server goes down, then K2 can switch to another. In this configuration, you must ensure that all Search Servers required to access K2 Collections (index areas) are attached to each Broker Server. Be aware that a given Content Engine server will neither call multiple Broker Servers nor merge associated search results. See the appropriate steps of the *Configure Content Search Engine* task for instructions on how to create Broker Servers and assign Search Servers.

4. Enter a CBR Locale. Choose one of the following locales which are installed by default with the Autonomy K2 Content Search Engine software:
 - uni (multi-language and slower indexing)
 - englishv (enhanced word-stemming and faster indexing)
 - english (limited capabilities and very fast indexing)

If you click the **Set to Default** button, *uni* will be set as the CBR Locale.

CAUTION To ensure you understand how the K2 product uses locales and how your choice affects performance and indexing options, review the *Verity Locale Configuration Guide* which is part of the Autonomy-supplied documentation set. To access the *Verity Locale Configuration Guide*:

- i. Open the Autonomy K2 Dashboard and click **Help**.
 - ii. Click **Library** (top right of the screen) to access the Autonomy K2 product guides. Each guide is available in HTML or PDF format.
- a. Right-click the Object Store for which you want to enable indexing and select **Properties**.
 - b. Click the **Locale** tab.
 - c. Enter a valid Autonomy K2 locale for CBR.

5. Create an index area. Launch the Create an Index Area wizard:
 - a. In the tree view, expand the **Object Stores** container.
 - b. Right-click the object store to which you want add an index area and select **New > Index Area**.
 - c. Complete the Create an Index Area wizard using the following table:

In this screen...	Perform this action...
Welcome	Click Next to proceed with the index area creation. NOTE Click Back at any time to make changes in previous screens. Click Cancel to exit the wizard.
Select Index Area Site	From the list of available sites, select the site to which the index area you are creating will be associated Click Next to continue.
Name and Describe the Index Area	Enter a name and description for the new index area. Click Next to continue.
Enter Index Area Verity Directories	Enter the following Content Search Engine information: <ul style="list-style-type: none"> • For Template Type, enter the following: FileNet_FileSystem_PushAPI • Verity collections directory path, stated as local to the CSE machine on which it resides. For example: Windows C:\collections UNIX opt/collections • Verity temp directory path, stated as local to the CSE machine on which it resides. For example: Windows C:\tempdir UNIX opt/tempdir Click Next to continue.
Select Verity Search Servers	From the list of available search servers, select at least one server to be used for this index area. Click Next to continue.

In this screen...	Perform this action...
Select Verity Index Servers	From the list of available index servers, select at least one server to be used for this index area. Click Next to continue.
Completion Screen	Review the entries you have selected for this index area and click Finish to complete the wizard and create the index area with the options you specified.

For more information on creating indexes, see the IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > content-based retrieval > How to... > Create Verity index area](#).

6. Enable CBR for class definitions by activating the CBR Enable flag of the class you want available for CBR, as follows:
 - a. Right-click the class you want to configure in the Enterprise Manager tree and click **Properties**.
 - b. Select **CBR Enabled** and click **OK**.
7. Enable CBR for the class properties you want available for CBR, as follows:
 - a. Right-click the class you want to configure and click **Properties**.
 - b. Click the **Property Definitions** tab.
 - c. Click the string property you want to enable for CBR indexing and click **Edit**.
 - d. Check **CBR Enabled** and click **OK**.

To enable additional K2 Index Servers and Search Servers

If you add additional K2 Index Servers or Search Servers to an existing configuration, you must enable them through Enterprise Manager to utilize them.

1. Log on to Enterprise Manager as the GCD Administrator and expand the Enterprise Manager tree.
2. Open the Index Area folder.
3. Right-click the index area that you want to add the new services to and select **Properties**.
4. Enable the new Search Servers as follows:
 - a. Click **Edit Search Servers**.
 - b. In the Search Servers Available pane, highlight any servers you want to enable for this index area and click **Add** to add the server to the Search Servers Selected list.
 - c. Click **OK** to save the settings and enable the new servers.

5. Enable the new Index Servers as follows:
 - a. Click **Edit Index Servers**.
 - b. In the Index Servers Available pane, Highlight any servers you want to enable for this index area and click **Add** to add the server to the Index Servers Selected list.
 - c. Click **OK** to save the settings and enable the new servers.

Task 5: Verify the Content Search Engine installation

To verify that the Content Search Engine installation and configuration succeeded, perform the following procedure.

To verify the Content Search Engine installation

1. In Enterprise Manager, access the Root Folder and open a subfolder that contains a (nonempty) text document.
2. Right-click a document and select **All Tasks > Index for Content Search**.
A Notice should indicate that a content search index Job was created successfully.
3. Right-click the object store node for the document you set to index for content search and select **All Tasks > Index Jobs Management**.
4. In the Index Jobs Manager, check to see that the Job Status indicates the job has terminated normally. If the Job Status indicates an abnormal termination, check the `p8_server_trace.log` in application server directory in the FileNet directory.

NOTE Depending on the size of the job, it may take a few minutes for the indexing job to complete. If the Job Status indicates that the indexing is in progress, wait a few minutes to give the job time to complete.

Install and configure Process Engine

This section contains the following major topics:

- [“Install Process Engine” on page 172](#)
- [“Install Process Engine software updates” on page 196](#)
- [“Install the latest Content Engine Client files on Process Engine servers” on page 197](#)
- [“Configure Process Task Manager” on page 201](#)
- [“Complete post-installation Process Engine configuration \(Windows only\)” on page 203](#)

Task 1: Install Process Engine

Use a procedure in this topic to install Process Engine software either interactively or silently. A number of configuration steps follow the execution of the Process Engine installation program.

You will find references to logging on as the root and fnsw users within the following procedures. For all UNIX operating systems, the root user must run in the Bourne or Korn shell and the fnsw user must run in the Korn shell.

CAUTION Before starting the Process Engine installation, verify that you have completed the steps in the *To configure the /etc/hosts file* section in the *Plan and Prepare Your Environment for IBM FileNet P8* guide.

To verify the database connection

Use the procedures in this topic to verify the ability to connect to the database. Execute these steps on the database server or the client according to whether the database is local to or remote from Process Engine.

To verify the Process Engine database connection (Oracle)

Take the following steps to verify that the Oracle database instance used by Process Engine is accessible. How you log on to sqlplus will vary, depending upon how you will choose to execute the SQL scripts. This procedure will verify that you can connect to the Oracle database in the same way the Process Engine installation program will. Make whatever corrections are necessary before proceeding.

1. Execute the following at a command prompt:

```
su - oracle -c "sqlplus"
```

2. Enter one of the following commands at the SQLPlus prompt, as follows:

- If the Process Engine pre-installation SQL scripts will be run from the Process Engine installation program by prompting for the sys password, type the following command:

```
sys/password as sysdba
```

- If the SQL scripts will be run from the Process Engine installation program by using operating system authentication, type the following command:

```
/ as sysdba
```

3. At the prompt, enter the following SQL command:

```
SQL> select instance_name, host_name, version from v$instance;
```

The following represents an example of the information returned:

```
INSTANCE_NAME
-----
HOST_NAME
-----
```

VERSION

```
-----
p8dbshr
HQVWBUCS
10.2.0.2.0
```

where:

p8dbshr is the instance ORACLE_SID.

hqvwbuks is the database server name.

10.2.0.2 is the Oracle server version.

To verify the Process Engine database connection (DB2)

Verify the connection to the DB2 Process Engine database by executing the following commands to start a command line processor.

1. Start the command line processor, as follows:

Windows

At a command prompt, start the DB2 Command Line Processor by typing the following command:

```
db2cmd
```

and, at the subsequently displayed prompt, enter the following command:

```
db2
```

UNIX

Log on as the client instance owner and execute the following at a command prompt:

```
db2
```

2. At the DB2 prompt, enter the following command indicating either the database alias or the instance name:

```
connect to database_alias or instance_name user f_sw using f_sw password
```

where:

database_alias is the Process Engine DB2 for Linux, UNIX and Windows database alias for remote databases. For local databases, use the database name.

instance_name is the Process Engine DB2 for z/OS database name

f_sw is the Process Engine runtime user, either the default *f_sw* user or the assigned alias

f_sw password is the runtime user's password.

DB2 will display the database connection information.

The following example shows the database connection command and the information returned:

```
db2 => connect to pedbinst user f_sw using fswpassword
```

Database Connection Information

```
Database server      = DB2/AIX64 9.1.0
SQL authorization ID = F_SW
Local database alias = PEDBINST
```

In this example, the database alias is pedbinst, the user is f_sw, and the f_sw user password is fswpassword.

To verify the Process Engine database connection (SQL Server)

Take the following steps to verify that the SQL Server database instance used by Process Engine is accessible. You will need to know both the Process Engine database and filegroup names. Make whatever corrections are necessary before proceeding.

In this example, the database is VWdb and the filegroup name is vwdata_fg. Both the database name and filegroup name must match what was defined when the database MS SQL server was installed and configured.

1. Log on as a member of the local Administrators group or a user with equivalent permissions. The user you log on as must also be a database administrator. If the database is remote, the SQL connection must also be a trusted connection.

2. At a command prompt, enter:

```
osql -E -D DSN
```

where *DSN* is the ODBC data source name

This command puts Process Engine into osql interactive mode.

3. At the osql prompt, enter:

```
1> use VWdb
2> go
```

where *VWdb* is the Process Engine database name

This command verifies that the Process Engine database has been created. If you get another prompt with no error, you are attached to that database.

4. Verify that the correct Process Engine filegroup was created. At the osql prompt, enter:

```
1> select substring(groupname,1,20) from sysfilegroups where groupname = 'defined filegroup'
2> go
```

where *defined filegroup* is the default filegroup

A listing of the Process Engine filegroups will display, for example:

```
_____
vwdata_fg
```

To install the Process Engine software interactively

1. Log on to the server as follows:

UNIX

Log on to the server as the root user. If you plan to run the SQL scripts from the Process Engine installation program, the user you log on as must also be a database administrator.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions, or as a Windows domain user as defined in *Specify IBM FileNet P8 accounts* in the *Plan and Prepare Your Environment for IBM FileNet P8* guide.. If you plan to run the SQL scripts from the Process Engine installation program, the user you log on as must also be a database administrator.

2. Access the Process Engine software package.
3. From the console, launch the appropriate `P8PE-4.5.0-platform.bin` or `.exe` installation program.

NOTE (Windows) To run the Process Engine installation from disk, you must copy the installation files to a disk volume where 8.3 name generation is enabled, or if 8.3 name generation is disabled, you must copy the installation to a path that uses only short (8.3) names.

When running from disk, either interactively or silently, be aware that the Process Engine installation program has a 64-character path limitation when the path is expressed in 8.3 format. This limitation applies to the `IMSInst` subdirectory. For example, the original path is:

```
\\server08\Software\InstallationDisks\FileNet\Release P8
4.5.0\ProcessEngine\Windows\IMSInst
```

When expressed in 8.3 format the path might be:

```
\\server08\Software\INSTAL~1\FileNet\RELEAS~1.0\PROCES~1\Windows\IMSInst
```

This compressed path is 73 characters long, exceeding the 64-character limit.

4. (UNIX) Wait for files to finish unpacking.
5. Complete the Process Engine installation screens using the appropriate information from your configuration worksheet.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Process Engine installer:

- a. Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select PE installer.
- b. Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."

6. Complete the Process Engine Setup screens, as follows:

In this screen...	Perform this action...
Welcome to Process Engine Setup	Click Next on the Welcome screen to proceed with the installation.
License Agreement	Review and accept the license agreement.
Specify the Documentation URL	<p>Enter the Documentation URL, which is where the IBM FileNet P8 Platform Documentation is installed. Your entry must be in the following format:</p> <p><code>http://docserver:port#/ecm_help</code></p> <p>where:</p> <p><i>docserver</i> is the name of the Java web server. <i>port#</i> is the port number. <i>ecm_help</i> is the root folder of the documentation web site. You can use multi-part root folders. (for example, /docs/ecm_help) if your application server supports them.</p>
Specify Installation Location for Common Files	Choose the destination directory for configuration files that will be shared with other IBM FileNet P8 components. Accept the default location or click Browse to change the location.
Specify Installation Location for Program Files (Windows only)	<p>Indicate the installation location for the executable files. This is the drive where the \FNSW directory will be created. Select a local drive in a cluster configuration.</p>
Specify Installation Location for Data Files (Windows only)	Indicate the installation location for the configuration and data files. This is the drive where the \FNSW_LOC directory will be created. Select a shared drive in a cluster configuration.
Specify Network Clearinghouse Domain Name	<p>Enter <i>domain name:organization</i>, where:</p> <ul style="list-style-type: none"> • The maximum length of your <i>domain name</i> entry does not exceed 19 characters. • The maximum length of your <i>organization</i> entry does not exceed 19 characters. • Both your <i>domain name</i> and <i>organization</i> entries contain only alphanumeric characters and underscores. <p>A typical convention is to enter <i>your PE machine name:your company name</i>. If the machine name or company name include hyphens, replace them with underscores in your entry.</p>

In this screen...	Perform this action...
Configure the Hosts file	This is a reminder screen to verify that you have configured the hosts file or DNS table before proceeding. Do not continue with the installation unless you have completed that configuration. See <i>To configure the /etc/hosts file</i> section in the <i>Plan and Prepare Your Environment for IBM FileNet P8</i> guide for details.
Specify the Database Location	Indicate whether the database will be local or remote.
Specify the Database Type	Indicate whether the database will be: <ul style="list-style-type: none"> • Oracle • SQL Server • DB2

7. Depending on the type and location of the database you selected above, continue at one of the following procedures:
- [“To complete local or remote SQL Server database screens \(Windows only\)” on page 178](#)
 - [“To complete remote Oracle database screens” on page 179](#)
 - [“To complete local Oracle database screens” on page 181.](#)
 - [“To complete remote DB2 database screens” on page 184](#)
 - [“To complete local DB2 database screens” on page 185](#)

To complete local or remote SQL Server database screens (Windows only)

Complete the Process Engine Setup screens that are specific to local or remote SQL Server databases, as follows:

In this screen...	Perform this action...
Specify Execution Mode for SQL Server Scripts	<p>The SQL Server pre-install scripts must be run by Setup or manually. These scripts create database users and passwords for FileNet P8 and create stored procedures. Please select one of the options listed below. If you select the prompted password option, the next screen will ask you for the SQL Server sa password. If you select the silent option, your SQL Server database must allow operating system authentication.</p> <p>Select from the following options:</p> <ul style="list-style-type: none"> • I have already run the pre-install scripts manually. • I want to run the scripts with a prompted password. • I want to run the scripts silently using OS authentication. <p>Validation of the SQL Server connection will also occur if you choose to run the scripts now, either with a prompted password or using operating system authentication. No validation of the database connection will be done if you indicate that you have already run the SQL scripts manually.</p> <p>NOTE If the scripts set the default passwords, leave the password fields blank at the prompts on the Specify Passwords screen that follows.</p>
Specify the SQL Server System Administrator Password	Enter the SQL Server sa password.
<p>NOTE This screen only appears if you indicated that you want to run the SQL scripts with a prompted password.</p>	

In this screen...	Perform this action...
Specify SQL Server Configuration Parameters	<p>Enter the following information:</p> <ul style="list-style-type: none"> • ODBC data source name • Database name • Filegroup name <p>NOTE You might notice a slight delay before the next Setup screen displays if you chose to run the SQL Scripts from the setup program. Validation of the database connection will be done after clicking Next on this screen. If validation is successful you will see the next screen. If validation fails, an error will be returned and you must resolve the problem before proceeding. No validation of the database connection will be done if you indicate that you have already run the SQL scripts manually.</p>
Specify SQL Server Version	Indicate whether you will be using SQL Server 2000 or SQL Server 2005 for the Process Engine database.

To complete remote Oracle database screens

Complete the Process Engine Setup screens that are specific to remote Oracle databases, as follows:

In this screen...	Perform this action...
Specify Execution Mode for Oracle Scripts (Windows only)	<p>The Oracle pre-install SQL scripts must be run by setup or manually. These scripts create database users and passwords for FileNet P8 and create stored procedures. Please select one of the options listed below. If you select the prompted password option, the next screen will ask you for the Oracle Sys password. If you want to run the scripts silently, your Oracle database server must allow operating system authentication.</p> <p>Select from the following options:</p> <ul style="list-style-type: none"> • I have already run the pre-install scripts manually. • I want to run the scripts with a prompted password. • I want to run the scripts silently using OS authentication. <p>NOTE If the scripts set the default passwords, leave the password fields blank at the prompts on the Specify Passwords screen that follows.</p>

In this screen...	Perform this action...
Specify the Oracle SYS Password (Windows only) NOTE This screen appears only if you indicated that you want to run the scripts with a prompted password.	Enter the Oracle SYS password.
Specify Oracle Configuration Parameters	Enter the appropriate values for the following Oracle parameters. <ul style="list-style-type: none"> • The Oracle Home path you enter refers to the local Oracle installation directory. • The Oracle User Name (UNIX only) • The Oracle DBA OS group name (UNIX only)
Specify Remote Oracle Configuration Parameters	Enter the following Oracle database configuration parameters. <ul style="list-style-type: none"> • Global Database Name (as identified in the <code>tnsnames.ora</code> file) • Temporary Tablespace Name Default value is <code>VWTEMP_TS</code> • Data Tablespace Name Default value is <code>VWDATA_TS</code> • Index Tablespace Name Default value is <code>VWINDEX_TS</code> Enter the optional tablespace to be used by Process Engine for indexes. The data tablespace will be used if no index tablespace is designated. CAUTION No whitespace characters are allowed in the Index tablespace name field. If you created more than one data and optional index tablespace indicate the default tablespace names.
Specify Oracle Version	Oracle version 9i, 10g, and 11g are supported. Indicate which version of Oracle software to use on the database server for Process Engine. NOTE The Oracle versions must be the same on the client and server.

In this screen...	Perform this action...
Specify Execution Mode for Oracle Scripts (UNIX only)	<p>A series of SQL scripts must be executed. You could have already run the scripts manually before starting Process Engine Setup. If you did not run them manually, you need to indicate how you want to run them now. You can run them as the Oracle SYS user or as another user who can be authenticated through the operating system.</p> <ul style="list-style-type: none"> • I have already run the pre-install scripts manually. • I want to run the scripts in an xterm window. • I want to run the scripts silently using operating system authentication. <p>NOTE If the scripts set the default passwords, leave the password fields blank at the prompts on the Specify Passwords screen that follows.</p>

To complete local Oracle database screens

Complete the Process Engine Setup screens that are specific to local Oracle databases, as follows:

In this screen...	Perform this action...
Specify Execution Mode for Oracle Scripts (Windows only)	<p>The Oracle pre-install SQL scripts must be run by setup or manually. These scripts create database users and passwords for FileNet P8 and create stored procedures. Please select one of the options listed below. If you select the prompted password option, the next screen will ask you for the Oracle Sys password. If you want to run the scripts silently, your Oracle database server must allow operating system authentication.</p> <p>Select from the following options:</p> <ul style="list-style-type: none"> • I have already run the pre-install scripts manually. • I want to run the scripts with a prompted password. • I want to run the scripts silently using OS authentication. <p>NOTE If the scripts set the default passwords, leave the password fields blank at the prompts on the Specify Passwords screen that follows.</p>

In this screen...	Perform this action...
Specify the Oracle SYS Password (Windows only) NOTE This screen only appears if you indicated that you want to run the SQL scripts with a prompted password.	Enter the Oracle SYS password.
Specify Oracle Configuration Parameters	Enter the appropriate values for the following Oracle parameters. <ul style="list-style-type: none"> • The Oracle Home path you enter refers to the local Oracle installation directory. • The Oracle User Name (UNIX only) • The Oracle DBA OS group name (UNIX only)
Specify Local Oracle Configuration Parameters	Enter the following Oracle database configuration parameters. <ul style="list-style-type: none"> • Oracle SID • Temporary Tablespace Name Default value is VWTEMP_TS • Data Tablespace Name Default value is VWDATA_TS • Index Tablespace Name Default value is VWINDEX_TS Enter the optional tablespace to be used by Process Engine for indexes. The data tablespace will be used if no index tablespace is designated. CAUTION No whitespace characters are allowed in the Index tablespace name field. If you created more than one data and optional index tablespace indicate the default tablespace names.
Specify Oracle Version	Oracle versions 9i, 10g and 11g are supported. Indicate which version of Oracle software to use on the database server for Process Engine. NOTE The Oracle versions must be the same on the client and server.

In this screen...	Perform this action...
Specify Execution Mode for Oracle Scripts (UNIX only)	<p>A series of SQL scripts need to be executed. You could have already run the scripts manually before starting Process Engine Setup. If you did not run them manually, you need to indicate how you want to run them now. You can run them as the Oracle SYS user or as another user who can be authenticated through the operating system.</p> <ul style="list-style-type: none"> • I have already run the pre-install scripts manually. • I want to run the scripts in an xterm window. • I want to run the scripts silently using operating system operating system authentication. <p>NOTE If the scripts set the default passwords, leave the password fields blank at the prompts on the Specify Passwords screen that follows.</p>

To complete remote DB2 database screens

In this screen...	Perform this action...
Specify DB2 Platform	Both remote z/OS and DB2 for Linux, UNIX and Windows databases are supported. Indicate whether the remote DB2 database resides on a z/OS server or not. If it is not z/OS it configured as DB2 for Linux, UNIX, and Windows.
Specify DB2 Configuration Parameters NOTE This screen only appears if the database platform is DB2 for Linux, UNIX and Windows.	Enter the following DB2 database parameters for the Process Engine database and tablespace. All fields must have values. <ul style="list-style-type: none"> • Database Alias Name Default value is VWdb • Data Tablespace Name Default value is VWDATA_TS • Index Tablespace Name Default value is VWINDEX_TS • Blob Tablespace Name Default value is VWBLOB_TS
Specify DB2 Configuration Parameters NOTE This screen only appears if you indicated the remote database is on z/OS.	Enter the following DB2 database parameters for the Process Engine database. All fields must have values. <ul style="list-style-type: none"> • Database Name Default value is PEDBASE • Instance Alias Name Default value is PEInstance. This is the instance created on the Process Engine client, used to connect to the remote database. • Local DB2 Instance Owner Name (UNIX only) Default value is fnsw. This is the DB2 client instance created on the Process Engine server.
Specify DB2 Version NOTE This prompt only appears only of the database is on DB2 for Linux, UNIX and Windows.	Select either version 8 or 9.

To complete local DB2 database screens

In this screen...	Perform this action...
Specify DB2 Configuration Parameters	<p>Enter the following DB2 parameters for the Process Engine database and tablespace. All fields must have values.</p> <ul style="list-style-type: none"> Database Alias Name Default value is VWdb Local DB2 Instance Owner Name (UNIX only) Default value is fnsw Data Tablespace Name Default value is VWDATA_TS Index Tablespace Name Default value is VWINDEX_TS Blob Tablespace Name Default value is VWBLOB_TS
Specify DB2 Version	Select either version 8 or 9.

To complete final Process Engine Setup screens

Complete the screens to finalize the Process Engine installation, as follows:

In this screen...	Perform this action...
Determine Administrative User and Group Aliasing Method	<p>Determine whether FileNet default operating system and database users and groups will be used, or if you want to define aliases for these users and groups.</p> <ul style="list-style-type: none"> Yes, configure aliases No, use actual account names for aliases

In this screen...	Perform this action...
<p>Specify Administrative User and Group Aliases</p> <p>NOTE This screen is only presented if you chose to configure aliases.</p>	<p>Indicate the alias you want to create for each of the following users and groups.</p> <ul style="list-style-type: none"> • FNADMIN OS group • FNUSR OS group • FNOP OS group • FNSW OS user • f_sw DB user • f_maint DB user <p>NOTES For Oracle and SQL Server databases, these are database users. For DB2, these are operating system users.</p> <p>If you ran SQL scripts for SQL Server or Oracle manually before starting Process Engine Setup, the aliases here for f_sw and f_maint must match the users specified as runtime and maintenance users.</p> <p>(Windows only) If you are logged on as a domain user for this installation the fnadmin, fnop and fnuser groups and the fnsw user, or aliases for them have already been defined on this server. Assign the same alias here as was defined earlier.</p> <p>The f_sw and f_maint users should be dedicated users for IBM FileNet use.</p> <p>(Windows only) The default password for the fnsw user (or its alias) will be set and must not be changed until Process Engine installation is complete. “To reset administrative user passwords” on page 189 for information on changing the fnsw password and associated changes to Windows services.</p>
<p>SQL Script Passwords</p> <p>NOTE This screen appears only if you selected an option to have setup run the SQL scripts.</p>	<p>You have selected an option to have setup run the pre-install SQL scripts. Setup needs to know if you have changed the default passwords that are specified in these script files.</p> <p>Select from the following options:</p> <ul style="list-style-type: none"> • I have not changed the default FileNet passwords specified in the SQL scripts • I have changed the default FileNet passwords specified in the SQL scripts <p>If you have changed the default passwords in the SQL scripts you will be prompted to enter those passwords on a later screen.</p>

In this screen...	Perform this action...
Specify Passwords NOTE This screen appears after Specify Administrative User and Group Aliases if you choose to define aliases.	Specify the passwords for the f_sw and f_maint users (or their aliases). For DB2 these are operating system users and the values here must match the passwords already assigned to these users. For Oracle and SQL Server these are database users. The passwords entered here must match the passwords created when the Oracle or SQL scripts were executed. If default passwords were created when the scripts ran for Oracle or SQL Server databases, leave these fields blank.
Specify Device File Names (HP-UX and Solaris only)	Enter the full pathname for the device files for the fn_SEC_DB0 and fn_SEC_RL0 volumes.
Please Read the Summary Information Below	Verify your selections, and click Install to install Process Engine.
xterm Window (UNIX only) NOTE This window displays if you chose to run the SQL scripts in an xterm window.	Enter the SYS password for Oracle.
Completing the Setup wizard	Windows Click Finish to complete the Process Engine installation. UNIX Click Finish to complete the Process Engine installation and then as prompted, log off and log back in as fnsw or the alias you defined

- (Windows) Setup will run a number of steps but to complete the installation the computer must be restarted. When prompted, select **Yes, restart my computer** and click **Finish**.
- (Windows) When the system restarts, log on using the same account you used in [Step 1 on page 175](#). After you log on, Process Engine Setup will continue. Click **Next** to continue the installation.

If installation fails at this point, correct the errors that caused the failure and run the post-boot setup program by navigating to the Process Engine\IMSInst install folder and executing:

```
setup.exe -postboot
```

NOTE Not all error conditions can be resolved in this way. It might be necessary to uninstall the Process Engine software and re-run Setup.

10. (Windows) When the dialog box informs you that Process Engine has been successfully installed, click **Finish**.
11. (UNIX) Monitor `/fnsw/local/logs/wizard` to check the progress of the installation since the installation program will run for several minutes, and its progress, though displayed, might not visibly advance for an extended period of time.
12. (UNIX) A number of log files might be generated by the installation. Check for an .log files generated when the installation program executed. The files could be in any of the following locations, depending upon whether the installation was successful or had errors, and where the installation encountered errors. Correct any errors or failures indicated before proceeding to the next step.
 - `/fnsw/local/logs/PE` (if the install completes successfully)
 - `/fnsw/tmp_installer` (if the install has errors)
 - `/fnsw/local/logs/wizard` and other subdirectories under `/fnsw/local/logs`
13. (Windows) A number of log files might be generated by the installation. Check for an .log files generated when the installation program executed. The files could be in any of the following locations, depending upon whether the installation was successful or had errors, and where the installation encountered errors. Correct any errors or failures indicated before proceeding to the next step.
 - `C:\Program Files\FileNet\PE\PE450_setup.log`
 - `C:\Program Files\FileNet\PE`
 - `C:\FNSW`
 - `Windir\mini_installer.log`, Windows Event logs, and log files under `\FNSW_LOC\logs`
14. (UNIX) Log off as the root user and log on as `fnsw` (or the alias).
15. Proceed to [“Proceed to “To reset administrative user passwords” on page 189.” on page 189.](#)

To install the Process Engine software silently (UNIX)

Complete the following procedures to silently install Process Engine.

1. Log on to the server as follows:

UNIX

Log on to the server as the root user. If you plan to run the SQL scripts from the Process Engine installation program, the user you log on as must also be a database administrator.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions, or as a Windows domain user as defined in *Specify IBM FileNet P8 accounts* in the *Plan and Prepare Your Environment for IBM FileNet P8* guide.. If you plan to run the SQL scripts from the Process Engine installation program, the user you log on as must also be a database administrator.

2. Access the Process Engine software package.
3. Edit the `PE_silent_install.txt` file to reflect the appropriate responses for your installation. All passwords in the response file must be encrypted. See [“Encrypt passwords” on page 700](#) for information on use of the password encryption tool.
4. Save the edited response file to your temporary directory.
5. Navigate to the temporary directory on the local disk.
6. Open a command prompt and start the appropriate installation program:


```
P8PE-4.5.0-platform.bin or .exe -silent -options PE_silent_install.txt
```

 (Windows) The Process Engine installation program will reboot the server, after which it will continue with the post-boot operations.
7. (Windows) A number of log files might be generated by the installation. Check for an .log files generated when the installation program executed. The files could be in any of the following locations, depending upon whether the installation was successful or had errors, and where the installation encountered errors. Correct any errors or failures indicated before proceeding to the next step.
 - `C:\Program Files\FileNet\PE\PE450_setup.log`
 - `C:\Program Files\FileNet\PE`
 - `C:\FNSW`
 - `Windir\mini_installer.log`, Windows Event logs, and log files under `\FNSW_LOC\logs`
8. (UNIX) Monitor `/fnsw/local/logs/wizard` to check the progress of the installation since the installation program will run for several minutes, and its progress, though displayed, might not visibly advance for an extended period of time.
9. (UNIX) A number of log files might be generated by the installation. Check for an .log files generated when the installation program executed. The files could be in any of the following locations, depending upon whether the installation was successful or had errors, and where the installation encountered errors. Correct any errors or failures indicated before proceeding to the next step.
 - `/fnsw/local/logs/PE` (if the install completes successfully)
 - `/fnsw/tmp_installer` (if the install has errors)
 - `/fnsw/local/logs/wizard` and other subdirectories under `/fnsw/local/logs`
10. (UNIX) Log off as the root user and log on as `fnsw` (or the alias).
11. Proceed to [“To reset administrative user passwords” on page 189](#).

To reset administrative user passwords

Process Engine installation automatically creates several internally required local users. For Oracle and SQL Server databases, if default users and passwords were configured, Process Engine installation also creates several database users. Because these users are created with default passwords, it is a best practice to reset the passwords for these users. The following table

lists the users created, the level of system access each user has, and the tool used to change the password. See the IBM FileNet Image Services documentation for instructions on using the referenced tools:

User Name	User Type	Description	How to modify
f_sw	Database (Oracle, SQL) OS user for DB2	Has DBA privileges. Used as the Process Engine run-time user.	Execute Xdbconnect. See steps below.
f_maint	Database (Oracle, SQL) OS user for DB2	Has DBA privileges. Used for RDBMS maintenance.	Execute Xdbconnect. See steps below.
fnsw or alias NOTE The default password for fnsw is BPMtemp1pzwd. If you change the password for the services at this point, stop and restart both services.	Operating System	Primary Process Engine user. Used to execute Process Engine software and services.	Windows After you change the password for the fnsw user, you must also use the Windows Services tool to update the Log On tab for the IMS ControlService and the Process Engine Services Manager because the fnsw user is used to start these services. NOTE Process Engine activity will cease if the fnsw user's password expires.
SysAdmin	SEC (internal Process Engine security software)	Primary administrator user for IBM FileNet software tools.	Execute Xapex -> Security Administration. Log on as SysAdmin.
FieldService	SEC	Used internally by Process Engine software.	
Operator	SEC	Used internally by Process Engine software.	

To verify the connection to the Process Engine database

Verify the ability to connect to the Process Engine database using the run-time user name and password.

1. Restart the Process Engine software by executing the following at a command prompt:

```
initfnsw -y restart
```

2. Initiate the connection to the database. At a command prompt, execute:

```
vwcomp -1
```

where the -1 option displays the currently configured connection to the Content Engine

If the connection is successful, you will receive a message indicating that the Content Engine has not been configured yet. Because there are no security settings configured, the above command should return a message similar to “The Process Engine's connection to the Content Engine has not been configured...”

Unsuccessful connection to the database will return an exception.

If the connection is not successful, there could be a mismatch between the password entered for the f_sw user during Process Engine installation and the password created by execution of the SQL scripts (Oracle) or for the operating system runtime user (DB2).

To determine if a failure to connect to the database is due to a password mismatch, use the steps in [“To set the f_maint and f_sw passwords” on page 191](#).

To set the f_maint and f_sw passwords

For added security, Process Engine stores an encrypted version of the passwords for the f_sw and f_maint users, or their aliases, in a file called `rdbup.bin`. This is in addition to passwords for these users in the Oracle or SQL Server database, or on the operating system where DB2 is installed. The encrypted password and the database (Oracle or SQL Server) or operating system (DB2) user's passwords must match.

To verify that the passwords match, use the following procedure to start the Xdbconnect utility. Xdbconnect works only if the passwords in the encrypted file and the database match.

Use the following procedure to change the passwords for the f_maint and f_sw users after installing the Process Engine software. For Oracle and SQL Server databases, both the encrypted file and the database passwords will be updated. For DB2, only the encrypted file will be updated.

1. Start the Database Server Connect application by executing the following:

```
Xdbconnect -r
```

2. Log on as SysAdmin. The default password is SysAdmin.
3. Change the primary password for the users f_sw and f_maint (or their alias) to match the database password (Oracle and SQL Server) or operating system user's password (DB2).
4. Exit the application.

To re-enable Oracle Password Complexity Verification

If, as directed earlier, you disabled the the Oracle Password Complexity Verification feature prior to installing Process Engine, you can now re-enable it.

(Optional: Oracle databases only) To remove fnsw user from the Oracle database administrators group (UNIX)

(Optional: Oracle databases only) To remove fnsw user from the Oracle database administrators group (UNIX)

Process Engine installation creates a user that is no longer required after installation is complete. Remove the fnsw (or the alias) user from the *Oracle Database Administrators* group.

(Optional; Oracle database only) To remove fnsw and oracle users from the ORA_DBA group (Windows)

Remove the fnsw (or its alias) and oracle users from the ORA_DBA group. Process Engine installation creates these users, which are no longer required after installation is complete.

To restore any custom modifications for root and fnsw users (UNIX)

Process Engine installation creates a new versions of a number of files. If the previous versions of these files contained any custom settings, edit the new files for the fnsw and root users accordingly. Saved files are in *.filename.old.nn*, where *nn* is a sequential number. The latest saved version will be in the highest numbered file. The following files are modified by the Process Engine installation program:

- .Xdefaults
- .Xresources
- .dbxinit
- .dtprofile
- .env
- .login
- .mwmrc
- .xinitrc
- .profile
- .cshrc

To verify the /etc/services file settings (UNIX)

1. Log on as the root user and check the */etc/services* file to verify the following parameters:

ALL UNIX

tms	32768/tcp
cor	32769/tcp
nch	32770/udp
fn_trapd	35225/udp

AIX only

smux	199/tcp	# snmpd smux port
------	---------	-------------------

Solaris only

fn_snmpd 161/udp

HP-UX only

snmp 161/udp snmpd # Simple Network Management Protocol Agent
 snmp-trap 162/udp trapd # Simple Network Management Protocol Traps

2. If necessary, add the parameters to the file and save the changes.

To verify the /etc/services file settings (Windows)

1. Log on as the Administrator user and check the \Windows\system32\drivers\etc\services file to verify the following parameters:

```
tms      32768/tcp
cor      32769/tcp
nch      32770/udp
fn_snmpd 161/udp
fn_trapd 35225/udp
```

2. If necessary, add the parameters to the file and save the changes.

To modify the integrity level for executables (Windows 2008)

Modify the mandatory integrity level of the Image Services executables to High. Complete the following procedure:

1. Open a command prompt with Administrative privileges.
2. Change the current directory to *installLocation*\fns\bin.
3. Execute the following command:

```
icacls *.exe /setintegritylevel H
```

To redirect log messages to the Image Services error log (Windows)

Enable the redirection of log messages to the Image Services error log. This redirection will log message to the Image Services error log as well as to the default Windows Event Log. By enabling this redirection, you will be able to monitor the progress of the database object upgrade in a command window.

To enable the redirection, change the LogToFiles value from 0 to 1 for the following registry key.

32-bit Windows

```
HKEY_LOCAL_MACHINE>SOFTWARE>FileNET>IMS>CurrentVersion
```

64-bit Windows

```
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\FileNet\IMS\CurrentVersion
```

To clean up before starting Process Engine (UNIX)

1. Log on as fnsw.
2. Execute:

```
killfnsw -DAyS
```
3. Execute:

```
ipcs -a
```
4. Verify there is no entry with 0x464 pattern. If there are any entries with this pattern, use `ipcrm` to remove them.

To edit the `/etc/inittab` file (UNIX)

By default, the Process Engine software starts automatically when you restart the server and needs its database started beforehand. If the database is not automatically started on server restart, edit the `/etc/inittab` file on the Process Engine machine to comment out the autostart of Process Engine. The following are examples of changes to make.

AIX

Change:

```
rcfnsw:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

to read:

```
#rcfnsw:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

HP-UX

Change:

```
rcfn:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

to read:

```
#rcfn:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

Solaris

Change:

```
fn:3:wait:/bin/sh /etc/rc.initfnsw </dev/console >/dev/console 2>&1
```

to read:

```
#fn:3:wait:/bin/sh /etc/rc.initfnsw </dev/console >/dev/console 2>&1
```

To edit the pe_start file (HP-UX)

If the value for the maxdsiz kernel parameter is > 1GB, edit the pe_start file.

Change:

```
nohup /usr/ccs/lbin/dldd32 2>&1 >/dev/null
```

to read:

```
nohup /usr/ccs/lbin/dldd32 +a 0x70000000 2>&1 >/dev/null
```

Proceed to ["Install Process Engine software updates"](#) on page 196.

Task 2: Install Process Engine software updates

Perform the procedure in this topic for the Process Engine to install software updates (mod release, fix pack, or interim fix).

If there are no Process Engine software updates to be installed, skip to [“Install the latest Content Engine Client files on Process Engine servers” on page 197](#).

To install the Process Engine software updates

1. To obtain the latest Process Engine software updates, and to determine whether additional interim fixes are needed, contact your service representative.
2. Open the readmes for the Process Engine software updates and perform the installation procedures in the readmes on the Process Engine.
3. Proceed to [“Install the latest Content Engine Client files on Process Engine servers” on page 197](#).

Task 3: Install the latest Content Engine Client files on Process Engine servers

To install the 4.5 release or fix pack version Content Engine Client files, perform the following procedures on all Process Engine servers. Except where noted, these steps apply to WebSphere, WebLogic, and JBoss.

To install the Content Engine Client files

Refer to the appropriate information from your installation worksheet while performing the following steps. For information on the Content Engine parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE Client installer.
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
1. To download the latest software updates, and to determine which of these updates may be required for use with other components and expansion products, contact your service representative.
 2. Log on to the server where Process Engine is installed as fns with these permissions:
 - Read and write permission to a temporary directory, such as `temp` (Windows) or `tmp` (UNIX), on the machine where Process Engine is installed
 - Execute permission on the Content Engine Client install softwareThe default password for fns was `BPMtemp1pzd`.
 3. Verify that there is a current backup of Process Engine.
 4. Copy the Content Engine Client install software from the Content Engine installation software to the temporary directory, and unzip the software package. The version of the installation software must match the version of Content Engine.
 - To install the Content Engine client interactively:
 - i. Access the IBM FileNet Content Engine client update software.

- ii. Run one of the commands in the table below, *CE_version* is the version of Content Engine you intend to run, for example, 4.5.0..

Operating System	Install Program
AIX	P8CE-CLIENT- <i>CE_version</i> -AIX.BIN
HPUX	P8CE-CLIENT- <i>CE_version</i> -HPUX.BIN
HPUXi	P8CE-CLIENT- <i>CE_version</i> -HPUXI.BIN
Linux	P8CE-CLIENT- <i>CE_version</i> -LINUX.BIN
Solaris	P8CE-CLIENT- <i>CE_version</i> -SOL.BIN
Windows	P8CE-CLIENT- <i>CE_version</i> -WIN.EXE
zLinux	P8CE-CLIENT- <i>CE_version</i> -ZLINUX.BIN

- iii. Complete the installation program wizard, using the following table.

In this screen...	Perform this action...
Welcome	<p>Click Next to proceed with the Content Engine Client installation.</p> <p>NOTE Click Back at any time while running the Content Engine Client installer to make changes in any previous screens. Click Cancel to exit the Content Engine Client installer.</p>
Specify Content Engine Client Installation Path	<p>Specify the complete path where you want the Content Engine Client program files installed. The defaults are as follows:</p> <p>UNIX</p> <p>/opt/FileNet/Content Engine</p> <p>Windows</p> <p>C:\Program Files\FileNet\CEClient</p> <p>Click Next to continue.</p>
Select FileNet P8 Applications	<p>Select Process Engine, and click Next to continue.</p>
Process Engine Installation Path	<p>Enter the full path to the Process Engine installation location. The defaults are as follows:</p> <p>UNIX</p> <p>/FNSW</p> <p>Windows</p> <p>C:\FNSW</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Content Engine Application Server	Select the Content Engine application server type from the list. Valid choices are: <ul style="list-style-type: none"> • WebSphere • WebLogic • JBoss Click Next to continue.
Specify URLs for EJB Transport (This screen will not display during an upgrade.)	Specify the URLs for the Content Engine Enterprise Java Bean (EJB) API. <ul style="list-style-type: none"> • Content Engine Client Software URL The URL for the Content Engine Web Services client API. This URL will contain the WcmApiConfig.properties file, which is required for applications to communicate with Content Engine Server, regardless of whether they use the EJB or Web Services transport method. The default is: cemp:iiop//CEServer:2809/FileNet/Engine • Content Engine upload URL The upload URL is used for internal processes during EJB transport activities. The default is: cemp:iiop//CEServer:2809/FileNet/Engine • Content Engine download URL The download URL is used for internal processes during EJB transport activities. The default is: cemp:iiop//CEServer:2809/FileNet/Engine Click Next to continue.
Specify URL for WSI Transport	The URL for the Content Engine Web Services client API. The API contains the WcmApiConfig.properties file, which is required for applications to communicate with Content Engine Server, regardless of whether they use the EJB or Web Services transport method. The default is: cemp:http://CEServer:9080/wsi/FNCEWS40DIME/ Click Next to continue.
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing Content Engine Client.

- To install the Content Engine client files silently:
 - i. Make a back up copy of the `CEClient_silent_install.txt` input file.
 - ii. Open the silent input file in a text editor. Follow the instructions in the silent input file to edit the file to reflect the appropriate responses for your update.
 - iii. Navigate to the path containing the Content Engine Client installation program, and run one of the commands in the following table to perform the silent install, where:

CE_version is the version of Content Engine you intend to run, for example, 4.5.0.

path is the path that contains the installation program.

Operating System	Install Program
AIX	<code>P8CE-CLIENT-CE_version-AIX.BIN -f path/CECLIENT.AIX/CEClient_silent_install.txt -i silent</code>
HPUX	<code>P8CE-CLIENT-CE_version-HPUX.BIN -f path/CEClient.HPUX/CEClient_silent_install.txt -i silent</code>
HPUXi	<code>P8CE-CLIENT-CE_version-HPUXI.BIN -f path/CEClient.HPUXI/CEClient_silent_install.txt -i silent</code>
Linux	<code>P8CE-CLIENT-CE_version-LINUX.BIN -f path/CEClient.Linux/CEClient_silent_install.txt -i silent</code>
Solaris	<code>P8CE-CLIENT-CE_version-SOL.BIN -f path/CEClient.Solaris/CEClient_silent_install.txt -i silent</code>
Windows	<code>P8CE-CLIENT-CE_version-WIN.EXE -f path\CEClient.Windows\CEClient_silent_install.txt -i silent</code>
zLinux	<code>P8CE-CLIENT-CE_version-ZLINUX.BIN -f path/CEClient.zLinux/CEClient_silent_install.txt -i silent</code>

5.

Task 4: Configure Process Task Manager

Complete this task to start the Process Task Manager and set initial configuration parameters.

To start the Process Task manager and software on the Process Engine

1. Log onto Process Engine as a member of fnadmin.
2. Start the Process Task Manager, as follows:

Windows

Select Start > Programs > FileNet P8 Platform > Process Engine > Process Task Manager.

UNIX

Enter `vwtaskman` at the command prompt. The terminal should support X Windows and the DISPLAY environment variable should be set.

3. Click your Process Engine server in the left-hand pane.
4. If the Process Engine software is not already running, start it by choosing Start from the Action menu.
5. Select the Process Engine in the feature pane and click the **Security** tab to configure the Security settings.

Provide the service username, Content Engine URI, Administrator Group, and Configuration Group identified on your installation worksheet. See the IBM FileNet P8 help topic [FileNet P8 Administration > Enterprise-wide Administration > Process Task Manager > Process Engine > Configure Process Engine > Security](#) for details on the user and groups.

NOTE The service username should be entered as a short name.

6. Click the **General** tab and make sure all settings are correct. Click **Apply** if any changes have been made.

After all parameters have been entered, click **Apply** and restart the Process Service when prompted. If errors are returned, additional information is available in:

Windows

`\fnsw_loc\logs\TM_daemon\PEDirectoryServerConnectionDebug.txt`

UNIX

`/fnsw/local/logs/TM_daemon/PEDirectoryServerConnectionDebug.txt`

7. Right-click on the **Regions** folder, select **New** to create a new region. See the IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > Isolated Regions > Concepts](#) for information on isolated regions.
8. Select the **General** subtab and fill in the region number.
9. Indicate whether region recovery will be enabled for this region. If you will be using region recovery:

- a. Enable region backups.
 - b. Identify the tablespaces or filegroups to be used by the region.
10. Click the **Security** subtab to set a region password.
- NOTE** The password must match the password that you will enter later when you create a Process Engine Region in [“Create a Process Engine isolated region” on page 259](#).
11. After all parameters have been entered, click **OK**
12. When prompted by Process Task Manager to start the software, click **OK**. Process Task Manager will start the software automatically by executing:

```
initfnsw -y restart
```

To verify connection to the Process Engine database

- Check the database connection from Process Engine by executing the following command. This will also verify that security settings were saved to the database. At a command prompt, execute:

```
vwcomp -1
```

where the `-1` option displays the currently configured connection to the Content Engine

If the security settings were saved, the above command returns the information you entered in the Process Engine Task Manager.

If there are no security settings saved, the above command returns a message indicating that the Process Engine's connection to the Content Engine has not been configured.

Proceed to [“Complete post-installation Process Engine configuration \(Windows only\)” on page 203](#).

Task 5: Complete post-installation Process Engine configuration (Windows only)

Use the procedure in this task to enable Process Engine to use the largest available contiguous free memory area for shared memory allocations. Unless you perform this procedure, at some point during normal execution the system will not allocate shared memory and will cease to function correctly.

In the following steps, you will use `vwtool` to get the address for the largest free memory block and use that address to create a new registry DWORD. The new registry DWORD you will create is `StartShmAddress`. You will then verify that address by running `ipc_tool`.

To configure contiguous free memory for Process Engine (Windows only)

1. At a command prompt, enter `vwtool`. When prompted, enter the service username you provided when completing the steps in [“Configure Process Task Manager” on page 201](#).
2. Use the `processmap` command to find the largest contiguous free memory area, as in:

```
<vwtool:1>processmap
```

`vwtool` returns the following:

```
Process Id (CR=this vwtool process):
```

Press **Return** (CR) to get the process map for this process, as in the following example, where the process ID is 2592. Continue to press Return to scroll through the output. The information you want is near the end of the information displayed:

```
C:\FNSW\BIN\vwtool.exe (ID:2592)
```

Address	Attrib	Size	Owner
=====	=====	=====	=====
00000000	Free	65536	
00010000	Private	12288	
00013000	Free	53248	
00020000	Private	4096	

.....(pages of memory addresses omitted here)

7FFDE000	Private	4096	
7FFDF000	Private	4096	
7FFE0000	Private	65536	

```
C:\FNSW\BIN\vwtool.exe (ID:2592)
```

```
Biggest FREE block found: 453873664 bytes at address 0x4B577000 there are
potentially 440128 Kb available for shared memory allocation by the PE server.
Rounded up to a 64K boundary, for use as a registry entry StartShmAddress, best free
block address 0x4B580000.
```

In this example, `0x4B580000` is the address you will need in the next step. In some cases you might see only the line referencing the largest free block because the value is already at a 64K boundary.

3. Start regedit from the Windows > Start > Run command and perform the following steps to create a DWORD value for StartShmAddress, using the address noted in step 2.

- a. Navigate to the following folder, as appropriate for your operating system:

32-bit OS

```
HKEY_Local_Machine\Software\FileNet\IMS\CurrentVersion\
```

64-bit OS

```
HKEY_Local_Machine\Software\WOW6432Node\FileNet\IMS\CurrentVersion\
```

- b. Right click on CurrentVersion and select New > DWORD Value.

- c. Create a new DWORD value named:

```
StartShmAddress
```

- d. Enter or verify the following in the Edit DWORD Value Screen:

```
Value name = StartShmAddress
```

```
Value data = address of largest free memory block
```

```
From the example above the value will be 4B580000.
```

```
Base = hexadecimal.
```

- e. Click **OK**.

- f. Exit from regedit.

4. Restart the Process Engine software by entering the following at a command prompt:

```
initfnsw -y restart
```

5. Verify the setting you just applied for the shared memory address by executing the following at a command prompt:

```
ipc_tool -A
```

The following is an example of the information that is returned.

```
Image Services software shared memory segment limit: 129 segments
Current configured segment size: 0x01000000 bytes (16 MB)
Before allocating shared memory for Image Services, the SysV library
performs a test to determine the system shared memory limit. This test
can be used as a reference for performance tuning. The test results vary
depending on the amount of memory in use by other processes. The actual
amount of shared memory available during operation may be less. The test
results are:
```

```
Successfully attached to 27 segments
Successfully obtained 432 MB of shared memory
```

The following table displays the number of shared memory segments currently in use by Image Services. Segment #0 (called the address manager) is small. The other segment(s) contain the actual Image Services data. Note that running ipc_tool will force the creation of segments #0 and #1 even when no

other Image Services process is up.
Shared Memory Address Manager Information

Address	Shm id	Creator
---------	--------	---------

Enter <space> to continue, 'q' to quit:

0	0x4b580000	Global\FNSHM_464d0000	Shared address manager
1	0x4c580000	Global\FNSHM_464a0000	FileNet server software

Total Image Services shared memory allocated: 16 MB

(This does not include segment #0)

NOTE The first shared memory address above 0x4B580000 is the value you would check for this example.

6. Exit `ipc_tool`. If the shared memory address is correct, proceed to the next installation task. If the value is not correct, verify [Step 1](#) - [Step 4](#) above before proceeding.

Install and configure Application Engine

To set up Application Engine, do the following:

1. Install Application Engine. Do [Task 1 on page 207](#).
2. Install Application Engine Software Updates. Do [Task 2 on page 218](#).
3. Install Content Engine Client file updates. Do [Task 3 on page 219](#).
4. Install Process Engine Client file updates. Do [Task 4 on page 224](#).
5. Configure Application Engine. Do one of the following:
 - [Task 5a on page 228](#) (WebSphere)
 - [Task 5b on page 237](#) (WebLogic)
 - [Task 5c on page 243](#) (JBoss)
6. Deploy Application Engine. Do one of the following:
 - [Task 6a on page 246](#) (WebSphere)
 - [Task 6b on page 249](#) (WebLogic)
 - [Task 6c on page 251](#) (JBoss)

Task 1: Install Application Engine

This topic includes Application Engine installation instructions for all supported application servers and operating systems.

NOTES

- If you plan to install and use the IBM FileNet Workplace XT product, you do not need to install Application Engine.
- Before installing Application Engine, check the latest version of the *IBM FileNet P8 4.5 Release Notes* for known issues that might impact this software installation. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- Make sure your installation location meets the requirements specific for Application Engine outlined in the *IBM FileNet P8 Hardware and Software Requirements*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- Consider whether changing your deployment type is likely.

As a best practice, choose to install Application Engine as if you intend to deploy an EAR file, rather than a WAR file, because this choice will produce both an EAR and a WAR file. If you decide to change your deployment type from EAR to WAR later, you will be able to use the WAR file from the original installation, rather than having to uninstall and reinstall Application Engine.

- (Highly Available installations) To install Application Engine in a web farm or clustered environment, follow the instructions in the *IBM FileNet P8 Platform High Availability Technical Notice*. That document outlines the required HA install procedure and references this guide for detailed installation and deployment instructions. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- To ensure proper functionality and performance install only one instance of Application Engine per application server (or virtual machine or WebSphere LPAR). You can, however, deploy multiple instances of a single Application Engine version per application server. For details, see [“Deploy multiple Application Engine instances” on page 295.](#)
- Before logging on to Workplace for the first time, at least one object store must exist on the Content Engine to hold the site preferences. See [“Create the initial object store” on page 133](#) for more information.
- If you run the installer to upgrade Application Engine, the installer verifies that the currently installed version of Application Engine can be upgraded. See [“Prepare for Application Engine upgrade” on page 544](#) for more information.
- You can install a new Application Engine 4.0.2 server within an existing 4.0.x FileNet P8 environment if your Content Engine is at version 401.006 or later and your Process Engine is at 403-000.001 or later. The Content Engine and Process Engine client files you install on the Application Engine must match the version of your Content Engine and Process Engine.

To install the Application Engine software

1. Log on to the application server, as appropriate for your operating system:

UNIX

Log on as a user with read, write, and execute access to the directory where you plan to install Application Engine.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions.

2. Start the installation process.
 - To install Application Engine interactively:
 - i. Access the IBM FileNet Application Engine 4.0.2 installation software.
 - ii. Launch the appropriate setup program as specified in the following table, and continue with [Step 3 on page 209](#).

Platform	Command
AIX	P8AE-4.0.2.0-AIX.bin
HPUX	P8AE-4.0.2.0-HPUX.bin
HPUXi	P8AE-4.0.2.0-HPUX64.bin
Linux	P8AE-4.0.2.0-LINUX.bin
Solaris	P8AE-4.0.2.0-SOL.bin
Windows	P8AE-4.0.2.0-WIN.exe
zLinux	P8AE-4.0.2.0-ZLINUX.bin

- To install Application Engine silently:
 - i. Locate the IBM FileNet Application Engine 4.0.2 installation software package, and copy the appropriate `AE_silent_input.txt` file to a local directory.
 - ii. Follow the instructions in the silent input file to edit the file to reflect the appropriate responses for your installation.

For information on parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the Data > Filter > AutoFilter command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the Application Engine installation program:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select AE Installer.

- Click the AutoFilter drop-down arrow in all other column headers and select (All).

IMPORTANT If you are modifying the silent input file to perform an upgrade from AE 3.5.x to AE 4.0.2 you must modify all instances of *AE_install_path* in the script as follows:

UNIX

Change `../FileNet/AE` to `../FileNet`

Windows

Change `..\FileNet\AE` to `..\FileNet`

Change `..\FileNet\AE` to `..\FileNet`

- iii. From a command prompt, navigate to and run the installer:

UNIX

```
./P8AE-4.0.2.0-operating system.bin -options path_to_edited_input_file/  
AE_silent_input.txt -silent
```

Windows

```
P8AE-4.0.2.0-Win.exe -options path_to_edited_input_file\AE_silent_input.txt -  
silent
```

NOTE When installing Application Engine remotely on UNIX, run the installer with the standard input stream redirected from `/dev/console`, for example:

```
rsh remote-machine -n P8AE-4.0.2.0-AIX.bin -options AESilentScriptUNIX.txt -  
silent < /dev/console
```

If you do not add the redirect, the silent intaller will fail with a "process not attached to terminal" message and the usage message for the "who" command.

- iv. Continue with [Step 4](#).

- 3. Complete the Application Engine Installer screens. For information on parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the Data > Filter > AutoFilter command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the Application Engine installation program:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select AE Installer.
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

Use the parameters from your installation preparation tasks to complete the installer screens, as follows:

In the screen for...	Perform this action...
Reading the license agreement NOTE This screen does not appear during a re-install or an upgrade.	Review and accept the license agreement.
Specifying the installation path	<p>For the Installation path field, enter or browse to the location where you want to install the Application Engine software <i>AE_install_path</i>, or accept the default location:</p> <p>UNIX</p> <pre>/opt/FileNet/AE/</pre> <p>Windows</p> <pre>C:\Program Files\FileNet\AE\</pre> <p>The installation program installs the Application Engine software in this path.</p> <p>NOTES</p> <ul style="list-style-type: none"> • The installer will use the <i>AE_install_path</i> to place a number of other files in default locations. See: <ul style="list-style-type: none"> – “Specifying the configuration directory path” on page 214 – “Specifying the log file location” on page 215. – “Configuring user token security” on page 216 • On an upgrade the default <i>AE_install_path</i> will be: <p>UNIX</p> <pre>/opt/FileNet/</pre> <p>Windows</p> <pre>C:\Program Files\FileNet\</pre> • If you select a custom install path, follow the same directory structure as seen in a typical install and retain the <i>/FileNet/AE</i> part of the path.

In the screen for...	Perform this action...
Verifying upgrade NOTE This screen appears only during an upgrade.	The Setup program detects supported older versions of Application Engine. If the installer reports that no supported version of Application Engine exists on your server or if you don't want to upgrade your Application Engine at this time, click Cancel to exit Setup.
Choosing an application server	Select the application server and version from the drop-down lists. These choices must match your Content Engine application server.
Configuring Content Engine API settings	Configure the Content Engine API settings, as follows: <ol style="list-style-type: none"> a. Transport method <p>Select EJB (Enterprise Java Beans) from the drop down list.</p> b. Content Engine Client software URL: <p>Replace the sample server name and port number (<i>CEserver:2809</i>) with the Content Engine server name and port number for your Content Engine server.</p> <p>NOTE To verify the correct port to use, navigate to the ports section on the application server where Content Engine is deployed and check the <code>BOOTSTRAP_ADDRESS</code> port.</p> <p>NOTE To change the Content Engine name later, or to connect to a different Content Engine, edit the <code>WcmApiConfig.properties</code> file. For information, see the IBM FileNet P8 help topic FileNet P8 Administration > Application Engine Administration > Key configuration files and logs.</p> c. Content Engine upload URL <p>Replace the sample server name and port number (<i>CEserver:2809</i>) with the Content Engine server name and port number to use when uploading document content to the Content Engine server.</p> d. Content Engine download URL <p>Replace the sample server name and port number (<i>CEserver:2809</i>) with the Content Engine server name and port number for your Content Engine server from which to download document content.</p>

In the screen for...	Perform this action...
Choosing deployment file type and creation time	<p>Choose to have the wizard create the WAR or EAR file during the installation process, or to wait until later.</p> <ul style="list-style-type: none"> Choose Generate a .ear file for deployment if your server can deploy an EAR file. Specify an application name for the EAR file deployment. The default is Workplace. Choose Generate a .war file for deployment if your server can deploy a WAR file. Choose Do not generate a deployment file at this time if you have additional installation and configuration to perform (such as installing Content Engine and Process Engine client files and configuring the application server) that will require another generation of the WAR or EAR file. <p>NOTE If you decide to deploy Application Engine as a WAR file and later decide to redeploy as an EAR file you must uninstall Application Engine and then reinstall the application, selecting EAR file deployment. For information, see “Consider whether changing your deployment type is likely.” on page 207.</p>
Choosing the authentication method	<p>Select the authentication method for use at your site.</p> <ul style="list-style-type: none"> Application-managed authentication uses authentication specific to the application and does not share credentials. Container-managed authentication provides the ability to use single sign-on (SSO) capabilities to share credentials between Application Engine and custom applications. <p>When you select Container-Managed Authentication, Setup installs a sample log-in application, and modifies the <code>web.xml</code> file to support SSO. You will need to perform additional configuration for SSO after Setup is finished.</p>

In the screen for...	Perform this action...
Specifying the documentation URL	<p>Enter the documentation server URL, which is where the IBM FileNet P8 Platform Documentation is installed.</p> <p>Your entry must be in the following format:</p> <pre data-bbox="656 489 1114 516">http://docserver:port#/ecm_help/</pre> <p>where:</p> <p><i>docserver</i> is the name of the Java application server.</p> <p><i>port#</i> is the port number.</p> <p><i>ecm_help</i> is the root folder of the documentation website. You can use multi-part root folders (for example, /docs/ecm_help) if your application server supports them.</p> <p>See "Install IBM FileNet P8 Platform documentation (All)" on page 23 for more information.</p> <p>NOTE For information on how to reconfigure the documentation URL after installation is completed, see the IBM FileNet P8 help topic FileNet P8 Administration > Application Engine Administration > Key configuration files and logs > Bootstrap properties.</p>

In the screen for...	Perform this action...
Specifying the configuration directory path	<p>Accept the default location or browse to the location where you want to store the configuration files.</p> <p>The default location for the configuration files is in a separate <code>Config</code> directory one level up from the <code>AE_install_path</code> directory selected earlier.</p> <p>Default location of the configuration directory:</p> <p>UNIX</p> <pre>/opt/FileNet/Config/</pre> <p>Windows</p> <pre>C:\Program Files\FileNet\Config\</pre> <p>CAUTION A UNC admin share (for example, <code>\\server\C\$</code>) for a shared location is not supported. You can use an ordinary file share.</p> <p>NOTES</p> <ul style="list-style-type: none"> • If you select a custom install location, follow the same directory structure as seen in a typical install and retain the <code>/FileNet/Config/AE</code> part of the path. • The configuration files for an EAR file deployment, a web farm, or a clustered environment must be located in a shared folder that is accessible by all copies of the Workplace application. For more information, see the <i>IBM FileNet P8 Platform High Availability Technical Notice</i>. To download this guide from the IBM support page, see “Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.
Specifying the upload location	<p>Provide the upload directory path.</p> <p>The upload directory is the directory used by Workplace to store temporary copies of files uploaded to Workplace.</p> <p>Accept the default option or browse for a directory to hold the temporary upload files.</p> <p>CAUTION A UNC admin share (for example, <code>\\server\C\$</code>) for a shared upload directory location is not supported. You can use an ordinary file share.</p>

In the screen for...	Perform this action...
Specifying the download location	<p>Provide the download directory path.</p> <p>The download directory is the directory used by Workplace to store temporary copies of files downloaded from Workplace.</p> <p>Accept the default option or browse for a directory to hold the temporary download files.</p> <p>CAUTION A UNC admin share (for example, \\server\C\$) for a shared download directory is not supported. You can use an ordinary file share.</p>
Specifying the log file location	<p>Provide the Log files directory path.</p> <p>The Log file path is the directory used by the installer to store the <code>app_engine_install_log_4_0_2.txt</code> log file.</p> <p>Accept the default option or browse for a directory.</p> <p>The default location for the log files is in a separate <code>Logs</code> directory one level up from the <code>AE_install_path</code> directory selected earlier.</p> <p>Default location of the logs directory:</p> <p>UNIX</p> <pre>/opt/FileNet/AE/Logs/</pre> <p>Windows</p> <pre>C:\Program Files\FileNet\AE\Logs\</pre> <p>NOTE If you select a custom install location, follow the same directory structure as seen in a typical install and retain the <code>/FileNet/Logs</code> part of the path.</p>

In the screen for...	Perform this action...
Configuring user token security	<p>Configure user token security.</p> <ol style="list-style-type: none"> If needed, select the check box to create maximum strength keys. By default the installer creates limited strength keys. Enter the number of keys to use, from 1-100. NOTE Security generally increases with the number of keys used. Make a note of the user token crypto key path. The <code>UTCryptoKeyFile.properties</code> file contains the user token cryptography key used by IBM FileNet P8 applications to launch into each other without the need for additional login. The default location for the User Token Crypto Key file is in a separate <code>Authentication</code> directory one level up from the <code>AE_install_path</code> directory selected earlier. Default location of the Authentication directory: UNIX <code>/opt/FileNet/Authentication/</code> Windows <code>C:\Program Files\FileNet\Authentication\</code> NOTE If you select a custom install location it is recommended to follow the same directory structure as seen in a typical install and retain the <code>/FileNet/Authentication</code> part of the path. CAUTION For multiple applications to pass user tokens to each other, each participating application must use the same encryption key file. Copy the <code>UTCryptoKeyFile.properties</code> file installed with Application Engine to all servers that are hosting a token-sharing application. For information, see the IBM FileNet P8 Developer Help topic Developer Help > Workplace Integration and Customization Introduction > User Tokens > Configuring Applications to Use Tokens.
Verifying your installation selections	Review the list of selections you have made. You may need to scroll to see all selections.
Starting the installation	Review the installation summary, and click Install .

In the screen for...	Perform this action...
Completing Application Engine setup	Click Finish to complete the installation.

- View the `app_engine_install_log_4_0_2.txt` file located, located in `AE_install_path/AE/Logs`.

Verify that no errors or failures were logged. Look for the ERROR designation at the start of a line. Correct any errors before you proceed.

- (Optional, UNIX only) Set the the `P8TASKMAN_HOME` system environment variable.

The Process Engine Client installer will set this variable for you. If you want to specify a different location for the client files, you can do so by setting the `P8TASKMAN_HOME` system variable. The default value set by the PE Client installer is:

```
P8TASKMAN_HOME=AE_install_path/CommonFiles
```

- Continue with [Task 2 "Install Application Engine software updates" on page 218](#).

Task 2: Install Application Engine software updates

Install any fix packs and interim fixes required for Application Engine.

To install the Application Engine software updates

1. To download the latest software updates, and to determine which of these updates may be required for use with other components and expansion products, contact your support representative.
2. Open the readmes for any subsequent fix packs or interim fixes (typically optional) and perform the installation procedures provided.
3. Install the latest updates for the Content Engine Client and Process Engine Client files using the subsequent tasks.

Task 3: Install the latest Content Engine Client files on Application Engine servers

To install the 4.5 release or fix pack version Content Engine Client files, perform the following procedures on all Application Engine servers. Most steps apply to both new installations and updates. However, some noted steps apply only to updates of the Content Engine Client files to a previously configured Application Engine installation. Except where noted, these steps apply to WebSphere, WebLogic, and JBoss.

To install the Content Engine Client files

Refer to the appropriate information from your installation worksheet while performing the following steps. For information about the Content Engine parameter values, see ["Installation and upgrade worksheet"](#) on page 229 in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT Verify that the **Data > Filter > AutoFilter** command is enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`). Do the following steps to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE Client installer.
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
1. To download the latest software updates, and to determine which of these updates might be required for use with other components and expansion products, contact your service representative.
 2. Log on to the server where Application Engine is installed as any user who has the following permissions:
 - Read and write permission to a temporary directory, such as `temp` (Windows) or `tmp` (UNIX), on the machine where Application Engine is installed
 - Execute permission on the Content Engine Client install software
 3. (For update installations only) Verify that there is a current backup of the Application Engine.
 4. Copy the Content Engine Client install software from the Content Engine installation software to the temporary directory. The version of the install software must match the version of Content Engine.
 5. Expand the (TAR or ZIP) Content Engine Client install software within the temporary directory.
 6. (For update installations only) Close all instances of Workplace and any other Application Engine client applications. From the application server administrative console, stop and undeploy Application Engine.

WebSphere

Stop and undeploy the FileNet Application Engine application.

WebLogic

Stop and undeploy the FileNet Application Engine application.

JBoss

Execute the shutdown command.

7. (WebLogic only) Manually delete the following application server cache directories, substituting your domain name in place of *mydomain*:

WebLogic UNIX

```
/opt/bea/user_projects/domains/mydomain/servers/AdminServer/tmp/_WL_user/
app_engine

/opt/ bea/user_projects/domains/mydomain/servers/.wlnotdelete

/opt/bea/user_projects/domains/mydomain/servers/AdminServer/cache/
EJBCompilerCache
```

WebLogic Windows

```
C:\bea\user_projects\domains\mydomain\servers\AdminServer\tmp\_WL_user\app_
engine

C:\bea\user_projects\domains\mydomain\servers\.wlnotdelete

C:\bea\user_projects\domains\mydomain\servers\AdminServer\cache\EJBCompiler
Cache
```

8. Start the Content Engine Client install process.
 - To install the Content Engine Client interactively:
 - i. Navigate to the IBM FileNet Content Engine Client software in the temporary directory.
 - ii. Run one of the commands in the following table, where *CE_version* is the version of Content Engine you intend to run, for example, 4.5.0.

Operating System	Install Program
AIX	P8CE-CLIENT- <i>CE_version</i> -AIX.BIN
HPUX	P8CE-CLIENT- <i>CE_version</i> -HPUX.BIN
HPUXi	P8CE-CLIENT- <i>CE_version</i> -HPUXI.BIN
Linux	P8CE-CLIENT- <i>CE_version</i> -LINUX.BIN
Solaris	P8CE-CLIENT- <i>CE_version</i> -SOL.BIN
Windows	P8CE-CLIENT- <i>CE_version</i> -WIN.EXE
zLinux	P8CE-CLIENT- <i>CE_version</i> -ZLINUX.BIN

iii. Complete the installation program wizard, using the following table.

In this screen...	Perform this action...
Welcome	<p>Click Next to proceed with the Content Engine Client installation.</p> <p>NOTE Click Back at any time while running the Content Engine Client installer to change any previous entries. Click Cancel to exit the Content Engine Client installer.</p>
Specify Content Engine Client Installation Path	<p>Specify the complete path where you want the Content Engine Client program files installed. The defaults are as follows:</p> <p>UNIX</p> <p>/opt/FileNet/CEClient</p> <p>Windows</p> <p>C:\Program Files\FileNet\CEClient</p> <p>Click Next to continue.</p>
Select FileNet P8 Applications	<p>Select Application Engine, and click Next to continue.</p>
Application Engine Installation Path	<p>Enter the full path to the Application Engine installation location. The defaults are as follows:</p> <p>UNIX</p> <p>/opt/FileNet/AE</p> <p>Windows</p> <p>C:\Program Files\FileNet\AE</p> <p>Click Next to continue.</p>
Content Engine Application Server	<p>Select the Content Engine application server type from the list. Valid choices are:</p> <ul style="list-style-type: none"> • WebSphere • WebLogic • JBoss <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify URLs for EJB Transport	<p>Specify the URLs for the Content Engine Enterprise JavaBeans (EJB) API.</p> <ul style="list-style-type: none"> Content Engine Client Software URL The URL for the Content Engine Web Services client API. This URL contains the WcmApiConfig.properties file. Applications require this file to communicate with Content Engine Server through the EJB method or the Web Services transport method. The default is: cemp:iiop//CEServer:2809/FileNet/Engine Content Engine upload URL The upload URL is used for internal processes during EJB transport activities. The default is: cemp:iiop//CEServer:2809/FileNet/Engine Content Engine download URL The download URL is used for internal processes during EJB transport activities. The default is: cemp:iiop//CEServer:2809/FileNet/Engine <p>Click Next to continue.</p>
Specify URL for WSI Transport	<p>The URL for the Content Engine Web Services client API. The API contains the WcmApiConfig.properties file. Applications require this file to communicate with Content Engine Server, either with the EJB method or the Web Services transport method.</p> <p>The default is: cemp:http://CEServer:9080/wsi/FNCEWS40DIME/</p> <p>Click Next to continue.</p>
Create Deployment File	<p>Specify whether the installer creates the deployment file for your application. If you have additional configuration to perform, you can create the deployment file manually later on. Select one of the following choices:</p> <ul style="list-style-type: none"> Have the installer create the file. Create the file later. <p>Click Next to continue.</p>
Review Pre-Installation Summary	<p>Verify your component selections, and click Install to start installing Content Engine Client.</p>

- To install the Content Engine Client files silently:
 - i. Make a backup copy of the `CEClient_silent_install.txt` input file, located in the software directory.
 - ii. Open `CEClient_silent_install.txt` in a text editor. Follow the instructions in the silent input file to edit the entries to reflect the appropriate responses for your install or update.
 - iii. Navigate to the path containing the Content Engine Client installation program. From that directory, run one of the commands in the following table to perform the silent install, where:

CE_version is the version of Content Engine you intend to run, for example, 4.5.0.

path is the path that contains the installation program.

Operating System	Install Program
AIX	<code>P8CE-CLIENT-CE_version-AIX.BIN -f path/CECLIENT.AIX/CEClient_silent_install.txt -i silent</code>
HPUX	<code>P8CE-CLIENT-CE_version-HPUX.BIN -f path/CEClient.HPUX/CEClient_silent_install.txt -i silent</code>
HPUXi	<code>P8CE-CLIENT-CE_version-HPUXI.BIN -f path/CEClient.HPUXI/CEClient_silent_install.txt -i silent</code>
Linux	<code>P8CE-CLIENT-CE_version-LINUX.BIN -f path/CEClient.Linux/CEClient_silent_install.txt -i silent</code>
Solaris	<code>P8CE-CLIENT-CE_version-SOL.BIN -f path/CEClient.Solaris/CEClient_silent_install.txt -i silent</code>
Windows	<code>P8CE-CLIENT-CE_version-WIN.EXE -f path\CEClient.Windows\CEClient_silent_install.txt -i silent</code>
zLinux	<code>P8CE-CLIENT-CE_version-ZLINUX.BIN -f path/CEClient.zLinux/CEClient_silent_install.txt -i silent</code>

Continue at [“Install the latest Process Engine Client files on Application Engine servers”](#) on page 224.

Task 4: Install the latest Process Engine Client files on Application Engine servers

To install the Process Engine Client files, perform the following steps on all Application Engine servers.

For both interactive and silent installs, refer to the appropriate information from your installation worksheet while performing the following steps. For information on the Process Engine parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Process Engine client installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select PE Client installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

To install the Process Engine client files

1. On the machine where Application Engine is to be deployed, log on as any user who has the following permissions:
 - Read and write permission to a temporary directory, such as `temp` (Windows) or `tmp` (UNIX), on the machine where Application Engine is installed
 - Execute permission on the Process Engine Client install software
2. Copy the Process Engine Client install software from the Process Engine installation software to the temporary directory. The version of the install software must match the version of Process Engine.
3. Expand the (TAR or ZIP) Process Engine Client install software within the temporary directory. The `jre.tar` file that is packaged with the Process Engine Client installer must be in the same directory as the Process Engine Client installer when the installer is run.
4. The expanded install software contains the Process Engine Client install program specific to the operating system on the machine where Application Engine is deployed. Run the program either interactively (using the install wizard) or silently.

To run the program interactively, run one of the commands in the table below, follow the wizard instructions, and then continue at step 5:

Operating System	Install Program
AIX	P8PE-CLIENT-4.5.0-AIX.BIN
HPUX	P8PE-CLIENT-4.5.0-HPUX.BIN
HPUXi	P8PE-CLIENT-4.5.0-HPUXI.BIN

Operating System	Install Program
Linux	P8PE-CLIENT-4.5.0-LINUX.BIN
Solaris	P8PE-CLIENT-4.5.0-SOL.BIN
Windows	P8PE-CLIENT-4.5.0-WIN.EXE
zLinux	P8PE-CLIENT-4.5.0-ZLINUX.BIN

5. Complete the Process Engine client installer screens, as follows:

In this screen...	Perform this action...
Welcome to Process Engine Client Installer	Click Next to proceed with the installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Specify Installation Location	Choose the destination directory for Process Engine Client log files and uninstallation files. Accept the default location or click Browse to change the location.
Select FileNet P8 Applications	Select Application Engine as the product for which you would like to install Process Engine Client files. Click Next to continue.
Application Engine Installation Path	Enter the full path to the Application Engine installation location. The defaults are as follows: UNIX /opt/FileNet/AE Windows C:\Program Files\FileNet\AE Click Next to continue.
Specify the URL for the Component Manager	Enter the URL that the Component Manager uses to connect to the Content Engine using Web Services transport. The default is: <code>http://CEServer.port/wsi/FNCEWS40DIME/</code>

In this screen...	Perform this action...
Specify the Documentation URL	<p>Enter the URL where the IBM FileNet P8 Platform Documentation is installed. Use the following format:</p> <p><code>http://docserver:port#/ecm_help</code></p> <p>where:</p> <p><i>docserver</i> is the name of the Java web server. <i>port#</i> is the port number. <i>ecm_help</i> is the root folder of the documentation web site. You can use multi-part root folders, for example, <code>/docs/ecm_help</code>, if your application server supports them.</p>
Specify when to create the deployment file	<p>Indicate whether to create the WAR or EAR deployment file now or later. If you have additional configuration to perform, you can create the deployment file manually later.</p>
Stop running BPM software	<p>If the installer detects running BPM software components, click Next to stop the software and continue with the installation.</p>
Review Pre-Installation Summary	<p>Verify your component selections, and click Install to start installing Process Engine Client.</p>

To run the program silently, perform the following steps:

- a. In the expanded install software, open the file `PEClient_silent_install.txt` and edit it as follows:
 - i. Change the `Variable_CheckboxAE` line to the following:


```
-V Variable_CheckboxAE="true"
```
 - ii. Run one of the commands in the following table to perform the silent install:

Operating System	Install Program
AIX	<code>P8PE-CLIENT-4.5.0-AIX.BIN -silent -options "PEClient_silent_install.txt"</code>
HPUX	<code>P8PE-CLIENT-4.5.0-HPUX.BIN -silent -options "PEClient_silent_install.txt"</code>
HPUXi	<code>P8PE-CLIENT-4.5.0-HPUXI.BIN -silent -options "PEClient_silent_install.txt"</code>
Linux	<code>P8PE-CLIENT-4.5.0-LINUX.BIN -silent -options "PEClient_silent_install.txt"</code>
Solaris	<code>P8PE-CLIENT-4.5.0-SOL.BIN -silent -options "PEClient_silent_install.txt"</code>

Operating System	Install Program
Windows	P8PE-CLIENT-4.5.0-WIN.EXE -silent -options "PEClient_silent_install.txt"
zLinux	P8PE-CLIENT-4.5.0-ZLINUX.BIN -silent -options "PEClient_silent_install.txt"

Configure Application Engine using the instructions for you application server type:

- ["Configure Application Engine \(WebSphere\)" on page 228](#)
- ["Configure Application Engine \(WebLogic\)" on page 237](#)
- ["Configure Application Engine \(JBoss\)" on page 243](#)

Task 5a: Configure Application Engine (WebSphere)

To use the Application Engine web application (Workplace), you must first configure the application to work with your application server. Use the following procedures to configure Workplace. Not all procedures apply to all installations. Do the procedures that apply to your installation in the order presented here.

To edit web.xml for container-managed authentication or SSO

NOTE Perform this procedure only if your site uses WebSphere with container-managed authentication or Single Sign-On (SSO). If you are using SSO, you must perform additional configuration steps as directed at the end of this procedure.

1. Make a back-up copy of web.xml.

```
AE_install_path/Workplace/WEB-INF/web.xml
```

2. Edit web.xml.

NOTE Text in **bold** in the following examples indicates changes made to the original web.xml file.

- a. Search for the parameter challengeProxyEnabled and set it to false.

```
<param-name>challengeProxyEnabled</param-name>
<param-value>false</param-value>
```

- b. Search for the first instance of <web-resource-collection>, and uncomment the url-pattern as noted in the file comments.

```
<web-resource-collection>
  <web-resource-name>action</web-resource-name>
  <description>Define the container secured resource</description>
  <url-pattern>/containerSecured/*</url-pattern>
```

```
<!--
```

```
    Uncomment this section if all resources that require credentials
    must be secured in order to obtain a secured Thread. If using WebSphere,
    this section must be
    uncommented.
```

```
--> Move this commenting tag here from just before the </web-resource-
collection> closing tag below.
```

```
<url-pattern>/containerSecured/*</url-pattern>
<url-pattern>/</url-pattern>
<url-pattern>/author/*</url-pattern>
<url-pattern>/Browse.jsp</url-pattern>
<url-pattern>/eprocess/*</url-pattern>
<url-pattern>/Favorites.jsp</url-pattern>
<url-pattern>/GetPortalSitePreferences.jsp</url-pattern>
<url-pattern>/GetTokenSignIn.jsp</url-pattern>
<url-pattern>/GetUserInformation.jsp</url-pattern>
<url-pattern>/GetUserToken.jsp</url-pattern>
<url-pattern>/HomePage.jsp</url-pattern>
<url-pattern>/IntegrationWebBasedHelp.jsp</url-pattern>
<url-pattern>/is/*</url-pattern>
<url-pattern>/operations/*</url-pattern>
<url-pattern>/portlets/Author/edit.jsp</url-pattern>
<url-pattern>/portlets/Author/portlet.jsp</url-pattern>
```

```

<url-pattern>/portlets/Browse/edit.jsp</url-pattern>
<url-pattern>/portlets/Browse/portlet.jsp</url-pattern>
<url-pattern>/portlets/ExternalUrl/edit.jsp</url-pattern>
<url-pattern>/portlets/ExternalUrl/portlet.jsp</url-pattern>
<url-pattern>/portlets/GroupPageDesign.jsp</url-pattern>
<url-pattern>/portlets/GroupPageSettings.jsp</url-pattern>
<url-pattern>/portlets/Inbox/edit.jsp</url-pattern>
<url-pattern>/portlets/Inbox/portlet.jsp</url-pattern>
<url-pattern>/portlets/MultiPagesDesign.jsp</url-pattern>
<url-pattern>/portlets/OrganizePages.jsp</url-pattern>
<url-pattern>/portlets/PortalPageDesign.jsp</url-pattern>
<url-pattern>/portlets/PortalPageInfo.jsp</url-pattern>
<url-pattern>/portlets/PortletAlias.jsp</url-pattern>
<url-pattern>/portlets/PortletSettings.jsp</url-pattern>
<url-pattern>/portlets/PreviewAndSetup.jsp</url-pattern>
<url-pattern>/portlets/PublicQueue/edit.jsp</url-pattern>
<url-pattern>/portlets/PublicQueue/portlet.jsp</url-pattern>
<url-pattern>/portlets/QuickSearch/edit.jsp</url-pattern>
<url-pattern>/portlets/QuickSearch/portlet.jsp</url-pattern>
<url-pattern>/portlets/Workflows/edit.jsp</url-pattern>
<url-pattern>/portlets/Workflows/portlet.jsp</url-pattern>
<url-pattern>/properties/*</url-pattern>
<url-pattern>/redirect/*</url-pattern>
<url-pattern>/regions/*</url-pattern>
<url-pattern>/Search.jsp</url-pattern>
<url-pattern>/select/*</url-pattern>
<url-pattern>/SelectReturn.jsp</url-pattern>
<url-pattern>/Tasks.jsp</url-pattern>
<url-pattern>/UI-INF/*</url-pattern>
<url-pattern>/utils/*</url-pattern>
<url-pattern>/WcmAdmin.jsp</url-pattern>
<url-pattern>/WcmAuthor.jsp</url-pattern>
<url-pattern>/WcmBootstrap.jsp</url-pattern>
<url-pattern>/WcmCloseWindow.jsp</url-pattern>
<url-pattern>/WcmDefault.jsp</url-pattern>
<url-pattern>/WcmError.jsp</url-pattern>
<url-pattern>/WcmJavaViewer.jsp</url-pattern>
<url-pattern>/WcmObjectBookmark.jsp</url-pattern>
<url-pattern>/WcmPortletHelp.jsp</url-pattern>
<url-pattern>/WcmPortletSearch.jsp</url-pattern>
<url-pattern>/WcmQueueBookmark.jsp</url-pattern>
<url-pattern>/WcmSignIn.jsp</url-pattern>
<url-pattern>/WcmSitePreferences.jsp</url-pattern>
<url-pattern>/WcmUserPreferences.jsp</url-pattern>
<url-pattern>/WcmWorkflowsBookmark.jsp</url-pattern>
<url-pattern>/wizards/*</url-pattern>
<url-pattern>/Author/*</url-pattern>
<url-pattern>/axis/*.jws</url-pattern>
<url-pattern>/Browse/*</url-pattern>
<url-pattern>/ceTunnel</url-pattern>
<url-pattern>/CheckoutList/*</url-pattern>
<url-pattern>/downloadMultiTransferElement/*</url-pattern>
<url-pattern>/ExternalUrl/*</url-pattern>
<url-pattern>/findRecordTarget</url-pattern>
<url-pattern>/formCallback/*</url-pattern>
<url-pattern>/getAnnotSecurity/*</url-pattern>
<url-pattern>/getCEAnnotations/*</url-pattern>
<url-pattern>/getContent/*</url-pattern>
<url-pattern>/getForm/*</url-pattern>
<url-pattern>/getISAnnotations/*</url-pattern>
<url-pattern>/getISAnnotSecurity/*</url-pattern>
<url-pattern>/getISContent/*</url-pattern>
<url-pattern>/getMultiContent/*</url-pattern>
<url-pattern>/getPreview</url-pattern>
<url-pattern>/getProcessor/*</url-pattern>
<url-pattern>/getRealms/*</url-pattern>
    
```

```

<url-pattern>/getUsersGroups/*</url-pattern>
<url-pattern>/Inbox/*</url-pattern>
<url-pattern>/integrationCommandProxy</url-pattern>
<url-pattern>/integrationResponse</url-pattern>
<url-pattern>/integrationResponseProxy</url-pattern>
<url-pattern>/integrationWebBasedCommand</url-pattern>
<url-pattern>/keepAlive</url-pattern>
<url-pattern>/launch/*</url-pattern>
<url-pattern>/PublicQueue/*</url-pattern>
<url-pattern>/putContent/*</url-pattern>
<url-pattern>/QuickSearch/*</url-pattern>
<url-pattern>/signingServlet/*</url-pattern>
<url-pattern>/transport/*</url-pattern>
<url-pattern>/upload/*</url-pattern>
<url-pattern>/vwsimsoapservlet</url-pattern>
<url-pattern>/vwsoaprouter</url-pattern>
<url-pattern>/Workflows/*</url-pattern>  Move the closing comment tag from
here to the location indicated at the beginning of this example.
</web-resource-collection>
    
```

- c. Locate the section <auth-constraint>, comment the wildcard (*) role-name as noted in the file comments.

```

<auth-constraint>
  <!-- <role-name>*</role-name> -->
  <!-- For WebSphere 6, use the role-name line below instead of the wildcard role
  above.-->

  <role-name>All Authenticated</role-name>

  <!-- For WebSphere 6, add this security-role element below the login-config
  element (below).
  <security-role>
    <description>All Authenticated</description>
    <role-name>All Authenticated</role-name>
  </security-role>
  -->
</auth-constraint>
    
```

- d. Locate the end of the </login-config> element, and add the All Authenticated users role-element after the closing tag.

```

<security-role>
  <description>All Authenticated</description>
  <role-name>All Authenticated</role-name>
</security-role>
    
```

- e. Search for the first instance of a <security-constraint> tag, and add the following <security-constraint> tag before that tag.

IMPORTANT Enter the following information as single lines without line breaks.

```

<security-constraint>
  <web-resource-collection>
    <web-resource-name>action</web-resource-name>
    <description>Define the non-secured resource</description>
    <url-pattern>/P8BPMWSBroker/*</url-pattern>
  </web-resource-collection>
</security-constraint>
    
```

3. Save your changes to web.xml and close the file.

4. If your site uses SSO, continue on with [“\(SSO Only\) To edit web.xml for SSO \(optional\)” on page 231](#). Otherwise continue with [“To configure Application Engine \(WebSphere\)” on page 232](#).

(SSO Only) To edit web.xml for SSO (optional)

NOTE Perform this procedure only if your site uses SSO with a proxy server. You must use this procedure to modify web.xml to enable SSO.

1. Open web.xml for editing.
2. At the end of web.xml, comment out the <login-config> element, as follows:

```
<!--
<login-config>
  <auth-method>FORM</auth-method>
  <realm-name>AE Workplace</realm-name>
  <form-login-config>
    <form-login-page>/ContainerLogin.jsp</form-login-page>
    <form-error-page>/ContainerError.jsp</form-error-page>
  </form-login-config>
</login-config>
-->
```

3. As needed, set the ssoProxyContextPath, ssoProxyHost, ssoProxyPort, and ssoProxySSLPort.

These parameter values are used to modify one or more elements of the native URL that Workplace sees on a request. Wherever the value of an SSO proxy host element in the URL request is different from the equivalent information for the host where Workplace is deployed, you must set the corresponding sso<proxy host element> parameter for that element in the URL to the value for the SSO proxy host.

The default settings are (in **bold**):

```
<init-param>
  <param-name>ssoProxyContextPath</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxyHost</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxyPort</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxySSLPort</param-name>
  <param-value></param-value>
</init-param>
```

In general, the init parameters must be configured as follows:

- **ssoProxyContextPath**: Set the value to the context path of the SSO proxy host URL. This path is the path portion of the URL that appears after the server name. The path represents top-level access to the Workplace application.

For example, if the Workplace deployment host URL is `http://deploy_server:2809/Workplace` and the SSO proxy host URL is `http://sso_proxy_server.domain.com/fn/Workplace`, then use the following values:

```
<param-name>ssoProxyContextPath</param-name>
<param-value>/fn/Workplace</param-value>
```

- **ssoProxyHost:** Set the value to the SSO proxy host server name. Typically, this value is a full domain-qualified host name.

For example, if the host URL where Workplace is deployed is `http://deploy_server/Workplace` and the corresponding SSO proxy host URL is `http://sso_proxy_server/Workplace`, then use the following values:

```
<param-name>ssoProxyHost</param-name>
<param-value>sso_proxy_server</param-value>
```

- **ssoProxyPort:** Set the value to the http port on the SSO proxy host.

For example:

```
<param-name>ssoProxyPort</param-name>
<param-value>80</param-value>
```

- **ssoProxySSLPort:** Set the value to the https port on the SSO proxy host, if defined or used to access Workplace pages.

For example:

```
<param-name>ssoProxySSLPort</param-name>
<param-value>443</param-value>
```

4. Save your changes to `web.xml` and close the file.

To configure Application Engine (WebSphere)

1. In the administrative console, set JVM settings for JAAS login configuration and memory settings.
 - a. Navigate to Servers > Application Servers > *server_name* > Java & Process Management > Process Definition > Java Virtual Machine.

In the Java Virtual Machine settings, set the JAAS login entry in the Generic JVM argument field to the following (do not enter the line breaks):

```
-Djava.security.auth.login.config=AE_install_path\CE_API\config
\jaas.conf.WebSphere
```

where *AE_install_path* is your installation path. Your path might be slightly different depending on the version of your client installations, or whether you have chosen a custom path for installation. Verify the location of the file and specify the install path location before you enter the path.

IMPORTANT (Windows only) The path cannot contain a space. You must use 8.3-notation for the install path portion of the full JAAS login entry.

If your *AE_install_path* is:

```
C:\Program Files\FileNet\AE
```

use:

```
C:\Progra~1\FileNet\AE
```

IMPORTANT Do not copy and paste the text from this guide into the field in the console because hidden formatting can cause problems with the entry. Use a paste special option in a text editor to remove formatting first, or type the entry into the field.

- b. Set the Initial and Maximum Heap Size.

Refer to your application server vendor recommendation for Initial and Maximum heap size values. For IBM-specific recommendations, see the *IBM FileNet P8 Platform Performance Tuning Guide*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

- c. Save your changes.

2. (For installations with Content Engine and Application Engine collocated on the WebSphere server, but in different WebSphere profiles) Create an additional JVM property for different WebSphere profiles.

Perform the following steps on *both* the Content Engine profile and the Application Engine profile:

- a. In the Java Virtual Machine settings, click **Custom Properties > New**.

- b. In the **Name** field, enter the following name:

`com.ibm.websphere.orb.uniqueServerName`

- c. Set the **Value** to true.

- d. Save your changes.

3. Verify that Application Integration installation is enabled.

- a. In the Environment area, in Virtual Hosts, navigate to **default_host** (or the host your application is deployed under).

- b. Click **MIME Types**.

- c. Verify that MIME type is set to application/octet-stream or use the following steps to set it.

- i. Click **New**.

- ii. In the **MIME Type** field, enter **application/octet-stream**.

- iii. In the **Extension(s)** field, enter **exe**. Click **OK**.

- iv. Click **Apply**, click **Save**.

- d. Save your changes.

4. Configure Lightweight Third Party Authentication (LTPA).

NOTE Skip this step if your Application Engine and Content Engine are located on the same application server.

- a. On the Content Engine application server, do the following:

NOTE If you are already using LTPA with your Content Engine application server, you only need to copy the key file to the Application Engine server. Skip to [Step xii](#).

- i. Log in to the administrative console.
- ii. Navigate to **Security > Secure administration, applications, and infrastructure**.
- iii. From the right side of the panel, select **Authentication Mechanisms and expiration**.
- iv. Enter a value for the timeout that is larger than the default.

For example, if the timeout value is set to 120 minutes, the LTPA key expires. Users will not be able to log in to Workplace after having been logged in for 2 hours.

- v. Save your changes.
- vi. In the box titled "Cross-cell single sign-on," enter a password to create the *LTPA password*.

NOTE For password restrictions, see the WebSphere documentation. If you have already configured Content Engine for LTPA, use the existing password for the Application Engine steps.

- vii. Enter a path for the Key File Name. For example, */opt/LTPA/ltpa_key_name*.

- viii. Click **Export Keys**. Verify that the following message is displayed: The keys were successfully exported to the file *ltpa_key_name*.

- ix. Click **Import Keys**.

- x. Click **OK**, and then click **Save changes to the Master Configuration**.

- xi. Stop and restart WebSphere.

- xii. Copy the key file from Content Engine server location you specified to a directory on the Application Engine server. For example, */opt/LTPA/ltpa_key_name*.

- b. On the Application Engine server WebSphere administrative console, do the following steps:

- i. Navigate to **Security > Secure administration, applications, and infrastructure**.
- ii. From the right side of the panel, select **Authentication Mechanisms and expiration**.
- iii. Enter a value for the timeout that is larger than the default.

For example, if the timeout value is set to 120 minutes, the LTPA key expires. Users will not be able to log in to Workplace after having been logged in for 2 hours. Save your changes.

- iv. In the box titled cross-cell single sign-on, enter the LTPA password you created for Content Engine. Confirm the password.
- v. Specify the path for the key file that you copied to the Application Engine server. For example, */opt/LTPA/ltpa_key_name*.
- vi. Click **Import Keys**. Verify that the following message is displayed: The keys were successfully imported from the file *ltpa_key_name*.
- vii. Save your changes.

5. Configure Lightweight Directory Access Protocol (LDAP).

NOTE Skip this step if your Application Engine and Content Engine are located on the same application server.

- a. Navigate to Security > Secure administration, applications, and infrastructure.
- b. Disable security using the following Security settings:
 - Turn off (clear) **Enable Administrative Security** flag.
 - Turn off (clear) **Enable application security** flag.
 - Turn off (clear) **Java 2 Security**.
- c. From the Active Authentication Mechanism drop down list, select **LTPA (Light weight Third Party Authentication)**.
- d. From the bottom of the panel, in the box titled "available realm definitions," select **Standalone LDAP registry** and click **Configure**.
- e. Configure the LDAP provider to exactly match the corresponding settings on the Content Engine application server.
 - Primary administrative user name
 - Select "Automatically generated server identity."
 - Type
 - Host
 - Port
 - Base distinguished name (DN)
 - Bind distinguished name (DN)
 - Bind password
- f. Configure the Advanced Lightweight Directory Access Protocol (LDAP) user registry settings to exactly match the corresponding settings from the Content Engine application server.
 - User filter
 - Group Filter
 - User ID map
 - Group member ID map
 - Certificate map mode
 - Certificate filter
- g. Save these settings.
- h. Next to "Available realm definitions," make sure "Standalone LDAP registry" is still selected, and click **Set as current**.
- i. Re-enable the following Security settings:

- Turn on (check) **Enable Administrative Security flag**.
- Turn on (check) **Enable application security flag**.
- Turn off (clear) **Java 2 Security**.

NOTE The IBM FileNet P8 Platform uses LDAP-based security, and does not support Java 2 security. Enabling Java 2 security can cause unexpected behavior.

- j. Save your changes to the master configuration.
 - k. Test the connection on the Standalone LDAP registry page. If the test fails, correct the error before proceeding. If it passes, click **OK** to return to the previous page.
6. If you do not plan to perform the procedure to configure the server ports, stop and restart WebSphere before continuing on to deploy Application Engine.
 7. Continue with [“To configure the server ports” on page 236](#).

To configure the server ports

This configuration is not required but is recommended.

1. Stop the WebSphere server.
2. Make a backup copy of `serverindex.xml` located in:

```
WAS_HOME\profiles\default\config\cells\machine_nameNode01Cell\nodes\  
machine_nameNode01\
```

3. Edit the `serverindex.xml` file for each node. The file has the same endpoints for each node on the server, and you need to perform the edit for each node.

Locate the `<specialEndpoints>` section, and change the port numbers for the three SSL listener addresses to “0” as shown here:

```
<specialEndpoints xmi:id="NamedEndPoint_1155689929072"  
endPointName="SAS_SSL_SERVERAUTH_LISTENER_ADDRESS">  
  <endPoint xmi:id="EndPoint_1155689929072" host="host_name" port="0"/>  
</specialEndpoints>  
<specialEndpoints xmi:id="NamedEndPoint_1155689929073"  
endPointName="CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS">  
  <endPoint xmi:id="EndPoint_1155689929073" host="host_name" port="0"/>  
</specialEndpoints>  
<specialEndpoints xmi:id="NamedEndPoint_1155689929074"  
endPointName="CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS">  
  <endPoint xmi:id="EndPoint_1155689929074" host="host_name" port="0"/>  
</specialEndpoints>
```

4. Save and close the `serverindex.xml` file.
5. Restart WebSphere.

Deploy the Workplace application. See [“Deploy Application Engine \(WebSphere\)” on page 246](#).

Task 5b: Configure Application Engine (WebLogic)

This topic covers the configuration of your Application Engine application (Workplace) on WebLogic. Perform the following high-level steps in the order listed, using the referenced detailed procedures for each step.

1. If you are using SSO, edit `web.xml`. See [“To edit web.xml for SSO \(optional\)”](#) on page 237.
2. Modify the application server startup script. See [“To modify the application server startup script”](#) on page 238.
3. Configure Application Engine. See [“To configure Application Engine \(WebLogic\)”](#) on page 241.
4. Modify `config.xml` to support passing user credentials to clients such as Application Integration and WebDAV. See [“To enable passing user credentials to client applications \(WebLogic\)”](#) on page 242.

To edit web.xml for SSO (optional)

NOTE Perform this procedure only if your site uses SSO with a proxy server. You must modify `web.xml` to enable SSO.

1. Make a backup copy of `web.xml`.
2. Edit `web.xml`.
 - a. Set the parameter `perimeterChallengeMode` to true, as in:

```
AE_install_path/Workplace/WEB-INF/web.xml
```

```
<init-param>
  <param-name>perimeterChallengeMode</param-name>
  <param-value>true</param-value>
</init-param>
```

- b. As needed, set the `ssoProxyContextPath`, `ssoProxyHost`, `ssoProxyPort`, and `ssoProxySSLPort`.

These parameter values are used to modify one or more elements of the native URL that Workplace sees on a request. Wherever the value of an SSO proxy host element in the URL request is different from the equivalent information for the host where Workplace is deployed, then you must set the corresponding `sso*` parameter for that element in the URL to the value for the SSO proxy host.

The default settings are (in **bold**):

```
<init-param>
  <param-name>ssoProxyContextPath</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxyHost</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxyPort</param-name>
  <param-value></param-value>
</init-param>
```

```
<init-param>
  <param-name>ssoProxySSLPort</param-name>
  <param-value></param-value>
</init-param>
```

In general, the init parameters above should be configured as follows:

- **ssoProxyContextPath:** Set the value to the context path of the SSO proxy host URL. This is the path portion of the URL that appears after the server name, and which represents top-level access to the Workplace application.

For example, if the Workplace deploy host URL is

`http://deploy_server:2809/Workplace` and the SSO proxy host URL is

`http://sso_proxy_server.domain.com/fn/Workplace`, then use the following:

```
<param-name>ssoProxyContextPath</param-name>
<param-value>/fn/Workplace</param-value>
```

- **ssoProxyHost:** Set the value to the SSO proxy host server name. Typically, this will be a full domain-qualified hostname.

For example, if the host URL where Workplace is deployed is

`http://deploy_server/Workplace` and the corresponding SSO proxy host URL is

`http://sso_proxy_server/Workplace`, then use the following:

```
<param-name>ssoProxyHost</param-name>
<param-value>sso_proxy_server</param-value>
```

- **ssoProxyPort:** Set the value to the http port on the SSO proxy host.

For example:

```
<param-name>ssoProxyPort</param-name>
<param-value>80</param-value>
```

- **ssoProxySSLPort:** Set the value to the https port on the SSO proxy host, if defined and/or used to access Workplace pages.

For example:

```
<param-name>ssoProxySSLPort</param-name>
<param-value>443</param-value>
```

3. Save your changes to `web.xml` and close the file.

To modify the application server startup script

1. Stop the WebLogic application server if running.
2. Make a backup copy of the application server startup script.

Back up `startWebLogic.cmd` for Windows or `startWebLogic.sh` for UNIX.

NOTE If you are not using a WebLogic domain, backup `startWLS.cmd` for Windows or `startWLS.sh` for UNIX.

- a. Edit the `MEM_ARGS` variable.

Adjusting this setting prevents the application server from running out of memory, a condition in which users would not be able to log in to Workplace.

NOTE If the MEM_ARGS variable doesn't exist, add it to the startup script.

- For all systems except those using JRockit JAVA.

Append the following to the MEM_ARGS variable:

```
-XX:MaxPermSize=size
```

where *size* is the value, in MB, of the MaxPermSize.

Refer to your application server vendor's recommendation for Initial and Maximum heap size values. For IBM specific recommendations, see the *IBM FileNet P8 Platform Performance Tuning Guide*. To download this guide from the IBM support page, see ["Access IBM FileNet documentation, compatibility matrices, and fix packs" on page 20](#).

- For systems using JRockit JAVA.

Append the following to the MEM_ARGS variable:

```
-Xgc:gencon
```

- If your application server uses the IBM JVM, edit the JAVA_OPTIONS variable (to improve performance).

UNIX

Immediately before the following line in `startWebLogic.sh`:

```
SAVE_JAVA_OPTIONS=$JAVA_OPTIONS
```

insert this line (without a carriage return):

```
JAVA_OPTIONS="$JAVA_OPTIONS -Dprogram.name=$PROGNAME  
-Dfilenet.pe.peorb.pool.min=2 -Dfilenet.pe.peorb.pool.max=5"
```

Windows

Immediately before the following line in `startWebLogic.cmd`:

```
set SAVE_JAVA_OPTIONS=%JAVA_OPTIONS%
```

insert this line (no carriage return):

```
set JAVA_OPTIONS=%JAVA_OPTIONS% -Dprogram.name=%PROGNAME%  
-Dfilenet.pe.peorb.pool.min=2 -Dfilenet.pe.peorb.pool.max=5
```

- Configure JAAS login.

Add one of the following right after the classpath entry for WebLogic.

CAUTION Enter the `jaas_login` entry (bold below) as a single line without line breaks. Do not copy and paste the text from this guide because hidden formatting can cause problems with the entry. Instead, type the entry into the script.

NOTE Your path may be slightly different depending on the version of your client installations, or whether you have chosen a custom path for installation. Verify the location of the file before you enter the path.

Windows

```
@REM Jaas Login configuration setting
```

```
set JAAS_LOGIN=%JAAS_LOGIN% -Djava.security.auth.login.config=
"AE_install_path\CE_API\config\jaas.conf.WebLogic"
```

UNIX

```
# Jaas Login configuration setting
JAAS_LOGIN="{JAAS_LOGIN}" -Djava.security.auth.login.config=
"AE_install_path/CE_API/config/jaas.conf.WebLogic"
```

AIX

```
# Jaas Login configuration setting
JAAS_LOGIN="{JAAS_LOGIN}" -Djava.security.auth.login.config=
"AE_install_path/CE_API/config/jaas.conf.WebLogic"
JAAS_LOGIN="{JAAS_LOGIN}" -
Dlogin.configuration.provider=com.ibm.security.auth.login.ConfigFile
```

- d. Add %JAAS_LOGIN% section as indicated in the examples below in **bold**.

Windows - in the WLS_REDIRECT_LOG settings

```
If "%WLS_REDIRECT_LOG%"==" (
    echo Starting WLS with line:
    echo %JAVA_HOME%\bin\java %JAVA_VM% %MEM_ARGS% %JAVA_OPTIONS% %JAAS_LOGIN% -
    -Dweblogic.Name=%SERVER_NAME% -
    Djava.security.policy=%WL_HOME%\server\lib\weblogic.policy %PROXY_SETTINGS%
    %SERVER_CLASS%
    %JAVA_HOME%\bin\java %JAVA_VM% %MEM_ARGS% %JAVA_OPTIONS% %JAAS_LOGIN% -
    Dweblogic.Name=%SERVER_NAME% -Dweblogic.management.username=%WLS_USER% -
    Dweblogic.management.password=%WLS_PW% -
    Djava.security.policy=%WL_HOME%\server\lib\weblogic.policy %PROXY_SETTINGS%
    %SERVER_CLASS%
) else (
    echo Redirecting output from WLS window to %WLS_REDIRECT_LOG%
    %JAVA_HOME%\bin\java %JAVA_VM% %MEM_ARGS% %JAVA_OPTIONS% %JAAS_LOGIN% -
    Dweblogic.Name=%SERVER_NAME% -Dweblogic.management.username=%WLS_USER% -
    Dweblogic.management.password=%WLS_PW% -
    Djava.security.policy=%WL_HOME%\server\lib\weblogic.policy %PROXY_SETTINGS%
    %SERVER_CLASS% >"%WLS_REDIRECT_LOG%" 2>&1
)
```

UNIX - in the WLS_REDIRECT_LOG settings

```
{JAVA_HOME}/bin/java {JAVA_VM} -version

if [ "${WLS_REDIRECT_LOG}" = "" ] ; then
    echo "Starting WLS with line:"
    echo "${JAVA_HOME}/bin/java {JAVA_VM} {MEM_ARGS} {JAVA_OPTIONS} -
    Dweblogic.Name=${SERVER_
    NAME} -Djava.security.policy=${WL_HOME}/server/lib/weblogic.policy
    ${PROXY_SETTINGS} ${SERVER_CLASS}
    )"
    {JAVA_HOME}/bin/java {JAVA_VM} {MEM_ARGS} {JAVA_OPTIONS}
    {JAAS_LOGIN} -Dweblogic.Name=${S
    ERVER_NAME} -Djava.security.policy=${WL_HOME}/server/lib/weblogic.policy
    ${PROXY_SETTINGS} ${SERVER_
    CLASS}
else
    echo "Redirecting output from WLS window to ${WLS_REDIRECT_LOG}"
    {JAVA_HOME}/bin/java {JAVA_VM} {MEM_ARGS} {JAVA_OPTIONS}
    {JAAS_LOGIN} -Dweblogic.Name=${S
    ERVER_NAME} -Djava.security.policy=${WL_HOME}/server/lib/weblogic.policy
    ${PROXY_SETTINGS} ${SERVER_
    CLASS} >"${WLS_REDIRECT_LOG}" 2>&1
fi
```

3. Save and close the server startup script.

To configure Application Engine (WebLogic)

1. (If you selected Container-Managed Authentication during the installation) Enable trust between WebLogic domains for the Content Engine domain and the Application Engine domain.

Do the following on both the Content Engine application server and the Application Engine application server.

- a. In the WebLogic Administration Console, in the security settings, enter a password for the domain. You must enter the same password for both the Content Engine domain and Application Engine domain.
 - b. Save your changes.
 - c. Restart the server if needed.
 - d. Repeat this procedure in each domain for which you want to enable trust.
2. (If you selected Container-Managed Authentication during the installation) Configure LDAP settings on Application Engine to exactly match the Content Engine settings.

Configure the LDAP provider to exactly match the settings from the Content Engine server.

- Group Base DN:
 - User Name Attribute:
 - Port:
 - User Base DN:
 - Principal:
 - Credential:
 - Confirm Credential:
 - Host:
 - User From Name Filter:
 - Group From Name Filter:
- b. Restart WebLogic.
3. Set permissions for the user running the application server.

If the user that will be running the application server is different from the user that installed Application Engine, you must give the user read/write permissions on the folder where you installed AE (*AE_install_path*).

4. Continue with [“To enable passing user credentials to client applications \(WebLogic\)” on page 242.](#)

To enable passing user credentials to client applications (WebLogic)

Perform this procedure to enable passing user credentials between Application Engine and its client applications such as WebDAV and Application Integration.

CAUTION If you do not make this change to `config.xml`, then end users will be prompted to enter their user name and password to complete any client operations, such as adding a document.

1. Stop the WebLogic server.
2. Make a backup copy of `config.xml` located in deployment directory.

For example:

`BEA_home/bea/user_projects/domains/domain_name/config/config.xml`

3. Edit `config.xml`.

CAUTION The `enforce-valid-basic-auth-credentials` entry should be entered as a single line without line breaks.

- a. Locate the `<security-configuration>` section and add the following line to the end of the section, just before the `</security-configuration>` tag:

```
<enforce-valid-basic-auth-credentials>>false</enforce-valid-basic-auth-credentials>
```

- b. Save your changes to `config.xml` and close the file.
4. Restart WebLogic.
5. Deploy the Workplace application. See [“Deploy Application Engine \(WebLogic\)” on page 249](#).

Task 5c: Configure Application Engine (JBoss)

This topic covers the configuration of your Application Engine application (Workplace) on JBoss. Perform the following high-level steps in the order listed, using the referenced detailed procedures for each step.

To modify the application server startup script

1. Stop JBoss if it is running.
2. Make a backup copy of the application server startup script.

UNIX

```
run.sh
```

Windows

```
run.bat
```

3. Edit the application server startup script Java settings.
 - a. Add a line to specify the path to the JDK provided by JBoss, as shown in the following example (Windows):

```
set JAVA_HOME=C:\Program Files\Java\jdk1.5.0_06
```

NOTE If your JDK is different from version 1.5.0, substitute your version for the one listed above.

- b. Update the JAVA_OPTS memory settings.

Adjusting this setting prevents the application server from running out of memory, a condition in which users would not be able to log in to Workplace.

In the `JAVA_OPTS` line, change the `-Xms` and `-Xmx` values (**bold**) for your configuration.

Example (Windows):

```
set JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx512m
```

Refer to your application server vendor's recommendation for Initial and Maximum heap size values. For IBM specific recommendations, see the *IBM FileNet P8 Platform Performance Tuning Guide*. To download this guide from the IBM support page, see ["Access IBM FileNet documentation, compatibility matrices, and fix packs" on page 20](#).

- c. If your application server uses the IBM JVM, edit the `JAVA_OPTS` variable in the startup script immediately after the line in the previous sub-step. This `JAVA_OPTS` edit improves performance.

UNIX

Find the following line in `run.sh`:

```
JAVA_OPTS="$JAVA_OPTS -Dprogram.name=$PROGNAME"
```

and change it to this (without a carriage return):

```
JAVA_OPTS="$JAVA_OPTS -Dprogram.name=$PROGNAME
-DfileNet.pe.peorb.pool.min=2 -DfileNet.pe.peorb.pool.max=5"
```

Windows

Find the following line in run.bat:

```
set JAVA_OPTS=%JAVA_OPTS% -Dprogram.name=%PROGNAME%
```

and change it to this (without a carriage return):

```
set JAVA_OPTS=%JAVA_OPTS% -Dprogram.name=%PROGNAME%
-DfileNet.pe.peorb.pool.min=2 -DfileNet.pe.peorb.pool.max=5
```

d. Save your edits.

4. Configure JAAS login.

Add one of the following right after the "\$JAVA" \$JAVA_OPTS (UNIX) or "%JAVA%" %JAVA_OPTS (Windows) entry in the startup script.

CAUTION Enter the jaas_login entry (bold below) as a single line without line breaks. Do not copy and paste the text from this guide because hidden formatting can cause problems with the entry. Instead, type the entry into the script.

NOTE Your path may be slightly different depending on the version of your client installations, or whether you have chosen a custom path for installation. Verify the location of the file before you enter the path.

UNIX

```
"$JAVA" $JAVA_OPTS -Djava.security.auth.login.config="/opt/FileNet/AE/CE_API/
config/jaas.conf.JBoss" "-Djava.endorsed.dirs=$JBoss_ENDORSED_DIRS" -classpath
"$JBoss_CLASSPATH" org.jboss.Main $@
```

Windows

```
"%JAVA%" %JAVA_OPTS% "-Djava.security.auth.login.config=C:\Program
Files\FileNet\AE\CE_API\config\jaas.conf.JBoss" "-
Djava.endorsed.dirs=%JBoss_ENDORSED_DIRS%" -classpath "%JBoss_CLASSPATH%"
org.jboss.Main %*
```

5. Save and close the server startup script.

6. Configure LDAP settings on Application Engine to exactly match the Content Engine settings.

- On the Application Engine server, open login-config.xml, located in *JBoss_home/server/server_name/conf*, for editing.
- Set the <application-policy name="FileNet"> entry identical to the corresponding entry in the login-config.xml file on the Content Engine server.
- Set the <application-policy name="FileNetP8Engine"> entry identical to the corresponding entry in the login-config.xml file on the Content Engine server.
- Save changes to the login-config.xml file on the Application Engine server.
- Restart JBoss.

7. Set permissions for the user running the application server.

NOTE On Windows, the following is only required for NTFS formatted partitions

If the user that will be running the application server is different from the user that installed Application Engine, you must give the user read/write permissions on the folder where you installed Application Engine (*AE_install_path*).

8. (Optional) Disable JBoss logging.

In development mode, JBoss creates a large number of HTTP Access, "INFO", "DEBUG" and "TRACE" log messages. This can cause unexpected behavior in the deployed IBM FileNet software. Using the following procedure, you can limit this type of excessive JBoss logging.

NOTE When logging is disabled, error messages will still be displayed in the JBoss console.

- a. Edit the `log4j.xml` file (*JBoss_home/server/server_name/conf/log4j.xml*).
 - i. Change all threshold values and priority values from "INFO", "DEBUG", or "TRACE" to "ERROR".
 - ii. Delete or comment out the "Preserve messages in a local file" to turn off the server log.
- b. To turn off HTTP access logging, open `jboss-service.xml` with a text editor and delete or comment out the "Access logger" section.

Location of `jboss-service.xml`:

JBoss_Home/server/server_name/deploy/jbossweb-tomcat55.sar/META-INF

- c. Open `web.xml` and change the `logVerbosityLevel` to "FATAL".

Location of `web.xml`:

JBoss_Home/server/server_name/deploy/jbossweb-tomcat55.sar/conf

- d. Restart the JBoss server.

9. Deploy the Workplace application. See ["Deploy Application Engine \(JBoss\)" on page 251](#).

Task 6a: Deploy Application Engine (WebSphere)

This topic covers the deployment and start of your Application Engine application (Workplace) on WebSphere.

To recreate the WAR or EAR file

Any time that you make changes to files in the `/Workplace` directory, such as changes to `web.xml` for container-managed authentication, SSO support, or any other edits, you must recreate the WAR or EAR file and redeploy your changes.

NOTE Before recreating the EAR file, you must also recreate the WAR file.

- If you will be deploying from a WAR or an EAR file.
 - a. Verify that all modified `/Workplace` directory files have been saved.
 - b. Recreate the `app_engine.war` file by running `create_app_engine_war.sh` (UNIX) or `create_app_engine_war.bat` (Windows) from the following location:
- If you will be deploying from an EAR file.
 - a. Verify that a newly recreated `app_engine.war` file exists.
 - b. Recreate the `app_engine.ear` file by running `create_app_engine_ear.sh` (UNIX) or `create_app_engine_ear.bat` (Windows) from the following location:

```
AE_install_path/deploy/
```

```
AE_install_path/deploy/
```

To deploy Application Engine

1. Log on to the WebSphere administrative console.
2. Navigate to the dialog for installing a new application.

WebSphere 6.1

Expand Applications > Install New Application.

WebSphere 7.0

Expand Applications > New Application > New Enterprise Application.

3. Select the file to deploy.
 - (If the administrative console is running *locally*) Select **Local Path** and enter or browse to the location of the `app_engine.war` or `app_engine.ear` file created by the installation program (see below for the default path). Do not enter the machine name.
 - (If the administrative console is *remote*) Select **Server path** and enter the fully-qualified pathname to the `app_engine.war` or `app_engine.ear` file. Do not enter the machine name.

```
AE_install_path/deploy
```

4. (WebSphere 6.1) If you are deploying a WAR file, enter the context root.

Enter `Workplace` and click **Next** to proceed to deploying a new application.

NOTE The context root is the name of the application you log in to using the web interface, such as:

```
http://ApplicationEngineServerName:port#/Context_Root.
```

5. Complete the dialogs for installing a new application, using the following settings:

Application name: `Workplace`, or the name you chose to call the application.

WebServer: The server you are planning to use. Verify that your application name is selected and associated with the correct WebServer.

virtual host: Choose the `default_host`.

(WebSphere 7.0) context root: `Workplace`

6. Save your configuration.
7. Configure the Classloader settings and change the polling interval to a number appropriate for your environment.

Change Classloader order to have the classes loaded with parent classloader last.

NOTE Do this only for the specific web application. Do not change the similar settings for the entire application server.

8. In the Manage Modules area, configure the Web Module Classloader setting.

Change Classloader order to have the classes loaded with parent classloader last.

NOTE Do this only for the specific web application. Do not change the similar settings for the entire application server.

9. (WebSphere 6.1) If you are using container-managed authentication, navigate to Enterprise Applications > Workplace > Map security roles to users/groups, and verify that the **All Authenticated** column is checked for the “All Authenticated” role.
10. (WebSphere 7.0) If you are using container-managed authentication, navigate to Enterprise Applications > Workplace > Security roles to user/group mapping. Select the “All authenticated” role and map it to “All Authenticated in Applications realm”.
11. Set permissions for the user running the application server.

The user that will be running the application server must have read/write permissions on the following (default) folders:

```
WAS_HOME/profiles/default/installedApps/node_name/app_engine_war.ear/  
app_engine.war
```

```
AE_install_path
```

12. Save all your changes.

13. Stop and restart WebSphere.

NOTE To troubleshoot the deployment, check the following log:

```
WAS_install_path/AppServer/profiles/profile_name/logs/server_name/  
SystemOut.log
```

14. Start Workplace (or whatever you named your application) from the administrative console.

Task 6b: Deploy Application Engine (WebLogic)

This topic covers the deployment of your Application Engine application (Workplace) on WebLogic.

To recreate the WAR or EAR file

Any time that you make changes to files in the `/Workplace` directory, such as changes to `web.xml` for container-managed authentication, SSO support, or any other edits, you must recreate the WAR or EAR file and redeploy your changes.

NOTE Before recreating the EAR file, you must also recreate the WAR file.

- If you will be deploying from a WAR file.
 - a. Verify that all modified `/Workplace` directory files have been saved.
 - b. Recreate the `app_engine.war` file by running `create_app_engine_war.sh` (UNIX) or `create_app_engine_war.bat` (Windows) from the following location:
- If you will be deploying from an EAR file.
 - a. Verify that a newly recreated `app_engine.war` file exists.
 - b. Recreate the `app_engine.ear` file by running `create_app_engine_ear.sh` (UNIX) or `create_app_engine_ear.bat` (Windows) from the following location:

```
AE_install_path/deploy/
```

```
AE_install_path/deploy/
```

To deploy as “Workplace” or custom name using a WAR file

Perform this step only if you are using a WAR file for deployment, and you want to use “Workplace” or a custom name for the context root of the application. The context root is part of the URI that end users enter to access Workplace. By default, when you deploy from a WAR file, the context root is the first part of the WAR filename.

Rename the `app_engine.war` file to reflect the name you want to use using the format `Application Name.war`.

Example:

The default `app_engine.war` will generate the following context root:

```
http://server_name:port#/app_engine
```

Renaming the WAR file `Workplace.war` will generate the following context root:

```
http://server_name:port#/Workplace
```

CAUTION You must rename the WAR file every time you regenerate it. The `create_app_engine_war.sh/.bat` script will by default create a file with the name `app_engine.war`.

To deploy Application Engine

1. From the WebLogic Administration Console, navigate to the domain you initially created for the Application Engine.
2. Prepare the WebLogic Administration Console to deploy the application.
3. Choose whether to deploy from an exploded folder (*AE_install_path*) or from the WAR or EAR file (default: *app_engine.war* or *app_engine.ear* in *AE_install_path/deploy*).
4. Accept the defaults for the deployment, except for the name for the deployment. Use “Workplace” instead of “appengine”.
5. Finish the deployment, and save and activate your changes.

NOTE To verify that the deployment was successful, expand **Web Applications**. The web application Workplace will be listed.

NOTE To troubleshoot the deployment, check the following log:

```
WLS_install_path/user_projects/domains/domain_name/servers/server_name/  
logs/server_name.log
```

6. After deployment is complete, start Workplace (or your custom application name) in the WebLogic Administration Console.

Task 6c: Deploy Application Engine (JBoss)

This topic covers the deployment and start of your Application Engine application (Workplace) on JBoss.

To recreate the WAR or EAR file

Any time that you make changes to files in the `/Workplace` directory, such as changes to `web.xml`, you must recreate the WAR or EAR file and redeploy your changes.

NOTE Before recreating the EAR file, you must also recreate the WAR file.

- If you will be deploying from a WAR file.
 - a. Verify that all modified `/Workplace` directory files have been saved.
 - b. Recreate the `app_engine.war` file by running `create_app_engine_war.sh` (UNIX) or `create_app_engine_war.bat` (Windows) from the following location:

```
AE_install_path/deploy/
```

- If you will be deploying from an EAR file.
 - a. Verify that a newly recreated `app_engine.war` file exists.
 - b. Recreate the `app_engine.ear` file by running `create_app_engine_ear.sh` (UNIX) or `create_app_engine_ear.bat` (Windows) from the following location:

```
AE_install_path/deploy/
```

To deploy as “Workplace” or custom name using a WAR file

Perform this step only if you are using a WAR file for deployment, and you want to use “Workplace” or a custom name for the context root of the application. The context root is part of the URI that end users type to access Workplace. By default, when you deploy from a WAR file, the context root is the first part of the WAR filename.

Rename the `app_engine.war` file to reflect the name you want to use using the format *Application Name.war*.

Example:

The default `app_engine.war` will generate the following context root:

```
http://server_name:port#/app_engine
```

Renaming the WAR file `Workplace.war` will generate the following context root:

```
http://server_name:port#/Workplace
```

CAUTION You must rename the WAR file every time you regenerate it. The `create_app_engine_war.sh/.bat` script will by default create a file with the name `app_engine.war`.

To deploy and start Application Engine

1. Stop JBoss, if it is running.
2. Deploy the Workplace application:

To deploy from exploded directory

- a. On the JBoss server, copy the `/Workplace` folder from:

```
AE_install_path
```

to:

```
JBOSS_home/server/servername/deploy/
```

- b. Append the extension `.war` to the Workplace folder:

```
JBOSS_home/server/servername/deploy/Workplace.war
```

To deploy from a WAR file

On the JBoss server, copy the `app_engine.war` file from:

```
AE_install_path/deploy
```

to:

```
JBOSS_home/server/servername/deploy/
```

To deploy from an EAR file

On the JBoss server, copy the `app_engine.ear` file from:

```
AE_install_path/deploy
```

to:

```
JBOSS_home/server/servername/deploy/
```

3. Set permissions for the user running the application server.

If the user that will be running the application server is different from the user that installed Application Engine, you must give the user read/write permissions on the following folders:

NOTE For Windows this is only required for NTFS formatted partitions:

```
JBOSS_home/server/default/deploy/app_engine.war/.ear
```

```
AE_install_path
```

4. Start the JBoss application server.
5. Verify that the application deployed successfully.

Verify that the `server.log` file located in `JBOSS_home/server/servername/log` lists deployment of the WAR or EAR file you used.

Configuration and startup tasks

To configure the IBM FileNet P8 Platform components

NOTE You can perform the following configuration and startup tasks listed below in any order.

- “Set Application Engine bootstrap preferences” on page 254.
- “Create a Process Engine isolated region” on page 259.
- “Create a Process Engine Connection Point” on page 260.
- “Configure the Process Engine connection point for Application Engine” on page 261.
- “Set up Content Engine and client transport SSL security” on page 263.
- “Set up Application Engine SSL security” on page 266.
- “Perform additional configuration tasks” on page 270.
- Familiarize yourself with IBM FileNet P8 system startup and shutdown procedures. See the IBM FileNet P8 help topic [FileNet P8 Administration > Enterprise-wide Administration > Shutdown and Startup](#).

Set Application Engine bootstrap preferences

Bootstrap preferences are a category of site preferences. The first time you sign into Workplace after Application Engine installation, the Bootstrap Preferences page opens.

Bootstrap Preferences

The following six bootstrap preference groups are available the first time you sign in:

- Security Info (required for SSL only)
- User Token Settings
- Preference Settings (required)
- Banner Image
- Application Integration
- Administrator Access Role

For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site Preferences > Bootstrap preferences](#).

Enhanced Timezone Detection

In addition to these settings you can also set the *useEnhancedTimeZoneDetection* parameter to accurately detect a client browser's time zone. This setting cannot be modified through the Site Preferences page. To enable this feature you must manually modify the `bootstrap.properties` file. For more information, see the IBM FileNet P8 help topic [FileNet P8 Administration > Application Engine Administration > Key configuration files and logs > bootstrap.properties](#).

NOTES

- By successfully signing in to Workplace and saving the bootstrap preferences, you are verifying the Application Engine's basic functionality such as user authentication as well as communication and storing of data in Content Engine.
- In addition to the preferences covered in this topic, more preferences can be set for the Workplace application using Workplace Site Preferences. For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences](#).
- After the initial bootstrap configuration, users with the Application Engine Administrators role can change any of these preferences by signing into Workplace and navigating to Admin > Site Preferences > Bootstrap.
- When you access the bootstrap preference page via the Site Preferences application, an additional preference, **Guest info** (to allow guest sign ins), is also available.
- In a web farm/clustered environment, all Application Engines share site preferences by using the same `bootstrap.properties` file. For more information, see the *IBM FileNet P8 Platform High Availability Technical Notice*. To download this guide from the IBM support page, see ["Access IBM FileNet documentation, compatibility matrices, and fix packs" on page 20](#).

- Bootstrap properties are stored in a separate file from other site preference. The default location for this file, `bootstrap.properties`, is:
`AE_install_path/FileNet/Config/AE`
- (New installations only) To allow users to create workflows subscriptions, you *must* configure the PWDesigner access role. For more information, see [“\(New installations only\) To enable user access to the Workflow Subscription Wizard” on page 258](#).

To set the bootstrap properties on first login

For information on parameter values, see the Installation and upgrade worksheet, described in [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the Data > Filter > AutoFilter command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the Application Engine installation program:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select AE bootstrap preferences.
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

1. Sign in to Workplace:

- a. On any computer, open a browser and type:

```
http://ApplicationEngineServerName:port#/Workplace
```

NOTE *ApplicationEngineServerName* cannot be 'localhost' or an IP address.

- b. Enter a user name and password, and then click **Sign in**. The Bootstrap Preferences page opens.

NOTE The user who initially logs in and sets the bootstrap preferences is automatically added to the Application Engine Administrators role. For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences > Access Roles preferences](#).

2. Enter security info (required for SSL only).

- a. Enter the SSL Host and Port information for the SSL server.
- b. Enter the Java Server HTTP port.

Use the Security info preference to redirect sign-ins through a Secure Socket Layer (SSL) server and to identify a remote Java server. This encrypts the user IDs and passwords when they travel over the network. See [“Set up Application Engine SSL security” on page 266](#) for instructions on setting up SSL security for one or more Application Engines.

CAUTION Once you've configured SSL, the Site Preferences application also runs under SSL to protect the guest account's user ID and password. This means that when you run Site Preferences on an unsecured server that redirects sign-ins to an SSL server, you will be editing the Bootstrap preferences of the SSL server (stored in the `bootstrap.properties` file).

This does not affect the General, Object Store, and Shortcut preferences, which are retrieved from the preferences file saved in the object store.

3. Configure user token settings.

User Tokens are used by IBM FileNet P8 applications to launch into each other without the need for an additional login.

- a. Select whether or not to create user tokens for your Application Engine (Default: **Yes**).
- b. Select whether or not the application will pick up generated tokens from other applications (Default: **Yes**).
- c. Specify a Token timeout interval (1 - 15 minutes).

4. (Required) Specify preference settings.

Preference settings specify the name of the site preference file, its storage location (object store), and the documentation server URL(if installed). The site preferences file is checked into the object store the first time you log on to Workplace. The site preferences are stored as XML data in this file, <Site Preferences for *Preferences name*>.xml. Use Enterprise Manager to access this file, and navigate to Object Stores > *Object Store location* > Root Folder > Preferences.

NOTE The bootstrap preferences are saved in the `bootstrap.properties` file, and not in the site preferences file.

- a. Select an object store from the **Object store location** choice list. The preferences file will be saved in this object store. Workplace users must have access to this object store.
- b. Enter a preference file name in the **Preferences name** field.
- c. Enter the documentation server URL in the **Documentation server** field.

The format of the URL is:

```
http://DocServerName:port#/ecm_help/
```

where *DocServerName* is the name of your Java application server where the documentation is installed,
port# is the port number,
and *ecm_help* is the root directory of the documentation web site.

NOTE If no documentation URL is specified, the Workplace Help link will default to `http://localhost`.

- d. Enter the ISRA Interface Servlet URL.

For more information, see [“Enable Application Engine to use ISRA” on page 298](#).

5. Set Banner Image.

The banner image is the graphic that appears at the upper left -hand side of the Workplace application pages. If you have a banner image that you would like to use in place of the default, follow this procedure.

- a. Copy the new graphic file to the location of your choice on Application Engine in the `/FileNet/AE/Workplace` folder.

To verify that a single index has been added for Application Name on the site preferences object store

- b. In the Path field, type the path (relative to the /Workplace folder) to the new banner graphic file.
 - c. In the Image Width field, type the width of the image (in pixels).
 - d. In the Image Height field, type the height of the image (in pixels).
6. Configure Application Integration.

Select **No** (default), if you do not want users to be prompted to add an email to an object store each time the email is sent.

Select **Yes**, if you want users prompted to add an email to an object store when the email is sent.

This preference setting only affects Outlook integration.

7. Add Application Engine Administrators.

Add the users and groups that will perform Application Engine administration tasks to the *Application Engine Administrators* role.

NOTES

- The user who initially signs in and sets the bootstrap preferences is automatically added to the Application Engine Administrators role. For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences > Access Roles preferences](#).
- To modify the access roles after the initial bootstrap configuration, users with the Application Engine Administrators role can use the access roles section of the Workplace Site Preferences. Launch Workplace and navigate to Admin > Site Preferences > Access Roles.

8. Click **Apply** to save your bootstrap settings.

To verify that a single index has been added for Application Name on the site preferences object store

To properly index access roles and improve login performance on Application Engine, an index is created for Application Name on the object store that contains the Workplace site preferences. Verify this index setting after you have successfully configured the bootstrap preferences.

1. On Content Engine, launch the Enterprise Manager.
2. In the left pane, expand the **Object Stores** folder.
3. Expand the object store node where your preferences are stored. See “[\(Required\) Specify preference settings.](#)” on page 256 above.
4. Expand **Other Classes** and then **Custom Object**.
5. Right click **Access Role** and select **Properties**.
6. Select the **Property Definitions** tab.
7. Select **Application Name** and click **Edit**.
8. On the General tab of the Application Name Properties, verify that the **Indexed** field shows **Single Indexed**.

- If the **Indexed** field shows **Single Indexed.**, continue at [Step 13](#).
 - If the **Indexed** field shows 'not indexed', continue at [Step 9](#).
9. Click **Set/Remove**.
 10. Select **Set** and then **Single Indexed**.
 11. Click **OK** to set the index.
 12. Click **OK** to apply the change and close the Application Name Properties window.
 13. Click **OK** to close the Access Role Class Properties window.

(New installations only) To enable user access to the Workflow Subscription Wizard

To allow users to create workflows subscriptions, you must configure the PWDesigner access role using the Workplace Site Preferences, and give the users appropriate access rights to the workflow subscriptions classes. You can perform these steps in any order, and you must perform both steps any time you need to add or remove users.

1. Assign users as members of the PWDesigner access role. See the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences > Access Roles preferences](#).
2. Run the security script wizard, and load the `workplacescript.xml` file to add accounts to the Workflow Designer role.

For more information about how to use the Security Script wizard to assign the Workflow Designer role to user or group accounts, see the IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > Content Engine Wizard Help > Security Script](#).

For more information about the `workplacescript.xml` file and how roles are defined in the Enterprise Manager, see the IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > Managing Security > Security Script Wizard](#).

Create a Process Engine isolated region

Process Engine communicates to its database using a connection point. Each connection point is associated with an isolated region. In this task you will create an isolated region. In [“Create a Process Engine Connection Point” on page 260](#) you will define a connection point to this isolated region.

To create a Process Engine isolated region

1. Start Enterprise Manager by double-clicking the FileNet Enterprise Manager SnapIn on the desktop, or by navigating to Start > All Programs > FileNet P8 Platform > Enterprise Manager SnapIn. Log on as a GCD administrator.
2. Connect to the FileNet P8 domain you created in [“Establish the FileNet P8 domain and Global Configuration Data \(GCD\)” on page 109](#).
3. Right-click **PE Region ids > New PE Region ids**.
4. Click **Next** on the Specify a Site screen to select a site named *initial site*.
5. Enter the DNS name for the Process Engine server.
6. Enter the region ID.
7. Modify the communication port if needed. This communication port must match that entered in the Process Task Manager for the communication port in [“Configure Process Task Manager” on page 201](#).
8. Click **Next** when done.
9. Enter the password for the isolated region. This password must match that entered in the Process Task Manager for the isolated region in [“Configure Process Task Manager” on page 201](#).
10. Click **OK** on the Confirmation Window.
11. Click **Finish** to finish create a new region for Process Engine.

Create a Process Engine Connection Point

A connection point identifies a specific isolated region of the workflow database, and gives it a name that workflow-related applications use to access the region. Follow these procedures to create a connection point.

To create a Process Engine connection point

1. Start Enterprise Manager by double-clicking the FileNet Enterprise Manager SnapIn on the desktop, or by navigating to Start > All Programs > FileNet P8 Platform > Enterprise Manager SnapIn. Log on as a GCD administrator.
2. Connect to the FileNet P8 domain you created in [“Establish the FileNet P8 domain and Global Configuration Data \(GCD\)” on page 109](#).
3. Right-click **PE Connection Points** > **New PE Connection Points**.
4. Enter a Process Engine Connection Point name and click **Next**.
NOTE Process Engine Connection Point names must not contain whitespace characters.
5. Choose the region which is created in [“Create a Process Engine isolated region” on page 259](#), and click **Next**.
6. Click **Finish** to finish creating the Connection Point.
7. Click **OK**.

Configure the Process Engine connection point for Application Engine

Before users can access tasks and work items from Workplace, you must configure the connection point on the Application Engine. Make sure that you have already completed these Tasks:

- “Create a Process Engine isolated region” on page 259
- “Create a Process Engine Connection Point” on page 260

To configure the connection point

1. Sign in to Workplace as an Application Engine Administrator:
 - a. On any computer, open a browser and navigate to:


```
http://ApplicationEngineServerName:port#/Workplace
```
 - b. Sign in using the same account that you used to set the bootstrap preferences.
2. Click **Admin**.
3. Click **Site Preferences**.
4. Under General Settings > Tasks, select a **Process Engine Connection Point** from the drop-down list.
5. Click **Apply**.
6. Click **Exit**.

CAUTION Performing [Step 7](#) in an existing environment will destroy all data in the existing region.

7. (For new installations only) Initialize the isolated region.
 - a. Click **Admin**.
 - b. Click **Process Configuration Console**.

NOTE If your computer does not have the appropriate Java Runtime Environment (JRE) installed, you will be prompted to download the JRE at this point; follow the prompts to complete the download. During the installation process, click the **Browser** tab and enter the following settings:

 - Clear the Internet Explorer option.
 - If you will be using Netscape 6.0, select the Netscape option.
 - c. Right-click the **icon** or **name** of the isolated region you want to initialize, and select **Connect** from the context menu.
 - d. Click **Action**.

- e. Click **Initialize Isolated Region**.
 - f. Click **Yes** at the prompt asking if you want to continue.
 - g. Close the Process Configuration Console.
8. In Workplace, click **Tasks** to confirm that Application Engine is communicating with Process Engine.
 9. Sign out of Workplace.

Set up Content Engine and client transport SSL security

Configuring SSL enables secure communications between the Content Engine and the directory service, as well as between Content Engine clients and the Content Engine server. In addition, setting up Content Engine SSL provides secure authentication for Process Engine.

CAUTION IBM strongly recommends enabling SSL for the Content Engine and Process Engine web services. Authentication over these two web services is usually performed by providing username and password credentials. If these web services are not configured to run over an SSL connection, clear text passwords will be sent across the network. (However, this is not true when Kerberos-based authentication is used. In the P8 4.5 release, Kerberos authentication is available only for the Content Engine web service.) The option not to use SSL over these two web services is provided primarily for development systems or other non-production systems where the security provided by SSL may not be required.

For access to the Content Engine through the EJB transport (IIOP or T3 protocol), an SSL connection is necessary to provide privacy for data sent across the network, but user passwords would not be compromised if SSL were not used. While it is preferable to use SSL with the EJB transport (IIOP or T3 protocol), it is not a requirement.

NOTES:

- The Content Engine web service is used:
 - By all clients of the Content Engine 4.5 .NET API
 - By all clients of the Content Engine 4.5 COM Compatibility API (CCL)
 - By the Enterprise Manager tool
 - By the Content Engine 3.5.2 to 4.5.0 Upgrade tool
 - By the Process Engine, when making calls to the Content Engine to retrieve user and group information
 - By the Component Manager, running on the Application Engine, which is an integral component for BPM Process Orchestration framework
 - By customer and 3rd party tools written against the CE 3.5 web service API, including Altien Document Manager and the Sharepoint integration done by Vorsite.
- Certain Java applications (written against the Content Engine 3.5.x Java API or the Content Engine 4.5 Java API) may use the Content Engine web service transport, but typically they would use EJB transport (IIOP or T3 protocol).
- The IBM FileNet Application Engine server will use only the EJB transport to communicate with the Content Engine in the P8 4.5 release.
- The Process Engine web service is used by customer and third-party applications to write runtime applications (typically step processor applications) against the Process Engine. The Process Engine Java API does not make use of the Process Engine web service.

To enable SSL for Content Engine

NOTE In the steps below, a server certificate certificate will be added to the Directory Services server (for authentication). In addition, the CA certificate will be added in two different locations on the Content Engine server (the JDK path location is for authorization). Follow the steps closely to ensure that the proper certificate is added to each of the three locations.

1. Obtain and install a server certificate and a CA certificate on the directory service. These certificates are available from third-party certificate authorities, such as VeriSign, or you can generate your own certificates if you have the necessary certificate management software installed.
2. Enable SSL on the directory service and set the SSL port number. The default SSL port number is 636; however, if you have more than one directory service that is using SSL on the server, you may need to use a non-default port number. See your directory server documentation for instructions.
3. On the Content Engine server, add the CA certificate to the application server keystore, if it does not already contain it.
4. On the Content Engine server, add the CA certificate to the JDK (Java) keystore, if it does not already contain it. You can use the default key store, in [Step a](#), or create a custom location, in [Step b](#).
 - a. To use the JDK default java key store, do the following:
 - i. Determine the java version your application server uses and the JAVA_HOME location.
 - ii. Use the keytool to import the CA certificate to the Java keystore at %JAVA_HOME%\jre\lib\security\cacerts.
 - iii. To improve security, change the default password.
 - b. To use your own key store (rather than the JDK default key store), do the following:
 - i. Add the following system parameters to the Java command line in your application server's startup script:

```
-Djavax.net.ssl.trustStore=path_to_your_keystore_file  
-Djavax.net.ssl.trustStorePassword=password_of_your_keystore
```
 - ii. Use the Java keytool to import the CA certificate to your own keystore.
5. Use Enterprise Manager to enable SSL for Content Engine and set the port number to match the SSL port on the directory server, as described in ["To enable SSL between Enterprise Manager and the directory service" on page 265](#).
6. Obtain another server and CA certificate for the Content Engine.
7. Create a custom identity keystore on the Content Engine server, and add the server certificate to the custom keystore.

8. Using the application server administration tool, enable SSL and point to the custom identity keystore. Directions vary by application server type; see your application server documentation for detailed procedures.

NOTE (WebLogic only) The name in your certificate must match the host name specified in your WebLogic application server. If the name in the certificate is fully qualified (for example, Host1.filenet.com), the same fully qualified host name must appear in the Host field (WebLogic > Authentication Provider > Active Directory tab > Host field).

9. Configure clients to use a particular URL for connecting to Content Engine based on the application server type and the client transport (protocol) type. The following table provides details:

Protocol	SSL	Port	App Server	Sample URL
HTTP	no	7001	WebLogic	http://mycorp.com:7001/wsi/FNCEWS40DIME/
HTTPS	yes	7002	WebLogic	https://mycorp.com:7002/wsi/FNCEWS40DIME/
T3 (IIOP)	no	7001	WebLogic	t3://mycorp.com:7001/FileNet/Engine
T3S (IIOP)	yes	7002	WebLogic	t3s://mycorp.com:7002/FileNet/Engine
HTTP	no	9080	WebSphere	http://mycorp.com:9080/wsi/FNCEWS40DIME/
HTTPS	yes	9403	WebSphere	https://mycorp.com:9403/wsi/FNCEWS40DIME/
IIOP	no	2809	WebSphere	iiop://mycorp.com:2809/FileNetEngine
IIOP	yes	9443	WebSphere	iiop://mycorp.com:9443/FileNetEngine

NOTE The port values in the table above are default values. If you change the port that your application server listens on, you must also change the port number used by the Content Engine client.

To enable SSL between Enterprise Manager and the directory service

1. Launch Enterprise Manager and log on as a GCD administrator.
2. In the tree view, right-click the root node and choose Properties.
3. In the Enterprise Manager Properties dialog box, click the Directory Config. tab, select a directory service, and click **Modify**.
4. In the General tab of the Modify Directory Configuration dialog box, set the Is SSL Enabled parameter to True and modify the port number appropriately.
5. Click **OK** in each open dialog box.

Set up Application Engine SSL security

This topic describes how to configure an Application Engine to direct sign-ins through a Secure Socket Layer (SSL) https connection. It assumes that Application Engine(s) have already been installed.

IBM FileNet Application Engine supports the following methods of configuring an SSL environment:

- Full SSL support - A single Application Engine server, where all of the software is running under SSL.
- One server SSL redirect - One Application Engine server set up to redirect logon attempts on the non-SSL port to the SSL port.
- Two server SSL redirect - Two Application Engine servers, where one is SSL-enabled, and the other redirects users to the SSL-enabled Application Engine server to log on.

To set up full SSL support on a single Application Server

1. Enable SSL on the application server that runs Application Engine (see your SSL documentation).
2. Test the SSL connection by signing into Workplace using one of the following URLs:

`https://Application_Engine_server_name:SSL_port/Workplace`

The entire sign-in process will be handled by the SSL-enabled host.

For more information about SSL port numbers, see “IBM FileNet P8 Port Numbers” in the *Plan and Prepare Your Environment for IBM FileNet P8 Platform* guide.

To set up SSL redirect on a single Application Engine server

1. Enable SSL on the application server that runs Application Engine (see your SSL documentation).
2. Sign in to Workplace:
 - a. On any computer, open a browser and type the following URL address:

`http://Application_Engine_server_name:port#/Workplace`
 - b. Sign in as a user with Application Engine Administrator access role privileges. For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences > Access Roles preferences](#).
3. Set bootstrap preferences:
 - a. Navigate to Admin Site Preferences > Bootstrap.
 - b. Set the Security info Site Preference SSL Host:Port to identify the alias host name and port number.

Use the IP address of the Application Engine server for the SSL Host entry.

For more information, see “[Enter security info \(required for SSL only\)](#).” on page 255.

- c. Click **Apply** to save your bootstrap settings.
4. Update the base URL:
 - a. Navigate to Admin > Site Preferences > Refresh.
 - b. Enter the Workplace Base URL value in the provided field. The URL must contain a valid host name, and not contain "localhost" or an IP number. For example, `http://myserver:7001/Workplace`
 For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences > Refresh preferences](#).
 - c. Click **Refresh** to update the base URL.
 - d. Click **Exit** to close Site Preferences.
5. Sign out of Workplace, and close your browser.
6. Test the SSL connection by signing into Workplace using the following URL:

`http://Application_Engine_server_name:non-SSL_port/Workplace`

NOTE You will be redirected to the SSL-enabled port for sign in, then back to the non-SSL enabled port after sign-in is complete. Before sign-in, you should receive a warning that you are accessing pages over a secure connection (unless you turned this dialog box off), and then Workplace will open.

To set up SSL redirect on two Application Engine servers

1. Install Application Engine on both computers so that both Application Engines use the same `bootstrap.properties` file and site preferences file (the Setup program will prompt you for a shared location).

During setup of the first Application Engine, create a share on the folder where the `bootstrap.properties` file is installed (the `\WEB-INF` folder). Then during setup of the second Application Engine, specify the shared location from the first installation. The `bootstrap.properties` file must already exist when specifying a shared location. See "Setup WebLogic clusters" or "Setup WebSphere clones" in the *IBM FileNet P8 Platform High Availability Technical Notice* for specific instructions. To download this guide from the IBM support page, see ["Access IBM FileNet documentation, compatibility matrices, and fix packs" on page 20](#).

CAUTION The system clocks on the two Application Engine servers must be synchronized to within the Token time-out interval. For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences > Bootstrap Preferences > User token settings](#).

2. Copy the `UTCryptokeyFile.properties` file.

For SSL redirect to work, each Application Engine must use the same User Token cryptographic key file.

After installing the second Application Engine, copy the `UTCryptoKeyFile.properties` file from the first Application Engine server to the same location on the second Application Engine server.

NOTE IBM recommends copying the file over a secure link.

3. Enable SSL on the application server that you are using for the SSL-enabled Application Engine (see your SSL documentation).
4. Sign in to Workplace on the non-SSL enabled Application Engine.
 - a. On any computer, open a browser and type:


```
http://ApplicationEngineServerName:port#/Workplace
```
 - b. Sign in as a user with Application Engine Administrator access role privileges. For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences > Access Roles preferences](#).
5. Set bootstrap preferences:
 - a. Navigate to Admin > Site Preferences > Bootstrap.
 - b. Set the Security info Site Preference SSL Host:Port to identify the alias host name and port number.

For more information, see ["Enter security info \(required for SSL only\)." on page 255](#).
 - c. Click **Apply** to save your bootstrap settings.
6. Update the base URL:
 - a. Navigate to Admin > Site Preferences > Refresh.
 - b. Enter the Workplace Base URL value in the provided field. The URL must contain a valid host name, and not contain localhost or an IP number. For example, `http://myserver:7001/Workplace`

For more information, see the IBM FileNet P8 help topic [User Help > Actions, preferences, and tools > Site preferences > Refresh preferences](#).
 - c. Click **Refresh** to update the base URL.
 - d. Click **Exit** to close Site Preferences.
7. Sign out of Workplace, and close your browser.
8. Test the SSL connection by signing into Workplace using the following URL:

```
http://Application_Engine_server_name:non-SSL port#/Workplace
```

NOTE You will be redirected to the SSL-enabled server for sign in, then back to the non-SSL enabled server after sign-in is complete. Before sign-in, you should receive a warning that you are accessing pages over a secure connection (unless you turned this dialog box off), and then Workplace will open.

Using Java Applets in an SSL Environment

If you are using a Java applet in an SSL environment, you may experience an SSLHandshakeException because the appropriate certificate does not exist on your computer. Follow the instructions in the the IBM FileNet P8 help topic [User Help > Using Workplace > Basics > Use Java applets](#) to resolve this issue.

Perform additional configuration tasks

Once you have completed the Installation Tasks, your core IBM FileNet P8 system will be up and running. Below is a list of additional configuration tasks you should complete (or at least review) to prepare the system for general use. Except where noted, the links go to the IBM FileNet P8 Help, and start from the Contents panel in:

<Documentation URL, in the form http://webserver:port#/ecm_help/_start_here.htm

- Configure Content Federation Services for Image Services Guidelines. Refer to the *IBM FileNet P8 Content Federation Services for Image Services Guidelines*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).
- Configure Application Engine to set the file types you want to open in a browser window rather than using the Image Viewer. Refer to [FileNet P8 Administration > Application Engine Administration > Key configuration files and logs > content_redir.properties file](#).
- Set site preferences for the Workplace application. Refer to [User Help > Actions, preferences, and tools > Site preferences](#).
- Design searches and/or search templates for Workplace users. Refer to [User Help > Actions, preferences, and tools > Tools > Search Designer > About Search Designer](#).
- Design publishing templates for Workplace users. Refer to [User Help > Actions, preferences, and tools > Tools > Publishing Designer > About Publishing Designer](#).
- Configure security for publishing. Refer to [User Help > Actions, preferences, and tools > Tools > Publishing Designer > Security > Specify publication document security](#).
- Configure automatic workflow launch. Refer to [FileNet P8 Administration > Content Engine Administration > Events and subscriptions > Concepts: workflow subscriptions](#).
- Create and configure the object stores that will contain business objects, folders, documents, workflow definitions, searches, and other objects. Refer to [FileNet P8 Administration > Content Engine Administration > Object stores > How to... > Create object store](#).
- Define document classes and folders and set security for each class. Refer to [FileNet P8 Administration > Content Engine Administration > Classes > Concepts](#).
- Review and, if necessary, edit the security of the network shared folders containing any file stores created for the object store. Refer to [FileNet P8 Administration > Content Engine Administration > Content storage > File storage areas](#).
- Configure Process Engine for automatic startup. Refer to [FileNet P8 Administration > Enterprise-wide Administration > Process Task Manager > Process Engine > Process Service > Start and stop Process Service > Configure the Process Service for automatic startup \(Windows\)](#).
- Configure email notification. Refer to [FileNet P8 Administration > Process Engine Administration > Workflow administration tasks > Coordinating workflow design > Email notification](#).

NOTE Process Engine supports localized email notification. For details on configuring this, see the *IBM FileNet P8 Non-English Support Guide*. To download this document from the IBM FileNet support Web site, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

- Set Process Engine runtime options. Refer to [User Help > Integrating workflow > Process Configuration Console > VWServices > View or modify VWService properties > Set runtime options](#).
- Set the default date/time mask for the Process Service. Refer to [Process Engine > Process Task Manager > Process Service > Configuring Process Service > General properties](#).
- Create content cache area. Refer to [FileNet P8 Administration > Content Engine Administration > Content storage > Content cache areas > How to... > Create content cache](#).
- Create additional authentication realms. Refer to [FileNet P8 Administration > Enterprise-wide Administration > FileNet P8 Security > How to > Configure for multiple realms](#).
- Define additional isolated regions. Refer to [User Help > Integrating workflow > Process Configuration Console > Isolated regions](#).
- For each isolated region:
 - Define workflows. Refer to [User Help > Integrating workflow > Process Designer](#).
 - Configure event logging options. Refer to [User Help > Integrating workflow > Process Configuration Console > Isolated regions > View or modify isolated region properties > Configure event logging options](#).
 - Configure step processors. Refer to [User Help > Integrating workflow > Process Configuration Console > Isolated regions > View or modify isolated region properties > Configure custom step processors](#).
 - Define and configure work queues. Refer to [User Help > Integrating workflow > Process Configuration Console > Queues > Configuring work queues](#).
 - Define and configure component queues. Refer to [User Help > Integrating workflow > Process Configuration Console > Queues > Configuring component queues](#).
 - Define and configure workflow rosters. Refer to [User Help > Integrating workflow > Process Configuration Console > Queues > Rosters](#).

Optional installation tasks

To install optional IBM FileNet P8 components

NOTE You can install the additional or optional IBM FileNet P8 components listed below in any order.

- [“Install and Configure IBM FileNet publishing components” on page 273.](#)
- [“Enable the Process Engine Component Integrator” on page 274.](#)
- [“Install an Additional Instance of Enterprise Manager” on page 277.](#)
- [“Configure Tivoli Storage Manager integration with Content Engine” on page 282.](#)
- [“Create additional file storage areas” on page 278.](#)
- [“Install IBM FileNet Deployment Manager” on page 286.](#)
- [“Install Application Integration” on page 288.](#)
- [“Install File Tracker” on page 292.](#)
- [“Deploy multiple Application Engine instances” on page 295.](#)
- [“Enable Application Engine to use ISRA” on page 298.](#)
- [“Install and Configure IBM FileNet System Manager” on page 303.](#)
- [“Modify an Autonomy K2 server configuration” on page 304.](#)
- [“Install the COM compatibility layer \(CCL\)” on page 314.](#)

Install and Configure IBM FileNet publishing components

Install the IBM FileNet Rendition Engine to establish publishing capabilities. For instructions, see the *IBM FileNet Rendition Engine Installation and Upgrade Guide* at [FileNet P8 Documentation > FileNet P8 System Installation > Rendition Engine Installation and Upgrade](#).

Enable the Process Engine Component Integrator

Via the Component Integrator functionality included in the IBM FileNet P8 Platform, a step in a workflow can access properties of documents, folders, and other objects in an object store. Using this functionality requires configuration on both Application Engine and Process Engine servers, as described in this task.

As a post-installation task, you will also have to define workflows that incorporate Content Engine (CE) operations in order to use the out-of-the-box Component Integrator functionality. For further details on defining such workflows, see the IBM FileNet P8 help topic [Steps > Component Steps > General Properties > Using Content Engine \(CE\) operations in a workflow](#).

Once the software is installed, users can extend the out-of-the-box Component Integrator functionality so that a workflow step can interact with an external entity such as a Java object or Java Messaging Service (JMS) messaging system. For further information, see the IBM FileNet P8 help topic [Developing Process Applications > Developing Work Performers / Component Integrator Operations > Developing Component Integrator-Based Workflow Applications](#).

To specify the user name and password for the Java adaptor (on an Application Engine server)

1. Sign in to Workplace.

If you defined the Process Engine Configuration Group on the Security tab of Process Task Manager (when completing [“Configure Process Task Manager” on page 201](#)), you must sign in as a member of either that group or the Process Engine Administrators Group, which was also defined on the Security tab, in order to complete the following steps.

2. In Workplace, click **Admin** and then click **Process Configuration Console**.

NOTE If your computer does not have the appropriate Java Runtime Environment (JRE) installed, you will be prompted to download the JRE at this point; follow the prompts to complete the download. During the installation process, click the **Browser** tab and clear the Internet Explorer option.

For further information about the JRE download, click **Help** in Process Configuration Console, click **Process Reference** on the help page toolbar, and see the IBM FileNet P8 help topic [Concepts > Java Runtime Environment \(JRE\)](#).

3. Select the Isolated Region icon that corresponds to the isolated region you initialized in [“Create a Process Engine isolated region” on page 259](#).
4. Right-click the **CE_Operations** component queue and select **Properties**.
5. On the Adaptor tab of the displayed dialog box, enter a user name and password that will be used for identification and permissions for both Process Engine (PE) and potentially any external systems that will be accessed. By default, the user name and password are set to *Administrator* and *<no password>*, respectively. If you choose to use another user name and password, they must already exist in the directory service.

For additional information about the fields on the Adaptor tab, click the **Help** button. To use the out-of-the-box functionality, it is necessary to modify only the user name and password fields.

6. Click **OK** and commit the changes.

To configure and start the Component Manager (on an Application Engine server)

Execute [Step 1](#) below if Application Engine is configured to use maximum strength encryption. The JRE used to run the Process Task Manager that contains the Component Manager (which uses JDK 1.4.x) must be updated with Unlimited Strength Jurisdiction Policy Files. Otherwise proceed to [Step 2](#) below.

1. Install unlimited strength JAR files.

NOTE Perform this step only if you are using JDK 1.4 or higher and have selected the **Create unlimited strength keys** option in the *Application Engine User Security* and/or *User Token Security* steps of the Application Engine Setup program. Failure to perform the step will cause EncryptionException messages or other errors indicating that a Java Security API provider for Blowfish is not available. The EncryptionException is caused by the wrong versions of (or absence of) required JAR files that provide unlimited strength security policy files in a Sun JDK 1.4 or higher environment.

For more information, see the IBM FileNet P8 help topic [FileNet P8 Administration > Application Engine Administration > Application Engine Security](#).

- a. Obtain the JDK version-specific unlimited strength JAR files, as follows:
 - For the IBM JDK, obtain the IBM unlimited jurisdiction policy files from the IBM web site (<http://www.ibm.com/developerworks/java/jdk/security>).
 - For the Sun JDK, obtain the Sun unlimited strength policy files from the Sun product web site (<http://java.sun.com/j2se/>).

CAUTION Make sure you install JAR files specific to the JDK version you are using.

- b. Install the files into the JRE's `/jre/lib/security` folder by replacing files with the same names.
- c. Restart the application server.

2. Start Process Task Manager on the Application Engine server.

Launch the Process Task Manager by running one of the following command files from the `AE_install_path/FileNet/AE/Router` directory, depending on your operating system:

UNIX

`routercmd.sh`

Windows

`routercmd.bat`

NOTE If the port number assigned to Component Manager conflicts with the port number required by another application or service running on the Application Engine server, then Process Task Manager will not start up as expected. See ["IBM FileNet P8 ports" on page 280](#) for details on how to resolve this condition.

3. Select **Component Manager** in the left pane (also referred to as the feature pane).

To specify connection between Process Engine and Component Manager (on a Process Engine server)

4. Right-click and select **New** to define a new connection point. You will be prompted to enter the Content URI, Service Username, and Service Password to authenticate to the Content Engine server.
5. Enter or modify the component properties as appropriate. For details, see the IBM FileNet P8 help topic [FileNet P8 Administration > Enterprise-wide Administration > Process Task Manager > Application Engine > Component Manager > Configure the Component Manager -> General](#).

NOTE In an environment configured for single sign-on (SSO), do not use the SSO server name in the URL, even if Process Task Manager displays it by default.

6. Click **Start** on the toolbar.

To specify connection between Process Engine and Component Manager (on a Process Engine server)

1. On the Process Engine server, start Process Task Manager as follows, depending on your operating system:

Windows

Select Start > Programs > FileNet P8 Platform > Process Engine > Process Task Manager.

UNIX

Enter the following command on the command line:

```
vwtaskman
```

2. Select Process Engine in the left pane (also referred to as the feature pane).
3. In the Component Manager connection section, select the Server Connections tab.
4. In the Host field, enter the host name of the Application Engine server where Component Manager is running.
5. In the Event Port field, enter the port that the Component Manager listens to for incoming events. The default is 32773. The port number you enter must match the number you entered in [Step 3 of "To configure and start the Component Manager \(on an Application Engine server\)" on page 275](#).

Install an Additional Instance of Enterprise Manager

Do this task only if you want to install an instance of Enterprise Manager in addition to the one you installed in [“Install FileNet Enterprise Manager” on page 34](#).

CAUTION Do not install Enterprise Manager 4.5 or the COM Compatibility Clients API on any machine running the 3.5.x version, at least until the Content Engine 4.5 upgrade is complete. Otherwise, you will no longer be able to run Enterprise Manager 3.5.x against any remaining 3.5.x object stores. You may need to use Enterprise Manager to prepare for upgrading the 3.5.x object stores.

NOTE You can install Enterprise Manager only on a Windows machine, and only using the Windows version of the Content Engine installation media.

To install an additional instance of Enterprise Manager,

1. If you have not already done so, install Microsoft .NET Framework 2.0 and Web Services Enhancements (WSE) 3.0. Enterprise Manager on the Windows machine where you are going to install Enterprise Manager.
2. Do a silent or interactive installation of Enterprise Manager as shown in [“Install FileNet Enterprise Manager” on page 34](#).
3. Install any service packs, fix packs and/or interim fixes required. To determine whether such additional software updates are needed, contact your service representative.

Create additional file storage areas

Perform this task to create additional file storage areas for existing object stores. To create additional fixed storage areas, navigate instead to the IBM FileNet P8 help topic [System Administration > Content Engine Administration > Content storage > Fixed storage areas](#).

Complete the following procedures for each file storage area you want to create.

To create a file storage area

1. Prepare a location for the file storage area, as shown in “Prepare storage areas for object stores” in *Plan and Prepare Your Environment for IBM FileNet P8*, and then continue at [Step 2](#).
2. Start Enterprise Manager.
3. Select a FileNet P8 domain and log on as an administrator of the object store in which you will create a file storage area.
4. Right-click the **Storage Areas node** and then choose **New Storage Area**.
5. When the Create a Storage Area wizard opens, perform the following steps:

In this screen...	Perform this action...
Welcome	Click Next to proceed with creating the storage area.
Specify a site	Select a site with which to associate the storage area, and then click Next .
Name and Describe the Storage Area	<p>Specify values for the following parameters and then click Next.</p> <ul style="list-style-type: none"> • Name Enter a name that is unique within the specified object store. The name is required and must start with a letter. The storage area name can have up to 64 characters (upper or lowercase letters, numbers, spaces, and symbols). When selecting a name for the storage area, ensure that the name does not contain the following characters: asterisk (*), backslash (\), forward slash (/), comma (,), colon (:), semicolon (;), single quote ('), double quote ("), pound sign (#), question mark (?), less than (<), greater than (>), or pipe symbol (). • Description Explain what type of documents the storage area will contain, identify its purpose, or provide other useful information. You can change the default description that mirrors the name. The description can have up to 255 characters and is optional. • Existing Name This window identifies the names of existing storage areas within the specified object store. It can remind you of naming conventions or help you choose a unique name. This list box is not selectable.

In this screen...	Perform this action...
Specify the Storage Area Type	Choose the file storage area type, and then click Next .
Specify File Storage Area Directory	Type, or browse to, the path of the shared directory (on a local or remote Windows or UNIX file server) where you prepared a storage area in Step 1 , and then click Next .

In this screen...	Perform this action...
Select the Size Parameters of the Storage Area	<p>Specify values for the following parameters, and then click Next:</p> <ul style="list-style-type: none"> <li data-bbox="490 403 1421 1012"> <p>• Directory Structure</p> <p>Select Small if you are creating a file storage area for a small development type of system. Select Large if you are creating a file storage area in a production environment. This setting cannot be changed after the storage area is created.</p> <p>Small structures have two directory levels, 23 nodes at each level, for a total of 529 directories at the 2nd level. Content is stored only at the 2nd level.</p> <p>Performance does not appreciably degrade on Windows NTFS file systems as the number of files increases. On UNIX file storage areas on network access devices (NAS), however, the number of files per directory does matter. As a rule of thumb, a small file storage area on such a device should have no more than one million files, or about 2,000 files per directory.</p> <p>Large structures have a third directory level of 23 nodes, for a total of 12,167 directories at the 3rd level. Content is stored only at the 3rd level.</p> <li data-bbox="490 1037 1421 1213"> <p>• Maximum Size</p> <p>Identifies the maximum reserved space (in megabytes) for all content elements in the storage area. For example, if maximum size is 5000 (the default), the storage area does not accept new content elements until the total size is reduced below this size.</p> <li data-bbox="490 1234 1421 1411"> <p>• Maximum Number of Elements</p> <p>Identifies the maximum number of content elements allowed in the storage area. For example, if maximum number is 2500 (the default), the storage area does not accept new content elements until the total number of content elements is reduced below this number.</p> <li data-bbox="490 1432 1421 1713"> <p>• Delete Method</p> <p>Specifies the method used when removing content element files from the storage area. Available options are:</p> <ul style="list-style-type: none"> <li data-bbox="539 1562 938 1591">– Standard -- Deletes the file. <li data-bbox="539 1612 1256 1642">– Destructive -- Fills the file with zeros, then deletes it. <li data-bbox="539 1663 1370 1713">– Purge -- Writes over the file three times with various patterns, then deletes it.

In this screen...	Perform this action...
Specify Storage Policy	<p>Select an option button for a storage policy options, and then click Next:</p> <ul style="list-style-type: none"> • Create Storage Policy Create a storage policy with a similar name as the file storage area directory name and map it to the storage area. Edit the value in the text box as needed. • Map storage area to existing Storage Policies Add this storage area to one or more storage policies. Select the desired storage policies with the check boxes. This option is disabled if there are no available storage policies. • Do not create a new storage policy Do not add the storage area to any storage policies. A warning is displayed if you select this option.
Completing the Create a Storage Area Wizard	<p>This window lists the values you assigned to the newly created storage area. Click Finish.</p> <p>NOTE A document's class specifies where its content is stored.</p>

To verify the file storage area

1. Log on to the machine where Content Engine Server is installed.
2. List the contents of the *fsa1* directory you created or designated on the file server in one of the following procedures:
 - **UNIX** [“To configure a UNIX-based file server” on page 59](#) in *Plan and Prepare Your Environment for IBM FileNet P8*
 - **Windows** [“To configure Windows-based Content Engine Server to talk to a Windows file server via CIFS” on page 61](#) in *Plan and Prepare Your Environment for IBM FileNet P8*
 - **Windows** [“To configure a Windows-based file server for a UNIX client using NFS” on page 60](#) in *Plan and Prepare Your Environment for IBM FileNet P8*
3. Verify that *fsa1* contains an XML file, named *fn_stakefile*, and two subdirectories, *content* and *inbound*.
NOTE On UNIX machines, the *content* and *inbound* subdirectories must be in the same file system.
4. Verify that *fsa1* has the ownership and access permissions you specified.
5. Assign the new storage area as the default storage location for one of your document classes. See the IBM FileNet P8 help topic [System Administration > Content Engine Administration > Content storage > File storage areas](#) for more information.

Configure Tivoli Storage Manager integration with Content Engine

To prepare a Tivoli Storage Manager (TSM) fixed content device and storage area, complete the following procedures:

- “[To create or validate Tivoli Storage Manager properties](#)” on page 282 creates or validates the properties needed for TSM integration with Content Engine
- “[To create a Tivoli Storage Manager fixed content device](#)” on page 283 creates the fixed content device that accesses the DR550 storage system
- “[To create a Tivoli Storage Manager fixed storage area](#)” on page 284 creates the staging area where Content Engine uploads content prior to migrating it to the TSM server and creates the storage area where retention periods are defined.

To create or validate Tivoli Storage Manager properties

1. Log on to the Tivoli Storage Manager console.
2. Run console commands to create or validate the values of the properties shown in the following subsections. These are the properties you will need to specify when creating a TSM fixed content device.

Refer to [System Administration > Content Engine Administration > Content storage > Fixed storage areas > About IBM Tivoli Storage Manager and DR550](#) in the IBM FileNet P8 online help, for additional information on these properties.

Data Retention Protection Flag

Verify whether data retention protection is enabled on your TSM server (that is, the query status) and note the Archive Retention Protection value, which will correspond to the Archive Protection Flag on the fixed content device.

Node Name

Create a node name on the TSM server that is configured to have the proper read/write access to the appropriate server storage and is allowed to make multiple connections to the TSM server. This node name will be used by Content Engine to establish all client connections to the TSM server for a particular fixed content device and corresponds to the fixed content device node name.

PASSEXP

The client node name you created above should have a password associated with it. You can modify the password expiration for client nodes associated with Content Engine to be different from your normal user password expiration.

MAXSESSIONS

The maximum number of simultaneous client sessions to the TSM Server. The DR550 has a hard limit of 100 MAXSESSIONS. So, if not already configured this way, increase the value of this property to its maximum.

TXNGROUPMAX

The number of files transferred as a group between TSM commit points. Content Engine commits all content elements for a document in one TSM transaction. If your documents can contain a large number of content elements, consider increasing this parameter on the TSM server. The typical default for this parameter is 256 with a maximum allowed value of 65000.

Management Classes

Management classes are policies that determine how TSM manages objects, including the object retention policy. Create the management classes as described in the [System Administration > Content Engine Administration > Content storage > Fixed storage areas > About IBM Tivoli Storage Manager and DR550](#) in the IBM FileNet P8 online help.

To create a Tivoli Storage Manager fixed content device

1. Log on to FileNet Enterprise Manager and start the New Fixed Content Device wizard.
2. Choose the IBM Tivoli Storage Manager fixed content device type.
3. Provide the parameter values requested in the wizard. Refer to [System Administration > Content Engine Administration > Content storage > Fixed storage areas > How to... > Create fixed content device](#) in the IBM FileNet P8 online help for more information on the parameters. The following subsections discuss some of these parameters.

Fixed Content Provider Pool Properties

The Fixed Content Provider (FCP) pool controls the number of concurrent connections made to the TSM server using the FCP pool properties on the Tivoli Fixed Content Device (FCD).

- Each FCP instance maintains a separate, long-lived connection to the TSM server which corresponds to a session on the TSM server.
- The default FCP Pool Max In Use value for the Tivoli FCD is 30 for each CE server. When this value is multiplied by the number of CE servers connected to the same TSM Server (the DR550, for example), it should not exceed the MAXSESSIONS setting on that TSM Server.
- When the FCP Pool Max In Use value is reached on a particular Content Engine server, requests for documents on the TSM server will block up to the FCP Pool Max Wait value (the default is 5 seconds). After this period, the TSM server returns an error to indicate that all connections to the TSM server are in use and that the user should try the request again later.

TSM Configuration Properties

The following table provides an example of the properties that relate to your TSM Server and TSM Client installations:

Property	Description
Configuration Files Share	<p>The directory containing the TSM options files, referenced whenever you create or alter a fixed content device.</p> <p>Example: <code>/opt/FileNet/storage</code></p> <p>In a Content Engine server farm, this directory must be accessible by all CE servers in the farm using this exact path.</p>
Archive Protection Flag	<p>Must match the Archive Retention Protection setting on your TSM server.</p> <p>Example: <code>True</code></p>
Node Name	<p>Must match the node name you created on the TSM server for the Content Engine to establish its client connections to the TSM server for this particular FCD.</p> <p>Example: <code>FNCE001</code></p>
Filespace Name	<p>The name used by TSM server for archiving Content Engine objects. You don't need to create anything in advance on the TSM server in order to use this name.</p> <p>The name may have any value as long as it begins with a forward slash ("/").</p> <p>Example: <code>/FileNetP8</code></p>
DSMI Directory	<p>Corresponds to the TSM client installation directory containing the <code>dsm.sys</code> file.</p> <p>If your Content Engine server is running on UNIX, this property is required.</p> <p>If your Content Engine server is running on Windows, leave this property blank.</p> <p>Example: <code>/usr/tivoli/tsm/client/ba/bin</code></p>

To create a Tivoli Storage Manager fixed storage area

1. Create the path to the location where you want Content Engine to stage uploaded documents prior to migrating them to the fixed content device. Example: `/opt/FileNet/storage/tsmstorage`.

All Content Engine servers in a farm must be able to access this path.

2. Start FileNet Enterprise Manager.
3. Start the Storage Area wizard to create a fixed storage area for your TSM fixed content device.
4. Set the property values as shown in the following table. For more information on these properties, refer to [System Administration > Content Engine Administration > Content storage > File storage areas > How to... > Create storage area](#) in the IBM FileNet P8 online help.

Property	Description
Fixed Content Device	Select the fixed content device you created in "To create a Tivoli Storage Manager fixed content device" on page 283.
Staging Area Path	The location where you Content Engine will stage uploaded documents prior to migrating them to the fixed content device.
Management Class	The management class corresponds to retention period you want applied to documents stored in this storage area. The wizard queries the TSM server to determine the available management classes.

Install IBM FileNet Deployment Manager

IBM FileNet Deployment Manager works with FileNet Enterprise Manager to deploy test systems into full production. Use the procedure in this topic to install the IBM FileNet Deployment Manager interactively or silently on a Windows machine.

NOTE FileNet Deployment Manager runs only on Windows.

To install IBM FileNet Deployment Manager

1. On the machine where you will install FileNet Deployment Manager, log on as a member of the Local Administrators group or the Power Users group.
2. If you have not already done so, install Microsoft .NET Framework 2.0 and Web Services Enhancements (WSE) 3.0 on the machine.
3. Access the Content Engine installation software.
4. Start the FileNet Deployment Manager installation. For information on parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).
- To install interactively:
 - i. Run the following command in the software package:

```
P8CE-4.5.0-WIN.EXE
```

- ii. Complete the program installation wizard using the following table:

In this screen...	Perform this action...
Welcome	Click Next to proceed with the Deployment Manager installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Software License Agreement	Review and accept the license agreement, and then click Next .

In this screen...	Perform this action...
Choose Components	Select the Tools check box, clear the other check boxes, and then click Next . NOTE Selecting Tools also selects FileNet Configuration Manager and FileNet Content Engine Upgrader for installation.
Choose Install Path	Specify the path where you want Deployment Manager to be installed, and then click Next .
Specify Documentation URL	If you haven't already specified the URL for accessing IBM FileNet P8 documentation from Enterprise Manager and other IBM FileNet P8 components, do so now. Click Next .
Review Pre-Installation Summary	Verify your component selection, and click Install to start installing Deployment Manager.

- To install silently:
 - i. Open the `CE_silent_install.txt` file in the software package for editing.
 - ii. Set the parameter values in the `CE_silent_install.txt` file for your site. Be sure to set the `CHOSEN_INSTALL_FEATURE_LIST` parameter value to:

Tools

If you want to also install FileNet Enterprise Manager on this machine, select .NET Clients as well:

`DotNetClients,Tools`

- iii. Set the `LAUNCH_CM` value to 0.
- iv. Save your edits.
- v. Run the following command in the software package:

```
P8-CE-4.5.0-WIN.EXE -f CE_silent_install.txt -i silent
```

NOTE To start FileNet Deployment Manager, choose **Start > All Program > FileNet P8 Platform > P8 Deployment Manager**.

Install Application Integration

Install Application Integration if you want to integrate IBM FileNet Workplace with your Microsoft Office applications and Outlook. Complete the following procedure on each machine that will use Workplace Application Integration.

NOTE You cannot collocate Workplace Application Integration with clients running IDM Desktop Application Integration.

Verify that the client machine meets the platform requirements documented in the *IBM FileNet P8 Hardware and Software Requirements*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

To install the Application Integration software interactively

1. Log onto the client machine using an account that has Administrator privileges.
2. Sign in to Workplace.
3. Click **Author**, and then click **General Tools**.
4. Scroll down and click **Download Application Integration for Microsoft Office**, and then do one of the following:
 - Click **Open** to run the program from its current location.
 - Click **Save**. In the Save As dialog box, find a location on your machine in which to download and save the ApplicationIntegration.exe file locally, and then click **Save**. Once the file is saved to your hard drive, double-click the file to run the installer.

The Welcome Wizard dialog box for Application Integration appears. Another Welcome dialog box appears.

5. Click **Next**.
6. Read the license agreement, and then select **I accept the terms to the license agreement**, and then click **Next**. If you do not accept the license agreement, you cannot continue with the install.
7. Do the following:
 - Select the applications you want to integrate, and then click **Next**.

NOTE The Application Integration Toolkit Components option is required to use Application Integration.

- Under **Install to**, the default installation path is displayed. Click **Change** to specify a different location on the Change Current Destination Folder dialog box, and then click **OK**. Click **Next**.

NOTE You may see two default installation paths - one for Microsoft Office and Outlook, and another for the Toolkit Components. The Toolkit Components path only appears when the system on which you are installing Application Integration has the Toolkit Components currently installed. You cannot modify the Toolkit Components installation path.

8. Enter the server name, port number and application name that defines the Workplace address. The *server name* is the name of the web server running Workplace, *port number* is the web server's assigned port, *application* is the directory where you installed the IBM FileNet Workplace application files.

Check **Server uses secure connection (SSL)** if you are running full SSL to encrypt all communication with Workplace.

NOTE You can also leave these fields blank and enter the information when you log on to Workplace Application Integration.

9. Click **Next**.
10. Click **Install**.
11. After the install is complete, click **Finish** to complete the setup process.

To install the Application Integration software silently

1. Log onto the client machine using an account that has Administrator privileges.
2. Sign in to Workplace.
3. Click **Author**, and then click **General Tools**.
4. Scroll down and click **Download Application Integration for Microsoft Office**, and then click **Save**. In the Save As dialog box, find a location on your machine in which to download and save the ApplicationIntegration.exe file locally, and then click **Save**.
5. Open a DOS command window and change the current directory to the one where ApplicationIntegration.exe resides.
6. Type the following at the command line:

```
ApplicationIntegration.exe /s/v"/qn <additional msi arguments included in string>
LICENSE_ACCEPTED=true"
```

Use the /s switch to launch the execution silently and include the /qn switch in the msi string to make msi run silently.

Refer to the following optional command line values you can also use. Append the values within the string containing the msi arguments. For example:

```
ApplicationIntegration.exe /s/v"/qn /L*v C:\temp\AppIntSetup.txt
LICENSE_ACCEPTED=true"
```

Command Line Values	Installs
ADDLOCAL=ALL	All Features
ADDLOCAL=ALL REMOVE=OutlookIntegrationFeature	Office Only
ADDLOCAL=ALL REMOVE=OfficeIntegrationFeature	Outlook Only
ADDLOCAL=ALL REMOVE=OutlookIntegrationFeature, OfficeIntegrationFeature	Core Only

Command Line Values	Settings
HOST=<host name>	Enter the name of the web server running Workplace.
PORT=<port number>	Enter the web server's assigned port number.
APPLICATION=<application name>	Enter the directory in which you installed the Workplace application files.
SERVER_CONNECTION=1	Set Application Integration to use an https connection
SERVER_CONNECTION=0	Set Application Integration to use http connection. This is the default if this parameter is not passed.
/L*v C:\temp\ApplntSetup.txt	Verbose installation log and specify log location.

To verify your Workplace Application Integration installation

1. Start Microsoft Word.
2. From the **File** menu, click **FileNet P8**, click **Open Document**, and then click **Select Item**. The Logon dialog box opens.
3. Log on using any valid domain account. The available object stores in your environment are displayed.

NOTE If you did not enter the Workplace Address information in [Step 8](#) in the procedure “[To install the Application Integration software interactively](#)” on [page 288](#), enter the server name, port number and application name that defines the Workplace address. The *server name* is the name of the web server running Workplace, *port number* is the web server's assigned port, *application* is the directory where you installed the IBM FileNet Workplace application files.

Check **Server uses secure connection (SSL)** if you use a full SSL to encrypt all communication with Workplace. Do not select this option if you use a SSL redirect during logon.

4. Close all dialog boxes and close Microsoft Word.

To uninstall or modify Workplace Application Integration

1. From the **Start** menu, click **Settings**, and then click **Control Panel**.
2. Click **Add/Remove Programs**, and then click **FileNet Workplace Application Integration 4.0**.
3. Do one of the following:
 - Click **Remove**, and then click **Yes** to confirm you want to uninstall Workplace Application Integration.
 - Click **Change** to access maintenance tasks, and then click **Next**. You can modify, repair, or remove Application Integration using the maintenance tasks.

Do one of the following:

- Select **Modify** to add or remove integration with Microsoft applications from your previous install. For example, if you have both Microsoft Office and Outlook installed, you can remove one of the applications using this option. The Custom Setup dialog box appears, where you highlight the option you want to add or remove. Click **Next**, and then click **Install**. Click **Finish** to complete the process.
- Select **Repair** to re-install Workplace Application Integration to repair installation errors, and then click **Next**. Click **Install** to start the repair process. Click **Finish** to complete the process.
- Select **Remove** to remove Workplace Application Integration from your system, and then click **Next**. Click **Remove**. Once the application is removed from your system, click **Finish** to complete the process.

To silently uninstall Workplace Application Integration

1. Open a command prompt.
2. Enter the following command to uninstall Workplace Application Integration:

```
msiexec.exe /X{35907B7D-02E2-490C-8F3B-54C4E3729D90} /qn
```

Install File Tracker

Install File Tracker if you want to use the Workplace file tracking feature without installing Application Integration. Complete the following procedure on each machine that will use Workplace File Tracker.

NOTES

- If you have already installed or upgraded to Application Integration 3.5.1-002 or higher, then the File Tracker feature has already been installed. Do not perform this procedure if you already installed a version of Application Integration that includes File Tracker, including Application Integration 4.0.
- If you have already installed Application Integration 3.5.1-001 or earlier, upgrade it to 4.0 plus the latest fix pack, and this will include the File Tracker installation. For details about the upgrade process, see [“Upgrade Application Integration and File Tracker” on page 605](#).

Verify that the client machine meets the platform requirements documented in the *IBM FileNet P8 Hardware and Software Requirements*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

To install the File Tracker software interactively

1. Log on to the client machine using an account that has Administrator privileges.
 2. Sign in to Workplace.
 3. Click **Author**, and then click **General Tools**.
 4. Scroll down and click **Download File Tracker** and do one of the following:
 - Click **Open** to run the program from its current location.
 - Click **Save**. In the Save As dialog box, find a location on your machine in which to download and save the FileTracker.exe file locally, and then click **Save**. Once the file is saved to your hard drive, double-click the file to run the installer.
- The Welcome Wizard dialog box for File Tracker appears. Another Welcome dialog box appears.
5. Click **Next**.
 6. Read the license agreement, and then select **I accept the terms to the license agreement**, and then click **Next**. If you do not accept the license agreement, you cannot continue with the install.
 7. Do one of the following:
 - Click **Change** if you want to install File Tracker to a different location. Specify the location to which you want to install File Tracker, and then click **OK**. Click **Next**.
 - Click **Next** to accept the default location.
 8. Click **Install**.
 9. After the install is complete, click **Finish** to complete the setup process.

10. (On Vista using Internet Explorer 7.0 only) Add the Workplace URL to the browser security tab.
 - a. In the Internet Explorer 7.0 browser, click **Tools > Internet Options**. Click the **Security** tab.
 - b. Select **Trusted Sites**, and click the **Sites** button.
 - c. Add the Workplace URL and click **Add**.
 - d. Click **OK**, and **OK** again to save changes.

To install the File Tracker software silently

1. Log on to the client machine using an account that has Administrator privileges and sign in to Workplace.
2. Click **Author**, and then click **General Tools**.
3. Scroll down and click **Download File Tracker** and click **Save**. In the Save As dialog box, find a location on your machine in which to download and save the FileTracker.exe file locally, and then click **Save**.
4. Open a DOS command window and change the current directory to the one where FileTracker.exe resides.
5. Type the following at the command line:

```
FileTracker.exe /s /v"/qn <additional msi arguments included in string>
LICENSE_ACCEPTED=true"
```

NOTE Use the /s switch to launch the execution silently and include the /qn switch in the msi string to make msi run silently. In addition, be aware of spaces specified between switches in the above example. Using the correct spacing ensures a successful silent install.

Refer to the following optional command line values you can also use. Append the values within the string containing the msi arguments.

For example:

```
FileTracker.exe /s /v"/qn /L*v C:\temp\FileTrackerSetup.txt LICENSE_ACCEPTED=true"
```

Command Line Values	Settings
/L*v C:\temp\FileTrackerSetup.txt	Verbose installation log and specific log location. NOTE If you intend to specify a log location, create the directory before running the silent install. If the directory is not created ahead of time, the install will fail.

6. (On Vista using Internet Explorer 7.0 only) Add the Workplace URL to the browser security tab as follows:
 - a. In the Internet Explorer 7.0 browser, click **Tools > Internet Options**. Click the **Security** tab.
 - b. Select **Trusted Sites**, and click the **Sites** button.
 - c. Add the Workplace URL and click **Add**.

- d. Click **OK**, and **OK** again to save changes.

To uninstall Workplace File Tracker

1. From the **Start** menu, click **Settings**, and then click **Control Panel**.
2. Click **Add/Remove Programs**, and then click **FileNet Workplace File Tracker**.
3. Click **Remove**, and then click **Yes** to confirm you want to uninstall Workplace File Tracker.

To silently uninstall Workplace File Tracker

1. Open a command prompt.
2. Enter the following command to uninstall Workplace File Tracker:
`msiexec.exe /X{4291FBBC-C585-43ED-9416-5F22D8C6FEE9} /qn`

Deploy multiple Application Engine instances

This topic covers deployment of multiple instances of Workplace on a single application server. Each deployment of Workplace must use the same Content Engine, Process Engine, and connection point. Each deployment of Workplace may use different Site Preference settings and may provide access to different object stores.

NOTES

- The following procedure assumes that you have already installed Application Engine and performed the following configuration tasks according to your application server type:
 - [“Configure Application Engine \(WebSphere\)” on page 228](#)
 - [“Configure Application Engine \(WebLogic\)” on page 237](#)
 - [“Configure Application Engine \(JBoss\)” on page 243](#)
- When deploying multiple instances of Workplace, make copies of all the Workplace configuration and working files. Each instance of Workplace will use separate configuration, deploy, download, upload, and Workplace files. Leave the default installed files unmodified.
- For more information on how to deploy and manage multiple identical applications, see your application server documentation.

To deploy a second instance of the Workplace application

1. Make a copy of the `/FileNet/Config/AE` directory, including all of its contents, for each instance you plan to deploy.

For example, if you are deploying two instances, you would create:

```
install_path/FileNet/Config/AE1
```

```
install_path/FileNet/Config/AE2
```

2. Make copies of the upload and download directories in the `<install_path>/FileNet/AE` directory.

For example, you would create:

```
install_path/FileNet/AE/Download1
```

```
install_path/FileNet/AE/Upload1
```

```
install_path/FileNet/AE/Download2
```

```
install_path/FileNet/AE/Upload2
```

3. Make a copy of the deploy directory and all of its contents for each Workplace instance.

For example, you would create:

```
install_path/FileNet/AE/deploy1
```

```
install_path/FileNet/AE/deploy2
```

4. Make a copy of the Workplace directory and all of its contents for each Workplace instance.

For example, you would create:

```
install_path/FileNet/AE/Workplace1
```

```
install_path/FileNet/AE/Workplace2
```

5. Navigate to each custom copied Workplace `web.xml` instance and update the path for the configuration directory, upload directory, and download directory locations.

For example, in the `install_path/FileNet/AE/Workplace1/WEB-INF/web.xml`, you would make the following changes (in **bold**):

```
<context-param>
  <param-name>configurationDirectory</param-name>
  <param-value>/opt/FileNet/Config/AE1</param-value>
</context-param>

<context-param>
  <param-name>uploadDir</param-name>
  <param-value>/opt/FileNet/AE/Upload1</param-value>
</context-param>
<context-param>
  <param-name>downloadDir</param-name>
  <param-value>/opt/FileNet/AE/Download1</param-value>
</context-param>
```

To deploy each additional Workplace instance as an EAR file

NOTE Perform the following steps for each custom Workplace instance you plan to deploy.

1. Modify the `application.xml` file located in the copied deploy directories, as follows:
 - a. Open each instance of the `application.xml` file, for example, `<install_path>/FileNet/AE/deploy1/META-INF/application.xml`.
 - b. Change the `<display-name>` and the `<context-root>` elements to your custom name, for example, `Workplace1` (shown in **bold**, below).

```
<display-name>Workplace1</display-name>
<description>FileNet Application Engine</description>

<module>
  <web>
    <web-uri>app_engine.war</web-uri>
    <context-root>Workplace1</context-root>
  </web>
</module>
```

2. In the `create_app_engine_war` file, change the `install_home` path and the `deploy` directory to match your custom names.

For example, you would make the following changes, shown in **bold**:

```
install_home="/opt/FileNet/AE/Workplace1"
"${install_home}/../_AEjvm/bin/jar" -cf "${install_home}/../deploy1/app_engine.war"*
```

3. In the `create_app_engine_ear` file, set the install home, deploy directory, and EAR file to match your custom names.

For example, you would make the following changes, shown in **bold**:

```
install_home="/opt/FileNet/AE/Workplace1"  
cd "${install_home}/../deploy1"  
"${install_home}/../_AEjvm/bin/jar" -cvf "${install_home}/../deploy1/  
app_engine1.ear" META-INF *.war
```

4. Delete the existing `app_engine.war` and `app_engine.ear` files.
5. Create your custom WAR and EAR files by running the `create_app_engine_war` and then the `create_app_engine_ear` files.
6. Deploy the EAR file for each custom Workplace instance according to the procedures for your application server type, as presented in the following topics:
 - [“Deploy Application Engine \(WebSphere\)” on page 246](#)
 - [“Deploy Application Engine \(WebLogic\)” on page 249](#)
 - [“Deploy Application Engine \(JBoss\)” on page 251](#)
7. Install any service packs, fix packs and/or interim fixes required. To determine whether such additional software updates are needed, contact your service representative.

Enable Application Engine to use ISRA

Image Services Resource Adapter (ISRA) is a J2EE connector to the FileNet Image Services (IS) libraries. Using ISRA, Workplace users can view IS documents and their associated annotations in the FileNet P8 Image Viewer and, if they have the appropriate permissions, update the annotations.

To enable Workplace users to view documents using ISRA, the following steps must be completed:

- Install Application Engine.
- Install FileNet ISRA.

For information on installing, configuring and deploying FileNet ISRA, refer to the Image Services Resource Adapter documentation in the FileNet ISRA installation package.

TIP Use the Sample Application shipped with FileNet ISRA to confirm that the ISRA installation was successful.

WARNING In an ISRA upgrade situation, take care to use the same library name (JNDI connection factory name) that has been previously set in the ISRA install. Changing this variable can cause conflicts when accessing documents.

- Install the Application Engine ISRA Servlet and take the following into account:
 - Install and deploy ISRA before installing and deploying the ISRA Servlet.
 - Deploy the ISRA Servlet on the same application server as FileNet ISRA.
 - You need not necessarily install the ISRA Servlet on the Application Engine server. See [“ISRA SSL Support” on page 298](#) for details that might affect your collocation plans.
- Configure Workplace Site Preferences.

ISRA SSL Support

The following table details supported SSL configurations for ISRA.

SSL Configuration	SSL Support
ISRA Servlet and Application Engine Collocated. Application Engine configured for SSL logon redirect to a non-local host.	Supported
ISRA Servlet and Application Engine Collocated. Application Engine Configured for SSL logon redirect to a local host.	Supported
ISRA Servlet and Application Engine Collocated. Application Engine and ISRA Servlet running under SSL.	Not Supported

SSL Configuration	SSL Support
ISRA Servlet remote from Application Engine. Application Engine configured for SSL logon redirect to a non-local host.	Supported
ISRA Servlet remote from Application Engine. Application Engine configured for SSL logon redirect to a local host.	Supported
ISRA Servlet remote from Application Engine. Application Engine running under SSL, ISRA Servlet not running under SSL.	Supported
ISRA Servlet remote from Application Engine. Application Engine and ISRA Servlet running under SSL.	Not Supported

Install and Deploy the Application Engine ISRA Servlet

Use the procedure in this topic to install and deploy the ISRA Servlet on the operating systems supported by Application Engine by running the associated ISRA setup program found in the Application Engine software package.

To install and deploy the Application Engine ISRA Servlet

The FileNet P8 Application Engine installation software contains the ISRA servlet installation programs for the supported P8 AE operating systems.

1. Log on to the application server using the following account, depending on your operating system:

UNIX

User account with write access to the `/bin` directory and read, write, and execute access to the directory where you plan to install ISRA Servlet.

Windows

A member of the local Administrators group or as a user account with equivalent permissions.

2. Stop the application server if it is running.
3. Access the ISRA installation package, and start the following Application Engine ISRA Servlet setup program, depending on your operating system:

UNIX

`AE-ISRA-Servlet-4.0.2.0-operating_system.bin`

Windows

`AE-ISRA-Servlet-4.0.2.0-WIN.exe`

4. Complete the installation program screens. For information on parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the Data > Filter > AutoFilter command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the ISRA servlet installation program:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select ISRA installer.
 - Click the AutoFilter drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
5. Check the file `AE_ISRA_Servlet_install_log-4_0_2_0.txt`, located in the `AE_israservlet_install_path\FileNet` directory, to see if any errors occurred during the installation.
 6. Install unlimited strength JAR files.

Perform this step only if the following are true:

- You selected the option to create Strong keys in the Application Engine User Token Security step of the Application Engine installation.
- Application Engine ISRA Servlet is deployed on a different application server than Application Engine.

CAUTION If these conditions are true, failure to perform this step causes an `EncryptionException` when you log on to the IS server.

7. (WebSphere and WebLogic only) Start the application server.
8. Deploy `AE_israservlet_install_path/FileNet/ApplicationEngineISRAServlet/ae_isra.war` in the same way you deployed the `app_engine.war` file for Workplace.
9. (JBoss only) Start the application server.
10. Verify the Application Engine ISRA Servlet is installed and deployed correctly, as follows. This step launches a diagnostic tool that does the verification.
 - a. Open your web browser.
 - b. Enter the URL for the Application Engine ISRA Servlet, for example:

```
http://ApplicationEngineISRAServlet_servername:port/
ApplicationEngineISRAServlet/ISRA
```

NOTE `ApplicationEngineISRAServlet` is the default context root. If you specified a different name for the context root when deploying the Application Engine ISRA Servlet, change the URL to match your configuration.

If the ISRA Servlet is set up correctly, a congratulations message displays, for example:

```
Congratulations! ISRA Interface Servlet is configured at this URL.
WcmApiConfigFile = D:\ISRAInterface\jsp\WEB-INF\WcmApiConfig.properties
```

WcmApiConfig file exists

```
CryptoKeyFile/UserToken = C:\Program
Files\FileNet\Authentication\UTCryptoKeyFile.properties
CryptoKeyFile/UserToken exists
```

```
FileNet ISRA classes are in the classpath
com.filenet.is.ra.cci.FN_IS_CciConnectionSpec
```

Configure Workplace Site Preferences

Use the following procedure to enable the Image Services external service and set the ISRA Interface Servlet URL in Workplace Site Preferences. The Application Engine setup installs the pre-configured Image Services external service, which includes the parameterized values necessary to access FileNet IS libraries from Workplace.

To configure Workplace Site Preferences for ISRA Servlet support

1. Sign in to Workplace as a user having the Application Engine Administrators access role.
2. Launch Site Preferences as follows:
 - a. Select **Admin**.
 - b. Select **Site Preferences**.
3. Enable the pre-configured Image Services external service, as follows:
 - a. Select **External Services** from the left options list.
 - b. Select **Modify** for the Image Service, located under External Reference Services.
 The External Reference Service Settings site preference page displays.
 - c. Under General Information, locate *Show on Select File page* and change the value to **Show**.
 - d. Accept the setting.
4. Set the ISRA Interface Servlet URL as follows:
 - a. Select **Bootstrap**.
 - b. Under Preferences Settings, set the value of ISRA Interface Servlet URL. For example:
`http://servername:port/ApplicationEngineISRAServlet/ISRA`
NOTE ApplicationEngineISRAServlet is the default context root. If you specified a different name for the context root when deploying the Application Engine ISRA Servlet, change the URL to match your configuration.
 - c. Accept the setting.
 - d. Exit Site Preferences.

Log On to Image Services Using an LDAP Account

To log on to the Image Services library using your LDAP account, configure ISRA and Image Services for LDAP authentication.

NOTE If the LDAP account with which you accessed Workplace is not valid for the Image Services library, or if LDAP authentication is not configured, you will be prompted to log on to the Image Services library.

For information on configuring LDAP authentication for ISRA, refer to the *ISRA Installation and Deployment Guide*. For information on configuring LDAP authentication for Image Services, refer to the *Image Services System Tools Reference Manual*.

Access IS Library Documents

For information about accessing IS library documents, see [User Help > Actions, preferences and tools > Actions > Documents > Add a document \(Workplace\)](#).

Install and Configure IBM FileNet System Manager

Content Engine, Application Engine, and Process Engine install, by default, the necessary software required for the System Manager performance component. To use System Manager, enable associated components and install IBM FileNet Dashboard to perform related configuration procedures to enable System Manager. Installing Dashboard is not necessary if you currently have IBM FileNet System Monitor installed.

Refer to the following IBM FileNet P8 help topic [FileNet P8 Documentation > FileNet P8 Administration > Enterprise-wide Administration > System Manager](#) for instructions on how to enable the associated System Manager components.

Refer to the documentation provided with IBM FileNet Dashboard for instructions on how to use Dashboard.

Modify an Autonomy K2 server configuration

Add additional K2 Administration Servers

You will likely need to install additional Autonomy K2 Administration Servers to handle the indexing load. The Master Administration Server is the main hub for configuring all the servers you install. The additional servers are managed through the K2 Dashboard that is installed with the Master Administration Server.

NOTE A K2 Master Administration Server must be installed before you add additional K2 Administration Servers.

To install additional Autonomy K2 Administration Servers on Windows

1. Access the host machine and log on as *k2_os_user*. For details on required accounts and related permissions, see ["Accounts for Content Search Engine" on page 92](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

NOTE Ensure *k2_os_user* has administrator privileges on this machine.

2. Set the JAVA_HOME environment variable as follows:
 - a. Open the System control panel.
 - b. Click the **Advanced** tab.
 - c. Click **Environment Variables**.
 - d. Click **New** under System Variables.
 - e. Set the variable information as follows:

Variable name: JAVA_HOME

Variable value: *Java (JDK) install path*

NOTE The installer will not allow you proceed with the installation until the JAVA_HOME environment variable is set.

3. Start the Content Search Engine installation using your Installation and Upgrade Worksheet. For information on the Content Search Engine parameter values, see "Installation and Upgrade Worksheet" in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), perform the following steps to quickly see only the installation properties you must specify for the Content Search Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CSE Installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).

- To install interactively:
 - i. Access the IBM FileNet Content Search Engine installation package and execute the P8CSE-4.5.0-WIN.EXE file.
 - ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
JAVA_HOME Not Set	<p>This screen will appear only if you have not set the JAVA_HOME environment variable on the machine.</p> <p>Click Cancel to exit the installation program and set the required environment variable.</p> <p>NOTE The installer will not allow you to continue until you set the environment variable.</p> <p>Click Next to continue.</p>
JAVA_HOME for K2 Server	<p>Enter the path to the supported Java (JDK) installation and click Next to continue.</p>
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement.</p> <p>Click Next to continue.</p>
Specify Content Search Engine Installation Path	<p>Specify the directory in which you want to install Content Search Engine. The installation program will create any specified directories that do not already exist.</p> <p>Click Next to continue.</p>
Select Autonomy K2 Server Type	<p>Choose whether to install a Master Administration Server (required for first-time installation) or an Administration Server.</p> <p>Click Next to continue.</p>
Specify Administration Server Information	<p>This screen will appear only if you selected Administration Server on the Select Autonomy K2 Server Type screen.</p> <p>Enter the host name and port for the Administration Server.</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify Master Administration Server Information	<p>Enter the host name and server port for the Master Administration Server.</p> <p>NOTE If you are installing a K2 Administration Server, the Master Administration Server must already be installed.</p> <p>Click Next to continue.</p>
K2 Operating System User Account	<p>Enter the <i>k2_os_user</i> log in information and the name of the domain on which this K2 server communicates with the Content Engine.</p> <p>Click Next to continue.</p>
Review Pre-installation Summary	<p>Verify your component selections, and click Install to start installing software.</p>
Install Complete	<p>Click Done to complete the installation.</p>

- To install silently
 - i. Access the IBM FileNet Content Search Engine installation package and edit the `CSE_silent_install.txt` file to reflect the appropriate responses for your installation.
 - ii. Launch the Content Search Engine installer by executing the following command:

```
P8CSE-4.5.0-WIN.EXE -f CSE_silent_install.txt -i silent
```

NOTE The following two Autonomy K2 services will be installed and started on your machine after the installation is complete:

- Verity K2 6.2.1 Administration Server service.
 - Verity K2 Administration Web Server service (Tomcat server).
4. Review the following Content Search Engine log files for installation errors. The files are located in the `verity` directory of the install path:
 - `cse_install_path\verity\cse_install_log_4_5_0.txt`
 - `cse_install_path\verity\vconfig.log`

To install additional Autonomy K2 Administration Servers on UNIX

NOTE Most processes for the Autonomy K2 software will run as *k2_os_user*. However, the `vspgget` process must run as root. For details on required accounts and related permissions, see [“Accounts for Content Search Engine” on page 92](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

1. Access the host machine and log on as a user with root privileges.

2. Enter the following commands to set the vspget program's setuid bit such that the service runs as root:

```
chown root /verity install path/k2/_platform/bin/vspget
```

```
chmod u+s /verity install path/k2/_platform/bin/vspget
```

Replace `_platform` with the following directory, according to your environment:

Platform	Directory
HPUX	_hpux
AIX	_rs6k43
Solaris	_ssol126
Linux	_ilnx21

3. Log off the machine.
4. Log on to the machine as `k2_os_user`.
5. Set the following environment variable and place the entry in the `.profile` file for `k2_os_user`.

```
JAVA_HOME=java_(JDK)_install_path/jdkversion
```

```
export JAVA_HOME
```

6. Start the Content Search Engine installation using your Installation and Upgrade Worksheet. For information on the Content Search Engine parameter values, see "Installation and Upgrade Worksheet" in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Content Search Engine installer:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CSE Installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- To install interactively (X-Terminal must be installed):
 - i. Access the IBM FileNet Content Search Engine installation package and execute the appropriate `installation program`:

Platform	Command
HPUX	P8CSE-4.5.0-HPUX.BIN
AIX	P8CSE-4.5.0-AIX.BIN
Solaris	P8CSE-4.5.0-SOL.BIN
Linux	P8CSE-4.5.0-LINUX.BIN

ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
JAVA_HOME Not Set	<p>This screen will appear only if you have not set the JAVA_HOME environment variable on the machine.</p> <p>Click Cancel to exit the installation program and set the required environment variable.</p> <p>NOTE The installer will not allow you to continue until you set the environment variable.</p>
JAVA_HOME for K2 Server	<p>Enter the path to the supported Java (JDK) installation and click Next to continue.</p>
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement.\</p> <p>Click Next to continue.</p>
Specify Content Search Engine Installation Path	<p>Specify the directory in which you want to install Content Search Engine. The installation program will create any specified directories that do not already exist.</p> <p>Click Next to continue.</p>
Select Autonomy K2 Server Type	<p>Choose whether to install a Master Administration Server (required for first-time installation) or an Administration Server.</p> <p>Click Next to continue.</p>
Specify Administration Server Information	<p>This screen will appear only if you selected Administration Server on the Select Autonomy K2 Server Type screen.</p> <p>Enter the host name and server port for the Administration Server.</p> <p>Click Next to continue.</p>
Specify Master Administration Server Information	<p>Enter the host name and server port for the Master Administration Server.</p> <p>NOTE If you are installing a K2 Administration Server, the Master Administration Server must already be installed.</p> <p>Click Next to continue.</p>
K2 Operating System User Account	<p>Enter the <i>k2_os_user</i> log in information and click Next to continue.</p>

In this screen...	Perform this action...
Review Pre-installation Summary	Verify your component selections, and click Install to start installing software.
Install Complete	Click Done to complete the installation.

- To install silently
 - i. Access the IBM FileNet Content Search Engine installation package and edit the `CSE_silent_install.txt` file to reflect the appropriate responses for your installation.
 - ii. Execute one of the following commands, based on your operating system:

Platform	Command
HPUX	<code>P8CSE-4.5.0-HPUX.BIN -f CSE_silent_install.txt -i silent</code>
AIX	<code>P8CSE-4.5.0-AIX.BIN -f CSE_silent_install.txt -i silent</code>
Linux	<code>P8CSE-4.5.0-LINUX.BIN -f CSE_silent_install.txt -i silent</code>
Solaris	<code>P8CSE-4.5.0-SOL.BIN -f CSE_silent_install.txt -i silent</code>

NOTE The following two Autonomy K2 services will be installed and started on your machine after the installation is complete:

- Verity K2 6.2.1 Administration Server service.
 - Verity K2 Administration Web Server service (Tomcat server).
7. Review the following Content Search Engine log files for installation errors. The files are located in the `verity` directory of the install path:
 - `cse_install_path/verity/cse_install_log_4_5_0.txt`
 - `cse_install_path/verity/vconfig.log`
 8. Set the following environment variables and place the entries in the `.profile` file for `k2_os_user`.

HP-UX

```
PATH=$PATH:/verity_install_path/k2/_hpx/bin
export PATH

SHLIB_PATH=$SHLIB_PATH:/verity_install_path/k2/_hpx/bin
export SHLIB_PATH
```

AIX

```
PATH=$PATH:/verity_install_path/k2/_rs6k43/bin
export PATH
LIBPATH=$LIBPATH:/verity_install_path/k2/_rs6k43/bin
export LIBPATH
```

Solaris

```
PATH=$PATH:/verity_install_path/k2/_ssol26/bin
export PATH
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/verity_install_path/k2/_ssol26/bin
export LD_LIBRARY_PATH
```

Linux

```
PATH=$PATH:/verity_install_path/k2/_ilnx21/bin
export PATH
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/verity_install_path/k2/_ilnx21/bin
export LD_LIBRARY_PATH
```

To start or stop the Autonomy K2 Services on UNIX

To manually start or stop the Autonomy K2 services, use the following commands, according to your environment:

HP-UX

Start services:

```
nohup /verity_install_path/k2/_hpux/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_hpux/bin/k2adminstop
```

AIX

Start services:

```
nohup /verity_install_path/k2/_rs6k43/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_rs6k43/bin/k2adminstop
```

Solaris

Start services:

```
nohup /verity_install_path/k2/_ssol26/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_ssol26/bin/k2adminstop
```

Linux

Start services:

```
nohup /verity_install_path/k2/_ilnx21/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_ilnx21/bin/k2adminstop
```

To start or stop the Autonomy K2 Services on UNIX

To manually start or stop the Autonomy K2 services, use the following commands, according to your environment:

HP-UX

Start Services:

```
nohup /verity_install_path/k2/_hpux/bin/k2adminstart &
```

Stop Services:

```
/verity_install_path/k2/_hpux/bin/k2adminstop
```

AIX

Start Services:

```
nohup /verity_install_path/k2/_rs6k43/bin/k2adminstart &
```

Stop Services:

```
/verity_install_path/k2/_rs6k43/bin/k2adminstop
```

Solaris

Start Services:

```
nohup /verity_install_path/k2/_ssol26/bin/k2adminstart &
```

Stop Services:

```
/verity_install_path/k2/_ssol26/bin/k2adminstop
```

Linux

Start Services:

```
nohup /verity_install_path/k2/_ilnx21/bin/k2adminstart &
```

Stop Services:

```
/verity_install_path/k2/_ilnx21/bin/k2adminstop
```

Configure Additional K2 Administration Servers

If you add additional K2 Index Servers or Search Servers to an existing configuration, you must enable them through Enterprise Manager to utilize them.

1. Log on to Enterprise Manager as the GCD Administrator and expand the Enterprise Manager tree.
2. Open the Index Area folder.
3. Right-click the index area that you want to add the new services to and select **Properties**.
4. Enable the new Search Servers as follows:
 - a. Click **Edit Search Servers**.
 - b. In the Search Servers Available pane, highlight any servers you want to enable for this index area and click **Add** to add the server to the Search Servers Selected list.
 - c. Click **OK** to save the settings and enable the new servers.
5. Enable the new Index Servers as follows:
 - a. Click **Edit Index Servers**.
 - b. In the Index Servers Available pane, Highlight any servers you want to enable for this index area and click **Add** to add the server to the Index Servers Selected list.
 - c. Click **OK** to save the settings and enable the new servers.

Move K2 Servers to new hardware

To move K2 Master Administration Server software to new hardware

To move an existing installation of the Autonomy K2 Master Administration server configuration, the installation must be imaged and then restored on the new hardware. If any details of the new configuration do not match the previous configuration, the configuration will not work.

1. Back up your Autonomy K2 Master Administration Server configuration.
2. Configure the new machine.
3. Restore your Autonomy K2 Master Administration Server installation.

To move K2 Administration Server software to new hardware

Follow this procedure to maintain your existing configuration on new hardware. Alternatively, you can remove the server from your configuration (see procedure below) and then create a new configuration after installing the K2 Administration Server software.

To move your existing configuration to new hardware, your new hardware must be configured the same as the previous machine. All drives and shares must be named the same and each server must have the same host name and IP addresses.

1. Take careful note of all aspects of your current Content Search Engine configuration. Record all share names, host names, server ports, and IP addresses. Record the server names and ports of all configured server services in the K2 Dashboard, and their locations.
2. If collections are stored on this machine, make a backup copy.

3. Set up your new hardware and ensure the machine host name and IP address match your previous configuration.
4. Follow the Add Additional K2 Administration Servers procedure above to install the K2 Administration Server software on the new machine.
5. Create the services for this machine in the K2 Master Administration Server dashboard and ensure all server services are named the same as your previous configuration and ensure all servers created in the Autonomy K2 Dashboard are named the same and configured for the same ports.

NOTE You can change the ports, but if you do so you'll need to reboot the CE server(s). The names of the search servers, index servers and brokers may not be changed for any items referenced by an index area on the CE.

6. Restore the collections to the same Root Dir Path (as specified in the index area properties) as before. If the collections are no longer available, mark those collections as unavailable, and then run a reindexing job on those collections. Otherwise copy/restore those collections via whatever tool you used to save them.
7. Modify the appropriate directory path entries in the `Verity.cfg` file.

To remove K2 Administration Servers from your Content Search Engine configuration

1. If collections were stored on the machine you want to remove:
 - a. Determine which K2 Server will hold the collections. On that machine, create a new collections directory and temp directory and assign the appropriate permissions. For details, see [“Create a Content Search Engine collections directory” on page 162](#).
 - NOTE** See the index area properties (Root Dir Path) for the collections location for the appropriate index area.
 - b. Modify the appropriate directory path entries in the `verity.cfg` file.
 - c. Move the collections to the new location.
2. Modify the index area to use the index servers and search servers of the machine to which the collections were moved.
3. Access the K2 Dashboard and remove the appropriate K2 Administration server from the dashboard configuration.

Install the COM compatibility layer (CCL)

The option to install the COM compatibility layer is available as part of the IBM FileNet Content Engine installer.

To install the COM Compatibility Layer (CCL) from the IBM FileNet Content Engine installer

1. In the Choose Components dialog, select .NET Client, then click Next.
2. In the .NET API COM Compatibility Layer (CCL) Server URL dialog, enter a valid URL for the CCL (for example, <http://localhost:9080/wsi/FNCEWS40MTOM/>). Note that if you do not enter a valid URL, the CCL will not be installed.

If you do not install the CCL during the initial installation, you have the option of installing later by running the CE installer again. You can also install the CCL anytime by using the Configuration Manager tool.

Upgrade and configure IBM FileNet P8 Platform

This section contains the following tasks:

- [“Upgrade IBM FileNet P8 documentation” on page 317](#)
- [“Upgrade and configure Content Engine and Content Search Engine” on page 325](#)
- [“Upgrade and configure Process Engine” on page 497](#)
- [“Upgrade and configure Application Engine” on page 543](#)
- [“Upgrade add-on components” on page 604](#)

Upgrade IBM FileNet P8 documentation

Perform the tasks in this section to upgrade your IBM FileNet P8 documentation installation. See the following topics:

- [“Overview” on page 317](#)
- [“Refresh IBM FileNet P8 documentation without uninstalling” on page 318](#)
- [“Update IBM FileNet P8 documentation by uninstalling and reinstalling” on page 319](#)
- [“Update help search index” on page 322](#)
- [“Start and verify IBM FileNet P8 documentation web site” on page 324](#)

Task 1: Upgrade IBM FileNet P8 documentation

Overview

There are two methods available for updating an existing IBM FileNet P8 Documentation installation:

- [“Refresh IBM FileNet P8 documentation without uninstalling” on page 318](#)
Use this option if you have IBM FileNet P8 3.5.x or 4.0.x documentation installed without any expansion product help.
- [“Update IBM FileNet P8 documentation by uninstalling and reinstalling” on page 319](#)
Use this option if you have IBM FileNet P8 3.5.x or 4.0.x documentation installed with expansion product help included (for example, Process Analyzer, Process Simulator, IBM FileNet P8 eForms, Content Federation Services, or Records Manager).

Optionally, as of the IBM FileNet P8 4.5 documentation release, you can install and index web-posted auxiliary documentation, such as the IBM FileNet P8 Release Notes, to have it included in the same search functionality. For a complete list of such documentation, see “Gather auxiliary documentation” in the *Plan and Prepare Your Environment for IBM FileNet P8* guide.

NOTES

- As of the IBM FileNet P8 4.0 release, you can deploy the IBM FileNet P8 documentation on a Content Engine server because it, like the Application Engine server, is a J2EE application server. If you are an existing 3.5.x customer and wish to install the 4.5 documentation on a Content Engine server or a new application server, you must perform a new installation rather than an upgrade. Therefore, use the install instructions in the following topic:
 - [“Install IBM FileNet P8 Platform documentation \(All\)” on page 23](#)
- The refresh procedure assumes the following:
 - You wish to replace the 3.5.x or 4.0.x documentation at the existing location with updated files.
 - You are familiar with your application server’s procedures for reinstalling or redeploying web site applications.
- Before updating any IBM FileNet P8 documentation, review the *IBM FileNet P8 Hardware and Software Requirements* for the required software versions and updates for third-party software. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).
- Although some versions of BEA WebLogic support deployment of WAR-file-based web applications, you cannot deploy `ecm_help.war` on this application server platform. You must instead use the fully expanded IBM FileNet P8 documentation directory (`ecm_help`) structure. Otherwise, the searches within the IBM FileNet P8 documentation will not work and you will receive null pointer errors.

- In environments where Windows NTFS is used, there is a 256 character limit on file and directory names (directory depth). When trying to delete an existing IBM FileNet P8 documentation web site, you might encounter access denied errors. See Microsoft Knowledge Base article <http://support.microsoft.com/?kbid=320081> for more information.
- Before installing the latest IBM FileNet P8 documentation, be sure to back up your existing IBM FileNet P8 documentation web site according to your site and application server procedures. This precaution will allow you to restore the IBM FileNet P8 documentation web site quickly if for any reason you have to back out of or delay your IBM FileNet P8 software upgrade.
- If you install any IBM FileNet P8 expansion products as part of your upgrade (for example, Process Analyzer, Process Simulator, IBM FileNet P8 eForms, Content Federation Services, or Records Manager), be aware that:
 - You must copy the associated help for all expansion products onto the updated IBM FileNet P8 documentation server.
 - You must update the index for the help Search feature as documented below. This action ensures that searches return all expected results. If you add help for other expansion products later, you must re-run the procedure below for updating the help Search index.
 - You must also update the help Search index if you update the installed IBM FileNet-based help that you have customized or translated as part of your own application development.
- Any time you update the documentation search index, a backup of the files in the existing `Index/core` directory will be automatically copied to the `Index/IndexOld` subdirectory. You can reapply these backed-up files to the `core` subdirectory (after first removing the new files created there) if you need to return to your previous indexed state.
- Depending on your operating system (Windows or UNIX) and application server version (WebSphere, WebLogic, or JBoss), some screens will be slightly different than those documented in the procedures listed below.

Refresh IBM FileNet P8 documentation without uninstalling

You can refresh an existing IBM FileNet 3.5.x or 4.0.x P8 documentation installation by simply copying the newer documentation files over the existing files, and then reindexing for Search.

Use this option only if you have IBM FileNet 3.5.x or 4.0.x documentation installed without any expansion product help.

NOTES

- If you have FileNet 3.5.x or 4.0.x documentation installed with expansion product help included, use the procedure [“Update IBM FileNet P8 documentation by uninstalling and reinstalling” on page 319](#).
- This refresh procedure requires that you copy the expanded `ecm_help` directory from the IBM FileNet P8 Documentation package over the existing documentation. This stipulation applies

to all application servers, even those, such as WebSphere, that required a WAR file for initial deployment of the existing 3.5.x or 4.0.x documentation.

To refresh the IBM FileNet P8 documentation without first uninstalling

1. Stop the application server (or IBM FileNet P8 documentation site) on which the existing documentation is deployed so that no processes can access the documentation.
2. On the IBM FileNet P8 documentation application server, locate the deployed IBM FileNet P8 documentation directory, and back up (or copy to a safe location) the files located in:

UNIX

deployment_path/ecm_help/search/index/core

Windows

deployment_path\ecm_help\search\index\core

3. Locate the 4.5 IBM FileNet P8 Platform documentation package from the installation software.
4. Copy the expanded `ecm_help` directory from the package over the deployed `ecm_help` directory.
5. Download the latest web-posted updates of installation and upgrade guide PDFs for the IBM P8 Platform and various expansion products. Optionally, also download any auxiliary documentation to the `ecm_help/installation/web` directory on the IBM FileNet P8 Platform documentation server. Check the documentation page on the [IBM Information Management support page on www.ibm.com](#) for the latest versions of these guides. See [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#) for details.
6. Continue as follows:
 - If you added expansion product documentation, you will need to update the search index. Go on to the procedure in the following topic, [“Update help search index” on page 322](#).
 - If you have no further documentation to install, and you did not install any expansion products, then go on to the procedure in the topic [“Start and verify IBM FileNet P8 documentation web site” on page 324](#).

Update IBM FileNet P8 documentation by uninstalling and reinstalling

Use this option if you have IBM FileNet P8 3.5.x or P8 4.0.x documentation installed with expansion product help included, for example: Process Analyzer, Process Simulator, IBM FileNet P8 eForms, Content Federation Services, or Records Manager.

The following procedures explain how to completely remove an existing IBM FileNet P8 documentation site from the application server before rebuilding the site. Follow the procedure for you application server type:

- [“To update the IBM FileNet P8 documentation on WebSphere application servers” on page 320](#)
- [“To update the IBM FileNet P8 documentation on WebLogic application servers” on page 321](#)
- [“To update the IBM FileNet P8 documentation on JBoss application servers” on page 321](#)

To update the IBM FileNet P8 documentation on WebSphere application servers

1. Verify the WebSphere application server is running, and then start the WebSphere administrative console.
2. From the WebSphere administrative console, **Uninstall** the existing documentation site.
3. From the initial install location, delete the IBM FileNet P8 documentation installed files, leaving the `ecm_help` directory in place.
4. Copy the IBM FileNet P8 `ecm_help.war` file from the IBM FileNet P8 documentation package to an appropriate location on the local hard drive.
5. From the WebSphere administrative console, deploy the `ecm_help.war` file using **ecm_help** as the Context Root.
6. For each expansion product, copy the expanded `ecm_help` directory from the package over the deployed `ecm_help` directory.

NOTE Repeat this step for each of your expansion products. You can copy more than one expansion product documentation set to the documentation application server (for example, FileNet P8 eForms and FileNet Content Federation Services). When you are finished, you end up with one `ecm_help` directory structure containing the core documentation set and one or more sets of expansion product documentation files.

7. Download the latest web-posted updates of installation and upgrade guide PDFs for the IBM P8 Platform and various expansion products. Optionally, also download any auxiliary documentation to the `ecm_help/installation/web` directory on the IBM FileNet P8 Platform documentation server. Check the documentation page on the IBM Information Management support page for the latest versions of these guides. See [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#) for details.
8. Restart the IBM FileNet P8 documentation site.
9. Continue as follows:
 - If you have added expansion products you will need to update the search index add on documentation for expansion products, go on to the procedure in the following topic, [“Update help search index” on page 322](#).
 - If you have no further documentation to install, then go on to the procedure in the topic [“Start and verify IBM FileNet P8 documentation web site” on page 324](#).

To update the IBM FileNet P8 documentation on WebLogic application servers

1. Verify the WebLogic application server is running, and then start the WebLogic Administration Console.
2. From the WebLogic Administration Console, **Stop** the existing documentation site and **Delete** the IBM FileNet P8 documentation files, leaving the `ecm_help` directory in place.
3. Copy the `ecm_help` directory structure from the IBM FileNet P8 documentation package to the location of the original IBM FileNet P8 documentation.
4. For each expansion product, copy the expanded `ecm_help` directory from the package over the deployed `ecm_help` directory.

NOTE Repeat this step for each of your expansion products. You can copy more than one expansion product documentation set to the documentation application server (for example, FileNet P8 eForms and FileNet Content Federation Services). When you are finished, you end up with one `ecm_help` directory structure containing the core documentation set and one or more sets of expansion product documentation files.

5. Download the latest web-posted updates of installation and upgrade guide PDFs for the IBM FileNet P8 Platform and various expansion products. Optionally, also download any auxiliary documentation to the `ecm_help/installation/web` directory on the IBM FileNet P8 Platform documentation server. Check the documentation page on the IBM Information Management support page for the latest versions of these guides. See [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#) for details.
6. From the WebLogic Administration Console, restart the IBM FileNet P8 documentation site.
7. Continue as follows:
 - If you have added expansion product documentation, you will need to update the search index. Go on to the procedure in the following topic, [“Update help search index” on page 322](#).
 - If you have no further documentation to install, then go on to the procedure in the topic [“Start and verify IBM FileNet P8 documentation web site” on page 324](#).

To update the IBM FileNet P8 documentation on JBoss application servers

1. Shut down the JBoss application server.
2. From the initial install location, delete the IBM FileNet P8 documentation installed files, leaving the `ecm_help` directory in place.
3. Delete the temporary working directory for the IBM FileNet P8 Platform documentation from the `JBoss_home/server/server_name/work/jboss.web/localhost` directory.
4. Access the IBM FileNet P8 Platform documentation package.
5. Copy the `ecm_help` directory from the package to the existing location on the application server (from where you just removed the old version of the directory).
6. For each expansion product, copy the expanded `ecm_help` directory from the package over the deployed `ecm_help` directory.

NOTE Repeat this step for each of your expansion products. You can copy more than one expansion product documentation set to the documentation application server before continuing (for example, Process Analyzer, Process Simulator, IBM FileNet P8 eForms, Content Federation Services, or Records Manager) so you end up with one `ecm_help` directory containing multiple sets of expansion product files added to it.

7. Download the latest web-posted updates of installation and upgrade guide PDFs for the IBM FileNet P8 Platform and various expansion products. Optionally, also download any auxiliary documentation to the `ecm_help/installation/web` directory on the IBM FileNet P8 Platform documentation server. Check the documentation page on the [IBM Information Management support page on www.ibm.com](#) for the latest versions of these guides. See “[Access IBM FileNet documentation, compatibility matrices, and fix packs](#)” on page 20 for details.
8. Continue as follows:
 - If you have added expansion products you will need to update the search index. Go on to the procedure in the following topic, “[Update help search index](#)” on page 322.
 - If you have no further documentation to install, then go on to the procedure in the topic “[Start and verify IBM FileNet P8 documentation web site](#)” on page 324.

Update help search index

Perform this procedure to update the Search index after you have installed all the IBM FileNet P8 Platform and expansion product documentation on a supported application server.

To update the help Search index

NOTE Perform this procedure only if you refreshed the core documentation, or you have installed expansion product (or customized application) help or auxiliary documentation onto your IBM FileNet P8 documentation application server. Otherwise, skip to “[Start and verify IBM FileNet P8 documentation web site](#)” on page 324.

1. Make sure that the server on which the documentation is deployed/installed is stopped, and that no processes are accessing the documentation.
2. Make sure you have copied the help for all your various expansion products, or optionally downloaded updated documentation and auxiliary documentation, to a designated application server location containing the IBM FileNet P8 help. Otherwise, you will have to repeat this procedure if you add new help later.
3. Open a command prompt or terminal on the application server.
4. From the command line, navigate to the `search` subdirectory under your `ecm_help` root directory.

5. If it has not been done already, modify the search-indexing script file that is appropriate for your operating system as follows:

UNIX

Add execute permissions (chmod 755) on the **indexFiles.sh** file because it is set to read-only in the documentation package.

Windows

Set permissions on the **indexFiles.bat** file, because it is set to read-only in the documentation package.

6. Using a text editor, open the search-indexing script file that is appropriate for your operating system:

UNIX

```
indexFiles.sh
```

Windows

```
indexFiles.bat
```

7. If necessary for your environment, set the JAVA_HOME variable in the script file with the path to your Java Runtime Environment (JRE) installation location.

NOTE The Java JRE installation subdirectory can be user-defined, so substitute your actual location, as appropriate.

8. Save your changes and close the text editor.
9. From the `ecm_help/search` directory, run the updated search-indexing script file that is appropriate for your server operating system:

UNIX

```
indexFiles.sh
```

Window

```
indexFiles.bat
```

NOTE As you run the search-indexing script file, you might notice periodic Parse Abort errors. You can ignore these error conditions, as they are benign and do not affect the overall indexing process.

10. Go on to the procedure in the next topic [“Start and verify IBM FileNet P8 documentation web site” on page 324.](#)

Start and verify IBM FileNet P8 documentation web site

Perform this procedure after you have updated (and, if necessary, reindexed) the IBM FileNet P8 documentation on a supported application server.

To verify the IBM FileNet P8 documentation web site

1. Start the IBM FileNet P8 documentation server. Use the appropriate instructions provided with your application server.
2. Verify that the application server and the new IBM FileNet P8 documentation web site are running. From your web browser, access the URL for your web environment, using your documentation server name, and port number, as in these examples:

WebSphere

`http://yourdocserver:9080/ecm_help/`

WebLogic

`http://yourdocserver:7001/ecm_help/`

JBoss

`http://yourdocserver:8080/ecm_help/`

The help system opens.

NOTE Apply the URL for your application server when it is time to configure the online help location for the various IBM FileNet P8 components, either while running installation programs or later via site preferences settings (for example, in Workplace or Workplace XT).

Upgrade and configure Content Engine and Content Search Engine

Complete the following upgrade tasks that apply to your existing version (3.5.x or 4.0.x) of Content Engine and Content Search Engine.

For upgrades from 3.5.x

1. To complete the pre-upgrade configuration, complete [Task 1 on page 327](#).
2. To install and upgrade Content Engine software, complete [Task 2a on page 333](#).
3. To upgrade standalone instances (if any) of FileNet Enterprise Manager, complete [Task 3 on page 342](#).
4. To install Content Engine software updates that have become available since the initial release of version 4.5, complete [Task 4 on page 344](#).
5. To install ECM Centera SDK library files, complete [Task 10 on page 416](#) only if Centera fixed content devices will be in your upgraded IBM FileNet P8 environment, and Centera fixed content devices are not in your existing environment.
6. To configure upgraded Content Engine instances, complete [Task 5a on page 345](#).
7. To install the latest Content Search Engine Client files on Content Engine servers, complete [Task 6 on page 390](#).
8. To install the latest Process Engine Client files on Content Engine servers, complete [Task 7 on page 391](#).
9. To deploy the Content Engine instances, complete [Task 8 on page 395](#).
10. If you will have Tivoli Storage Manager fixed content devices, complete one of the following tasks, depending on the type of application server where you have deployed Content Engine:
 - To install Tivoli Storage Manager client (WebSphere), complete [Task 9a on page 409](#).
 - To install Tivoli Storage Manager client (WebLogic), complete [Task 9b on page 411](#).
 - To install Tivoli Storage Manager client (JBoss), complete [Task 9c on page 414](#).
11. To complete the Content Engine post-deployment steps, complete [Task 11 on page 420](#).
12. To configure storage devices, complete [Task 13 on page 424](#).
13. To establish the FileNet P8 domain and Global Configuration Data (GCD), complete [Task 14 on page 427](#).
14. To create the object store data sources for your existing object stores, complete [Task 15 on page 435](#).
15. To upgrade Content Search Engine software from version 3.5.x, complete [Task 16a on page 451](#).
16. To upgrade Content Engine data, complete [Task 17 on page 480](#).
17. To complete the upgrade of Content Search Engine software from version 3.5.x, do [Task 18 on page 494](#).

For upgrades from 4.0.x

1. To verify that all P8 activity has completed, complete [Task 1 on page 327](#)
2. To upgrade ECM Centera SDK library files, complete [Task 10 on page 416](#) only if Centera fixed content devices will be in your upgraded IBM FileNet P8 environment, and either of the following conditions apply:
 - Centera fixed content devices are not in your existing environment.
 - Centera fixed devices are in your existing environment, your existing version of Content Engine is 4.0, and you have not installed any fix packs.
3. To upgrade Content Engine software, complete [Task 2b on page 337](#).
4. To install Content Engine software updates that have become available since the initial release of version 4.5, complete [Task 4 on page 344](#).
5. To install ECM Centera SDK library files, complete [Task 10 on page 416](#) only if Centera fixed content devices will be in your upgraded IBM FileNet P8 environment, and Centera fixed content devices are not in your existing environment.
6. To configure upgraded Content Engine instances, complete [Task 5b on page 380](#).
7. To install the latest Content Search Engine Client files on Content Engine servers, complete [Task 6 on page 390](#).
8. To install the latest Process Engine Client files on Content Engine servers, complete [Task 7 on page 391](#).
9. To deploy upgraded Content Engine instances, complete [Task 8 on page 395](#).
10. If you will have Tivoli Storage Manager fixed content devices, complete one of the following tasks, depending on the type of application server where you have deployed Content Engine:
 - To install Tivoli Storage Manager library paths (WebSphere), complete [Task 9a on page 409](#).
 - To install Tivoli Storage Manager library paths (WebLogic), complete [Task 9b on page 411](#).
 - To install Tivoli Storage Manager library paths (JBoss), complete [Task 9c on page 414](#).
11. Complete [Task 12 on page 423](#) if you are staging your IBM FileNet P8 upgrade over a period of time and not upgrading one or more of the other IBM FileNet P8 server components at this time.
12. To upgrade standalone instances (if any) of FileNet Enterprise Manager, complete [Task 3 on page 342](#).
13. To upgrade Content Search Engine software from version 4.0.x, complete [Task 16b on page 470](#).
14. To upgrade Content Engine data, complete [Task 17 on page 480](#).

Task 1: Complete pre-upgrade Content Engine configuration

The procedures in this topic prepare Content Engine for an upgrade from its current version: 3.5.x or 4.0.x. Each procedure title indicates whether it applies to upgrades from 3.5.x, 4.0.x, or both.

To verify that all in-progress event actions have finished (3.5.x or 4.0.x)

1. Start Enterprise Manager if it is not already running.
2. In each object store to be upgraded, perform the following substeps:
 - a. In the left pane, under the object store icon, right-click the **Search Results** folder, and choose **New Search**.
 - b. In the Content Engine Query Builder dialog box, choose **QueueItem** from the Select From Table list.
 - c. Retain all default settings and click **OK**. (Click **Yes** at the prompt for a WHERE clause.)
3. If any event items exist in the queue, you will see them in the Query Status dialog box. To remove unwanted items, perform the following substeps:
 - a. Set up the same search as in [Step 2](#); but this time select the **Delete Objects** check box in the **Action** tab of the Search dialog box, before clicking **OK**.
 - b. Click **OK** again to confirm the deletion.

To verify that publishing requests have been completed (3.5.x or 4.0.x)

1. Start Enterprise Manager if it is not already running.
2. In each object store to be upgraded, perform the following steps:
 - a. Expand the Publishing folder and click **Queue** and choose **View > All requests**.
 - b. Verify that the queue (right pane) of publishing requests is empty. If the queue is not empty, do the following:
 - i. Wait until all publish requests in the In Queue state or In Work state are processed.
 - ii. If any publish requests are in the In Error state, contact your publishing administrator for the appropriate action to take (such as retrying after correcting the error or just deleting the item).
3. In the left pane, under the object store icon, right-click the **Search Results** folder, and choose **New Search**.
4. In the Content Engine Query Builder dialog box, choose **PublishRequest** from the Select From Table list.
5. Retain all default settings and click **OK**, and then click **Yes** at the prompt for a WHERE clause.
6. Delete any publishing requests displayed in the Query Status window.

To verify that all in-progress Content Engine transactions involving content files have finished (3.5.x only)

To verify that all in-progress Content Engine transactions involving content files have finished (3.5.x only)

Before upgrading Content Engine, you must verify that all pending content transactions, indexing requests, and fixed-content migration requests have completed. Use the Content Resource Manager utility, as shown in the following steps.

CAUTION All transactions and requests must have completed before you upgrade Content Engine; otherwise the upgrade will fail.

1. On each machine where Content Engine 3.5.x is installed, complete the following steps, using the Windows Services program (in the Windows Computer Management snap-in):
 - a. Start File Store Service if it is not already running.
 - b. Stop Object Store Service and Content Cache Service.
2. On a machine where Content Engine 3.5.x is installed, start the `ce_install_path\RMU.exe` utility.
3. In the Content Resource Manager Utility window, complete the following steps:
 - a. Navigate to **Statistics > Transactions** and note the values of *Total prepared phase 1*, *Total committed*, and *Total aborted*.
 - b. Navigate to **Statistics > Can't Do Queue** and note the value of *Current items in the can't do queue*.
 - c. Add the values of *Total committed* and the *Total aborted*. If the sum equals the value of *Total prepared phase 1*, and the value of *Current items in the can't do queue* is zero, then all content transactions have completed.
 - d. Navigate to **Indexing Service > Index Control**. If the value of *Current index queue files* is zero, then all pending indexing requests have completed.
 - e. Navigate to **Fixed Content > Migration Queuing**. If the value of *Current number in queue* is zero, then all fixed-content migration requests have completed.
4. If all activity checked in [Step 3](#) has completed, then stop File Store Service on each machine where Content Engine 3.5.x is installed, and continue at ["To stop and disable all Content-Engine-related services on all servers in the FileNet P8 domain \(3.5.x only\)"](#) on page 329; otherwise, complete the following steps:
 - a. Exit from the Content Resource Manager utility.
 - b. Wait a few minutes, and then return to [Step 1 on page 328](#).

To update the trace log file location (4.0.x only)

If you changed the path to the application server (for example, by upgrading the application server software) after deploying version 4.0.x of Content Engine, you must now update the location of the trace log file, `p8_server_trace.log`; otherwise, trace logging will go to the wrong location, or the file will not get created at all.

To update the trace log file location, perform the following steps:

To stop and disable all Content-Engine-related services on all servers in the FileNet P8 domain (3.5.x only)

1. Start Enterprise Manager by double-clicking the FileNet Enterprise Manager icon on the desktop, or by choosing **Start > All Programs > FileNet P8 Platform > Enterprise Manager**.
2. Navigate to the level (domain, site, virtual server, or server instance) at which trace logging is configured, right-click the node at that level, and choose Properties.
3. Click the **Trace Control** tab, and perform the following substeps:
 - a. If the current value of the Log File Output Location parameter is not consistent with the version of the application server, edit the value as needed.

The following table shows default locations (at the server instance level) for the trace log file, starting at *install_root*, the installation path for the application server.

Application Server Type	Path to Trace Log File
WebSphere	<i>install_root/profiles/profile_name/FileNet/server_name/p8_server_trace.log</i>
WebLogic	<i>install_root/user_projects/domains/domain_name/FileNet/server_name/p8_server_trace.log</i>
JBoss	<i>install_root/bin/FileNet/server_name/p8_server_trace.log</i>

- b. Click **OK**.

To stop and disable all Content-Engine-related services on all servers in the FileNet P8 domain (3.5.x only)

1. On each machine where version 3.5.x of Content Engine Server software is installed, log on with local administrator permissions.
2. Stop and disable the following services using the Windows Services program (in the Windows Computer Management snap-in):
 - Apache2
 - Content Engine Content Cache Service
 - Content Engine File Store Service
 - Content Engine Object Store Service
 - FileNet Publishing HTML Plug-in Service
 - FileNet Publishing PDF Plug-in Service
 - Process Services Manager
 - Wasp Server for Java
3. Right-click the Apache services monitor in the Windows system tray and click **Exit**.

To verify the directory permissions on file stores (3.5.x only)

- If the application server on which Content Engine Server 4.5 is to be deployed is running on Windows, then give the following users write permission to the root directory where a 3.5.x file store is located. (This procedure is necessary to allow conversion to a 4.5 file storage area during upgrade.)
 - The user running the Upgrader tool (*config_mgr_user*)
 - The user running the application server (*ce_appserver_admin*). For WebSphere on Windows, this user is a service log-on account)

For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

To update the Vital Product Data (VPD) script (4.0.x and Solaris only)

Perform the following steps only if Content Engine Server is at version 4.0.1 on a Solaris machine, a non-root user installed the current version of Content Engine Server, and a different non-root user will upgrade Content Engine Server to version 4.5:

1. Navigate to the `$HOME/InstallShield//Universal/FileNet/CE/Gen1/_vpddb/` directory.
2. Create a backup of the `vpd.script` file and then edit the `vpd.script` file as follows:
 - a. Change all instances of `$REG_CE_LOCATIONS$` to the same Content Engine Server installation directory. For example,
`/opt/FileNet/ContentEngine`
 - b. Change all the occurrences of `$40Installeruser$` to the same Content Engine Server installation directory. For example,
`/opt/FileNet/ContentEngine`
 - c. Save your edits.

To create the webSphereDefaultIsolationLevel custom property (4.0.x and WebSphere only)

Perform this procedure only if all the following conditions apply to your IBM FileNet P8 environment:

- Content Engine is deployed on WebSphere.
- Your database type is DB2 or Microsoft SQL Server.
- You intend to upgrade Content Engine from version 4.0.1.

This procedure creates the `webSphereDefaultIsolationLevel` custom property, which needs to exist for the GCD XA and non-XA data sources before you can upgrade Content Engine to version 4.5.

1. Log on to the WebSphere administrative console.
2. Navigate to **Resources > JDBC > Data sources**.
3. Click the **GCD non-XA data source** (for example, FNGCDDS)

4. In the Configuration tab, click **Custom properties** under Additional Properties.
5. Click **New**, and create a property as follows:
 - a. Set the name to `webSphereDefaultIsolationLevel`.
 - b. Set the value to `2`.
 - c. Set the type to `java.lang.String`.
6. Click **Apply** and save your changes to the Master configuration.
7. Perform [Step 4](#) through [Step 6](#) for the GCD XA data source (for example, FNGCDSXA).

To verify permissions on the Engine-DS.xml file (4.0.x and JBoss only)

If you deployed Content Engine Server 4.0.x on JBoss application server, perform the following steps:

1. Navigate to the directory containing the `Engine-DS.xml` file. The typical location for this file is:

UNIX

`/opt/FileNet/ContentEngine/lib`

Windows

`C:\Program Files\FileNet\ContentEngine\lib`

2. Ensure that the `Engine-DS.xml` file has both read and write permissions.

To back up the database (3.5.x or 4.0.x)

1. Use your existing database backup solution to back up the Content Engine object store databases.
2. Back up the GCD.
 - For upgrades from 4.0.x, backup the GCD database. FNGCDDDB is the default name of the GCD database.
 - For upgrades from 3.5.x, make a backup copy of the 3.5.2 GCD file. The default location is `C:\Program Files\FileNet\Content Engine\sysconfig\sysinit\sysinit.dat`.

To shut down CFS Exporter (CFS 4.0 only)

If your system includes Content Federation Services (CFS) 4.0.x, you must shut down the CFS Exporter before upgrading Content Engine to 4.5. Leave the Exporter shut down until you upgrade CFS to 4.5. Refer to the *IBM FileNet Content Federation Services Installation and Upgrade Guide* for instructions.

To verify that object store names do not conflict with reserved words (3.5.x and 4.0.x)

Verify completion of the task in the topic "FileNet P8 Administrator upgrade tasks" in *Plan and Prepare Your Environment for IBM FileNet P8* that describes how you must change any class or property names in 3.5.x or 4.0.x object stores that are the same as any of the names listed in the

reserved word appendix, as the upgrade tool will check for naming conflicts and require you to change the names before proceeding. See [“New Content Engine classes and properties” on page 702](#) for the list of names.

Task 2a: Upgrade Content Engine software from 3.5.x

If you are upgrading from Content Engine 3.5.x on Windows, you can upgrade and continue to use Windows, or you can migrate your Content Engine to UNIX. In either case, you must prepare the Content Engine application for deployment and then upgrade the object store data.

Migrating your Content Engine version 3.5.x on a Windows server to Content Engine version 4.5 on UNIX requires a new installation of Content Engine on your UNIX machine. You also need access to a Windows machine to install and run FileNet Enterprise Manager and the Upgrader tool.

Use a procedure in this topic to install or upgrade the following Content Engine components interactively or silently:

- Content Engine Server
- Configuration Manager
- .NET Clients (including FileNet Enterprise Manager)
- Content Engine Upgrader
- FileNet Deployment Manager

If the Content Engine installer detects an existing Content Engine installation, the software will be upgraded.

On UNIX-based or Windows-based application servers, you can install Content Engine Server, Configuration Manager, or both. The remaining components require a Windows-based machine.

Install the .NET Clients software only on machines where you intend to run either the FileNet Enterprise Manager administrative client or a customized client application.

The Content Engine Upgrader is required only to upgrade Content Engine and Content Search Engine data from an earlier version.

The FileNet Deployment Manager is an optional component that you can use to deploy test systems into full production. See the IBM FileNet P8 help topic [Application Deployment > Get Started with FileNet Deployment Manager](#) for details.

The application server must be the Deployment Manager node (WebSphere) or the Administrator node (WebLogic) if you are installing in a managed environment.

To install or upgrade Content Engine

1. Log on to the application server as `ce_install_user`. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Access the Content Engine software package.
3. (Red Hat Linux only) On the machine where you are going to run the Content Engine installation program, install the shared library `libstdc++.so.5`:
 - a. Access the Red Hat 5 installation software.

- b. Install the package `compat-libstdc++-33-3.2.3-61.i386.rpm`, which contains the necessary shared library `libstdc++.so.5`.
- 4. Start the Content Engine installation. For information on parameter values, see ["Installation and upgrade worksheet"](#) on page 229 in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE Installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- To install interactively:
 - i. Run one of the following commands in the software package, depending on your operating system:

Platform	Command
AIX	<code>P8CE-4.5.0-AIX.BIN</code>
HPUX	<code>P8CE-4.5.0-HPUX.BIN</code>
HPUXi	<code>P8CE-4.5.0-HPUXI.BIN</code>
Linux	<code>P8CE-4.5.0-LINUX.BIN</code>
Solaris	<code>P8CE-4.5.0-SOL.BIN</code>
Windows	<code>P8CE-4.5.0-WIN.EXE</code>
zLinux	<code>P8CE-4.5.0-ZLINUX.BIN</code>

- ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
Welcome	Click Next to proceed with the installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Software License Agreement	Review and accept the license agreement, and then click Next .

In this screen...	Perform this action...
Choose Components (Windows only)	<p>Set the Install Set value to Content Engine and choose the components you want to install:</p> <ul style="list-style-type: none"> Content Engine Server Choose this component to install the Content Engine and Configuration Manager software on this machine. .NET Clients and FileNet Enterprise Manager Choose both components if you want to administer Content Engine from this machine. Tools Choose Tools to install Configuration Manager, Deployment Manager, and Content Engine Upgrader software on this machine. <p>NOTE If you choose Content Engine Server, you don't need Tools unless you also want Deployment Manager and Content Engine Upgrader on this machine.</p> <p>Click Next to continue.</p>
Choose Install Path	Specify the directory where you want to install Content Engine. If the directory (or its parent) does not exist, the program will create it. Click Next to continue.
Specify Documentation URL	Optionally specify the URL for the IBM FileNet P8 documentation that you deployed in "Install IBM FileNet P8 Platform documentation (All)" on page 23, and then click Next .
.NET API COM Compatibility Layer (CCL) URL (Windows only)	Specify a URL for the .NET API COM Compatibility Layer if you intend to configure CCL for a custom COM-based FileNet P8 application, and then click Next .
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing software.
Installation Complete	Click Done .

- To install silently:
 - Open the `CE_silent_install.txt` file in the software package for editing.
 - Set the parameter values in the `CE_silent_install.txt` file for your site.

For information on the Content Engine parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

- iii. Run one of the following commands in the software package, depending on your operating system:

Platform	Command
AIX	P8CE-4.5.0-AIX.BIN -f CE_silent_install.txt -i silent
HPUX	P8CE-4.5.0-HPUX.BIN -f CE_silent_install.txt -i silent
HPUXi	P8CE-4.5.0-HPUXI.BIN -f CE_silent_install.txt -i silent
Linux	P8CE-4.5.0-LINUX.BIN -f CE_silent_install.txt -i silent
Solaris	P8CE-4.5.0-SOL.BIN -f CE_silent_install.txt -i silent
Windows	P8-CE-4.5.0-WIN.EXE -f CE_silent_install.txt -i silent
zLinux	P8CE-4.5.0-ZLINUX.BIN -f CE_silent_install.txt -i silent

- 5. Check for errors in the `ce_install_log_4_5_0.txt` Content Engine error log file.
- 6. If you are migrating to UNIX, repeat [Step 1](#) through [Step 5](#) on a Windows machine to install FileNet Enterprise Manager and the Upgrader tool. Both programs are required to complete the upgrade.
- 7. Continue at [“Upgrade FileNet Enterprise Manager” on page 342](#).

Task 2b: Upgrade Content Engine software from 4.0.x

Use the procedure in this topic to upgrade Content Engine version 4.0.x to version 4.5. On UNIX-based application servers, you will upgrade Content Engine Server and install Configuration Manager. On Windows-based application servers, you will upgrade or install anew some or all of the following components.

- Content Engine Server
- Configuration Manager
- .NET Clients (including FileNet Enterprise Manager)
- Content Engine Upgrader
- FileNet Deployment Manager

NOTE FileNet Deployment Manager is used to migrate system data from a test environment to a production environment. See the IBM FileNet P8 help topic [Application Deployment > Get Started with FileNet Deployment Manager](#) for details.

CAUTION You must upgrade components that are in your existing installation, and you can install new components as well.

To upgrade Content Engine software from 4.0.x

1. Log on to the application server as *ce_upgrade_user*, the user who installed the current version of Content Engine.

If the user who installed the current version is different than the user who will install the new version, make sure that you have completed the steps in [“Assign directory permissions for Content Engine upgrade for 4.0.x to 4.5 on UNIX” on page 186](#) in *Plan and Prepare Your Environment for IBM FileNet P8*. That topic also contains information on changing the installation user.

Continue with one of the following steps:

- For AIX, where the root user installed CE 4.0.x, and *ce_upgrade_user* is non-root, continue at [Step 2](#).
 - All others, continue at [Step 5](#).
2. (AIX only) Shut down the application server.
 3. (AIX only) Start the Content Engine uninstall.
 - To uninstall interactively
 - i. Navigate to the `_uninst2` directory in the current version of Content Engine and run the following command to uninstall it:

```
uninstaller.bin
```
 - ii. Wait until the uninstall completes before continuing.

- To uninstall silently:
 - i. Navigate to the `_uninst2` directory in the current Content Engine installation.
 - ii. Either edit the `CE_silent_uninstall.txt` sample response file or record your own response file. To record a response file, run the following command:

CAUTION Do not specify a path to the response file within the Content Engine install directory; if you do this, the file will be deleted.

```
./uninstaller.bin -options -record path_to_response_file
```

- iii. Run the uninstall program.

```
./uninstaller.bin -options path_to_response_file -silent
```

- iv. Wait until the uninstall completes before continuing.

4. (AIX only) Uninstall Content Search Engine Client Updater.
5. Make a back up copy of the `ce_install_path/servers.xml` file in a temporary location, such as `/tmp`.
6. (Windows only) Navigate to the `ContentEngine` directory and give Full Control permission to the user who will install the new version of Content Engine.
7. Log off the Content Engine Server machine, and log back on as `ce_upgrade_user`, the user who will install the new version.
8. Copy the new version of the Content Engine software package to a temporary location on the application server, such as `/tmp` (UNIX) or `C:\Temp` (Windows) and set the current directory to that location.
9. Start the Content Engine upgrade (which will uninstall the current version if needed). For information on parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE Installer.
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
 - Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- To upgrade interactively:

- i. Run one of the following commands in the software package, depending on your operating system, and then follow the instructions on the wizard screens:

Platform	Command
AIX	P8CE-4.5.0-AIX.BIN
HPUX	P8CE-4.5.0-HPUX.BIN
HPUXi	P8CE-4.5.0-HPUXi.BIN
Linux	P8CE-4.5.0-LINUX.BIN
Solaris	P8CE-4.5.0-SOL.BIN
Windows	P8CE-4.5.0-WIN.EXE
zLinux	P8CE-4.5.0-ZLINUX.BIN

- ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement, and then click Next.</p>
Choose Components (Windows only)	<p>Set the Install Set value to Content Engine and choose the components you want to install:</p> <ul style="list-style-type: none"> • Content Engine Server <p>Choose this component to install the Content Engine and Configuration Manager software on this machine.</p> • .NET Clients and FileNet Enterprise Manager <p>Choose both components if you want to administer Content Engine from this machine.</p> • Tools <p>Choose Tools to install Configuration Manager, Deployment Manager, and Content Engine Upgrader software on this machine.</p> <p>NOTE If you choose Content Engine Server, you don't need Tools unless you also want Deployment Manager and Content Engine Upgrader on this machine.</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Choose Install Path	Specify the directory where you want to install Content Engine. If the directory (or its parent) does not exist, the program will create it. Click Next to continue.
Specify Documentation URL	Optionally specify the URL for the IBM FileNet P8 documentation that you deployed in "Install IBM FileNet P8 Platform documentation (All)" on page 23, and then click Next .
.NET API COM Compatibility Layer (CCL) URL (Windows only)	Specify a URL for the .NET API COM Compatibility Layer if you intend to configure CCL for a custom COM-based FileNet P8 application, and then click Next .
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing software.
Installation Complete	<p>Selecting the Launch Configuration Manager check box will automatically start Configuration Manager, the tool for configuring Content Engine.</p> <p>WARNING Do not select the check box if version 4.0.x of Content Engine is a cluster deployment, or a non-cluster Network Deployment (WebSphere only). In this case you must edit the <code>servers.xml</code> file first (see "Edit the servers.xml file" on page 381), and then manually start Configuration Manager.</p> <p>Click Done.</p>

- To upgrade silently:
 - Run one of the following commands in the software package, depending on your operating system:

Platform	Command
AIX	P8CE-4.5.0-AIX.BIN -f CE_silent_install.txt -i silent
HPUX	P8CE-4.5.0-HPUX.BIN -f CE_silent_install.txt -i silent
HPUXi	P8CE-4.5.0-HPUXI.BIN -f CE_silent_install.txt -i silent
Linux	P8CE-4.5.0-LINUX.BIN -f CE_silent_install.txt -i silent
Solaris	P8CE-4.5.0-SOL.BIN -f CE_silent_install.txt -i silent
Windows	P8-CE-4.5.0-WIN.EXE -f CE_silent_install.txt -i silent
zLinux	P8CE-4.5.0-ZLINUX.BIN -f CE_silent_install.txt -i silent

10. Check for errors in the Content Engine error log file `ce_install_path/ce_install_log_4_5_0.txt`, where `ce_install_path` is the installation path to Content Engine.
11. Copy the `servers.xml` file from its temporary location back to its previous location if you performed [Step 2 on page 337](#).
12. Continue at [“Upgrade FileNet Enterprise Manager” on page 342](#).

Task 3: Upgrade FileNet Enterprise Manager

If you did not upgrade FileNet Enterprise Manager as part of a Content Engine upgrade, perform the following procedure to upgrade FileNet Enterprise Manager interactively or silently.

To upgrade FileNet Enterprise Manager

1. On the machine where you will upgrade FileNet Enterprise Manager, log on as a member of the Local Administrators group or the Power Users group.
2. Access the Content Engine software package.
3. Start the FileNet Enterprise Manager installation. For information on parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).

The wizard will uninstall the current version of the software and install the new version in the same location.

- To install interactively:
 - i. Run the following command in the software package:
`P8CE-4.5.0-Win.exe`
 - ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
Welcome	Click Next to proceed with the installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Software License Agreement	Review and accept the license agreement, and then click Next .
Choose Components	Set the Install Set value to Content Engine, select the check boxes for .NET Clients and FileNet Enterprise Manager, and clear all the other check boxes. Click Next to continue.

In this screen...	Perform this action...
Choose Install Path	Specify the directory where you want to install FileNet Enterprise Manager. If the directory (or its parent) doesn't exist, the program will create it. Click Next to continue.
Specify Documentation URL	Optionally specify the URL for the IBM FileNet P8 documentation that you deployed in " Install IBM FileNet P8 Platform documentation (All) " on page 23, and then click Next .
.NET API COM Compatibility Layer (CCL) URL	Specify a URL for the .NET API COM Compatibility Layer if you intend to configure CCL for a custom COM-based FileNet P8 application, and then click Next .
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing FileNet Enterprise Manager.
Installation Complete	Click Done .

- To install silently:
 - i. Open the `silent_installer.properties` file in the software package for editing.
 - ii. Set the parameter values in the `silent_installer.properties` file for your site. Be sure to set the `CHOSEN_INSTALL_FEATURE_LIST` parameter value to:


```
DotNetClients,AdminTools
```
 - iii. Save your edits.
 - iv. Run the following command in the software package:


```
P8-CE-4.5.0-WIN.EXE -f silent_installer.properties
```

Task 4: Install Content Engine software updates

Perform the procedure in this topic for each Content Engine instance to install software updates, fix packs or interim fixes.

To install the Content Engine software updates

1. For instructions on how to obtain the latest Content Engine software updates, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).
2. Open the readmes for the Content Engine software updates and perform the installation procedures in the readmes on each Content Engine instance.

If you installed an instance into a managed environment, perform the procedure on the Deployment Manager node (WebSphere) or the Administrator node (WebLogic).
3. Continue at one of the following topics:
 - If you are upgrading from version 3.5.x, continue at [“Configure Content Engine instances upgraded from 3.5.x” on page 345](#).
 - If you are upgrading from version 4.0.x and do not need to upgrade your Process Engine client files to 4.5, continue with [“Configure Content Engine instances upgraded from 4.0.x” on page 380](#).

Task 5a: Configure Content Engine instances upgraded from 3.5.x

You will configure and deploy all of your Content Engine application instances with the new Configuration Manager tool. Configuration Manager prepares the Content Engine application for deployment on the application server. A single Content Engine application instance equates to one deployed application on your application server.

You first provide and apply information about your Content Engine application environment, and then later deploy the application. You can configure multiple instances before deploying any of them, or you can configure and deploy one instance at a time. This topic provides the configuration steps for one instance. Repeat the steps as need for additional instances in your environment.

You use Configuration Manager to configure the following information for the Content Engine application instance:

- Application server properties
- Java Database Connectivity (JDBC) data source properties
- Directory service (LDAP) provider
- Content Engine bootstrap properties

TIPS

- (WebSphere only) For best results, configure no more than one Content Engine instance in a WebSphere profile.
- Use the command line version of Configuration Manager if either of these conditions is true:
 - Your system is Novell SUSE Linux Enterprise 9. You can configure Content Engine only with the command line.
 - You need an accessible software version of Configuration Manager for people with disabilities to use.
- To avoid having to perform the Content Engine deployment task multiple times, perform the deployment after you install the Process Engine Client files. Configuration Manager can deploy a Content Engine application any time after you configure the other properties for your environment. However, you must also perform the deployment task after you install or update the Process Engine Client files on the Content Engine server. The Process Engine Client files are required if you set up Process Engine in your IBM FileNet P8 environment.

Grant permissions to the Configuration Manager user

Complete the following procedure to grant the file and directory permissions required by *config_mgr_user*, the user who will run Configuration Manager.

To grant permissions to the Configuration Manager user

1. Log on to the application server where you installed Content Engine as *ce_install_user*. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Navigate to *ce_install_path/tools/configure*, which contains both the command line and graphical user interfaces of Configuration Manager, where *ce_install_path* is the path in which you installed Content Engine.
3. Grant *config_mgr_user* execute permission (UNIX) or read & execute permission (Windows) on the executable file of the interface of Configuration Manager you intend to use:

- To enable use of the graphical user interface, grant permission to one of the following files in the *configuration/CMUI* directory:

UNIX

`cmui`

Windows

`cmui.exe`

- To enable use of the command line interface, grant permission to one of the following files in the *configuration* directory:

UNIX

`configmgr.sh`

Windows

`configmgr.bat`

4. Grant write permission to the directory where you want Configuration Manager to place the configuration XML files it will generate.

If you are not going to specify this directory when you run Configuration Manager, grant write permission on the default directory, *ce_install_path/tools/configure/profiles*.

5. Log off the Content Engine application server, and log back on as *config_mgr_user*, the Configuration Manager user.

Configure instances using the graphical user interface

In this subtopic you will configure a Content Engine application on an application server using the graphical user interface version of Configuration Manager. Use the information in your installation worksheet to specify the values for the parameters required to configure Content Engine. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

For more information on the properties and values you set in the Configuration Manager, roll your mouse over the property name to view the tool tip help for the property. Refer to the appendix [“Configuration Manager user interface reference” on page 645](#) for complete information on using the graphical user interface.

To set the GUI password save option (optional)

- By default, Configuration Manager does not save passwords that you enter in the graphical user interface. That is, each time you start Configuration Manager and open a saved profile, you will need to specify any passwords required by the tasks and for the application server properties. For more information on password handling and how to change the password save setting, see [“Handling passwords in Configuration Manager” on page 643](#).

To start Configuration Manager

Complete one of the following steps, depending on the operating system that runs on the machine where you installed Content Engine:

UNIX

- Run the following command:

```
ce_install_path/tools/configure/CMUI/cmui
```

Windows

- Complete one of the following actions:
 - Double-click the **FileNet Configuration Manager** desktop shortcut.
 - Select **Start > All Programs > IBM FileNet P8 Platform > FileNet Configuration Manager**.
 - Run `ce_install_path\tools\configure\CMUI\cmui.exe`.

To create a configuration profile

- Start the Create New Configuration Profile wizard by selecting **File > New Configuration Profile**, and use the information in your worksheet to specify the values for the parameters in the wizard screens. For more information, see [“Installation and upgrade worksheet” on page 229 of Plan and Prepare Your Environment for IBM FileNet P8](#).

In this screen...	Perform this action...
Configuration Profile Information	<ul style="list-style-type: none"> • Provide the following information for the profile: <ul style="list-style-type: none"> – Enter a name for the profile. The name must be valid as a directory name for your operating system. Configuration Manager will create a directory with the profile name for storing the configuration files associated with this profile. For more information of profiles, see “Configuration profile concepts” on page 639 in the Configuration Manager reference appendix. – Specify the directory for the profile. Either type in the full path to the profile directory or click Browse to locate the directory. The default path is <code>ce_install_path/tools/configure/profiles</code>, where <i>ce_install_path</i> is the location where Content Engine is installed. • Click Next. • Choose an application server type for the profile. Select WebSphere, JBoss, or WebLogic, and then click Next. <p>NOTE If you click Finish instead of Next, you will need to come back later to supply the required application server properties before you can run the configuration tasks.</p> • Continue at one of the following screens: <ul style="list-style-type: none"> – “Set Application Server Properties for WebSphere” on page 349 – “Set Application Server Properties for JBoss” on page 350 – “Set Application Server Properties for WebLogic” on page 350

In this screen...	Perform this action...
Set Application Server Properties for WebSphere	<p>This screen is displayed only if you selected WebSphere in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the Global Configuration Database (GCD), and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the name of the WebSphere application server cell where Content Engine will be deployed. – If you have already configured WebSphere to use certificates, clear the “Do not use SSL certificates for server communications” check box. Otherwise, leave the check box selected. <p>IMPORTANT If you select this check box, your WebSphere settings for communicating with other servers, such as Application Engine, will change.</p> • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 351.

In this screen...	Perform this action...
Set Application Server Properties for JBoss	<p>This screen is displayed only if you selected JBoss in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the name of the JBoss application server name where Content Engine will be deployed. • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 351.
Set Application Server Properties for WebLogic	<p>This screen is displayed only if you selected WebLogic in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the Global Configuration Database (GCD), and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the machine name or the IP address of the local host for the application server host. – Enter the fully qualified path to the WebLogic application server user projects directory, or click Browse to locate the directory.

In this screen...	Perform this action...
Set Application Server Properties for WebLogic <i>(continued)</i>	<ul style="list-style-type: none"> – Enter the WebLogic application server domain name where Content Engine will be deployed. – Enter the name of the WebLogic application server name where Content Engine will be deployed. • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 351.
Select the tasks that you want included in the Configuration Profile	<ul style="list-style-type: none"> • Select the tasks that you want to include in this profile. For a new Content Engine installation, you need to complete all four configuration tasks: <ul style="list-style-type: none"> – Configure JDBC Data Sources – Configure LDAP – Configure Bootstrap – Deploy Application. • Click Finish to create the profile and save the application server properties.

The profile you created is displayed as an icon in the profile pane (left-hand pane), along with icons for the tasks you selected.

To configure a Content Engine instance using the Configuration Manager graphical user interface

You will complete the configuration tasks in this procedure to prepare the Content Engine application instance for deployment on the application server. You will complete the deploy task later in [“Deploy Content Engine instances” on page 78](#).

You can perform the configuration tasks in any order, and you do not need to complete work on one configuration task before starting another. You can save your edits, switch between tasks, close the tasks, and reopen tasks as needed.

1. Start or stop the application server, depending on its type:

WebSphere and WebLogic

Start the application server if it is not already running.

JBoss

Stop the application server.

2. Refer to your installation worksheet to specify the values for the properties required for [Step 3](#) through [Step 5](#). For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select one of these Configuration Manager options:
 - CM: Configure JDBC Data Sources
 - CM: Configure LDAP
 - CM: Configure Bootstrap Properties
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify Setup Type contains "Installation".
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
3. Provide property values for the JDBC data sources for the Global Configuration Database (GCD).
- a. If your configuration profile is not open in Configuration Manager, open the profile you created earlier in ["To create a configuration profile" on page 348](#).
 - b. Right-click **Configure JDBC Data Sources** in the profile pane, and select **Edit Selected Task**.
 - c. Provide the property values for your database, using the appropriate table for your database type:

DB2® for Linux, UNIX, Windows

In this field...	Provide this information...
JDBC driver name	Select "DB2 Universal JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the Global Configuration Database (GCD) and object stores.
Database name	The name of the Global Configuration Database (GCD) database.

In this field...	Provide this information...
Database user name	The name of the DB2 Global Configuration Database (GCD) tablespace user.
Database password	The password for the DB2 Global Configuration Database (GCD) tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e . The default is enabled.

DB2 for z/OS®

In this field...	Provide this information...
JDBC driver name	Select “DB2 for z/OS Universal JDBC Driver” from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, <code>FNGCDDS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, <code>FNGCDDSXA</code> .

In this field...	Provide this information...
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the Global Configuration Database (GCD) and object stores.
Database name	The name of the Global Configuration Database (GCD) database instance name.
Database user name	The name of the DB2 Global Configuration Database (GCD) tablespace user.
Database password	The password for the DB2 Global Configuration Database (GCD) tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e . The default is enabled.

MS SQL Server

In this field...	Provide this information...
JDBC driver name	Select "Microsoft JDBC Driver 2005" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the SQL Server database instance in which you create databases for the Global Configuration Database (GCD) and object stores.
Database name	The name of the Global Configuration Database (GCD) database for SQL Server.
Database user name	The name of the SQL Server user with administrative rights to the Global Configuration Database (GCD) database.
Database password	The password for the SQL Server user with administrative rights to the Global Configuration Database (GCD) database. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.

In this field...	Provide this information...
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e . The default is enabled.

Oracle

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, <code>FNGCDDS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, <code>FNGCDDSXA</code> .
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database name	The SID of the Oracle database containing the Global Configuration Database (GCD) tablespace.
Database user name	The name of the Oracle Global Configuration Database (GCD) tablespace owner.
Database password	<p>The password for the Oracle Global Configuration Database (GCD) tablespace owner. The tool encrypts the password for you.</p> <p>Enter the password again in the Confirm field.</p>

In this field...	Provide this information...
JDBC data source file name	<p>The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the Global Configuration Database (GCD) and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	<p>Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e. The default is enabled.</p>

Oracle RAC

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver (RAC support)" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
Database server name RAC node 1	The host name of the machine where the database software is installed for node 1.
Database port number RAC node 1	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database server name RAC node 2	The host name of the machine where the database software is installed for node 2.
Database port number RAC node 2	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database service name	The SID of the Oracle database containing the Global Configuration Database (GCD) tablespace.
Oracle RAC retries	The number of retries for Oracle RAC.
Oracle RAC delay	The amount of delay for Oracle RAC.
Database user name	The name of the Oracle Global Configuration Database (GCD) tablespace owner.
Database password	The password for the Oracle Global Configuration Database (GCD) tablespace owner. The tool encrypts the password for you. Enter the password again in the Confirm field.

In this field...	Provide this information...
JDBC data source file name	<p>The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the Global Configuration Database (GCD). The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step e . The default is enabled.

- d. Select **File > Save** to save your changes.
- e. Apply the JDBC property settings by right-clicking **Configure JDBC Data Sources** in the profile pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the JDBC task properties.

TIP You can check the completion status of a task by right-clicking **Configure JDBC Data Sources** in the profile pane, and select **Check Task Status**.

- f. Close the Configure JDBC Data Sources task pane.

IMPORTANT In this step, you created the Global Configuration Database (GCD) data sources. You will create the initial object store data sources later in [“Create the data sources for an object store” on page 117](#).

- 4. Provide property values for the LDAP provider:
 - a. Right-click **Configure LDAP** in the profile pane, and select **Edit Selected Task**.
 - b. Provide the property values for your LDAP provider, using the appropriate table for your provider.

Tivoli Directory Server

In this field...	Provide this information...
Directory service provider type	Select "Tivoli Directory Server" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Tivoli Directory Server.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Tivoli Directory Server. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.

In this field...	Provide this information...
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	<p>WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.</p>
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.

In this field...	Provide this information...
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later in Step d . The default is enabled.

Active Directory

In this field...	Provide this information...
Directory service provider type	Select "Active Directory" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Active Directory.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Active Directory. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in Active Directory. For example, (sAMAccountName={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.

In this field...	Provide this information...
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.

In this field...	Provide this information...
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later in Step d . The default is enabled.

ADAM or AD LDS

In this field...	Provide this information...
Directory service provider type	Select “ADAM or AD LDS” from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to ADAM or AD LDS.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in ADAM or AD LDS. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).

In this field...	Provide this information...
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>

In this field...	Provide this information...
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later in Step d . The default is enabled.

eDirectory

In this field...	Provide this information...
Directory service provider type	Select eDirectory from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to eDirectory.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in eDirectory. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).

In this field...	Provide this information...
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.

In this field...	Provide this information...
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	<p>WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.</p>
SSL enabled	<p>WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.</p>
Kerberos support	<p>JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.</p>
Task enabled	<p>Select the Task enabled check box to execute the configure LDAP task later in Step d. The default is enabled.</p>

Sun Java Directory Server

In this field...	Provide this information...
Directory service provider type	<p>Select "Sun Java Directory Server" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.</p>

In this field...	Provide this information...
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Sun Java Directory Server.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Sun Java Directory Server. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected. WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl. WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.

In this field...	Provide this information...
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later in Step d . The default is enabled.

- c. Select **File > Save** to save your changes.
- d. Apply the LDAP property settings by right-clicking **Configure LDAP** in the profile pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the LDAP task properties.

TIP You can check the completion status of the task by right-clicking **Configure LDAP** in the profile pane, and select **Check Task Status**.

- e. Close the Configure LDAP task pane.
5. Provide property values for Content Engine bootstrap.
 - a. Right-click **Configure Bootstrap Properties** in the profile pane, and select **Edit Selected Task**.
 - b. Provide the bootstrap property values, using the following table.

In this field...	Provide this information...
Content Engine EAR path	The fully qualified path to the Content Engine EAR file that was installed by the Content Engine installation program. For example, /opt/FileNet/ContentEngine/lib/Engine-ws.ear or c:\Program Files\FileNet\ContentEngine\lib\Engine-ws.ear.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the Global Configuration Database (GCD) tablespace or database. For example, FNGCDDSXA.

In this field...	Provide this information...
Bootstrapped EAR directory	The name of a subdirectory that will store the EAR file that contains the Content Engine bootstrap information. The bootstrap information is needed for creating the GDC and for starting Content Engine. Specify the directory relative to the ce_install_path/lib directory. For example, to specify /opt/FileNet/ContentEngine/lib/bootstrap, enter "bootstrap".
Bootstrap user name	The name of a directory server user that accesses the Global Configuration Database (GCD) data sources. Use only the short name of the bind user defined by the LDAP user attribute. For example, 'administrator'.
Bootstrap password	The password for the directory server user that accesses the Global Configuration Data (GCD) data sources. The tool encrypts the password for you.
Master key	<p>A word or phrase of any length that is used to encrypt sensitive Global Configuration Database (GCD) entries. The tool encrypts the password for you.</p> <p>The master key is used to configure the GCD settings for the Content Engine bootstrap settings. Store the master key in a secure location, as it is not retrievable. You will have to specify it later any time you access the GCD with applications built with non-FileNet APIs.</p>
Web Services HTTP port	The Content Engine Web Services HTTP port number. The Content Engine Web Service (CEWS) is an industry standards-conformant SOAP interface to the FileNet Content Engine. It allows applications to access most of the functionality available through the Content Engine APIs. The default is 9080. For a cluster deployment, this port number must be the same value on each server in the cluster.
Task enabled	Select the Task enabled check box to execute the configure LDAP task in Step d . The default is enabled.

- c. Select **File > Save** to save your changes.
- d. Apply the bootstrap property settings by right-clicking **Configure Bootstrap Properties** in the profile pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the bootstrap properties.

TIP You can check the completion status of the task by right-clicking **Configure Bootstrap Properties** in the profile pane, and select **Check Task Status**.

- e. Close the Configure Bootstrap task pane.
- 6. Continue at [“Install the latest Content Search Engine Client files on Content Engine servers” on page 390.](#)

Configure instances using the command line interface

In this subtopic you will configure a Content Engine instance on a given application server using the command-line version of Configuration Manager. Configuring a Content Engine instance involves four major steps (repeat the steps to configure another instance):

- Generate the configuration XML files that contain the properties and values used to perform various tasks required to configure the environment for a Content Engine instance. See [“Generate the configuration XML files for a Content Engine instance” on page 372.](#)
- Edit the configuration XML files by inserting your site’s properties and values. See [“Edit the configuration XML files for a Content Engine instance” on page 375.](#)
- Execute the configuration XML files you edited. See [“Execute the configuration XML files for a Content Engine instance” on page 377.](#)
- Check that the configuration XML files that you executed have resulted in a correct configuration of the Content Engine instance. See [“Check the completion status of Content Engine configuration tasks” on page 378.](#)

If you are deploying multiple Content Engine instances on the same machine, you will need to generate, edit, and deploy a complete set of configuration files for each instance. Store the configuration files for each instance in a separate directory.

You can navigate through the steps above by generating all the configuration XML files before editing, executing, or verifying any of them; or you can generate, edit, execute, and verify one file at a time.

NOTE This subtopic refers to Configuration Manager as `configmgr`. When you run the tool, substitute `configmgr.sh` (on UNIX) or `configmgr.bat` (on Windows) in place of `configmgr`, depending on your operating system.

Generate the configuration XML files for a Content Engine instance

The following table lists the configuration XML files that you will generate using Configuration Manager:

File Name	Description
configurejdbc.xml	Settings for configuring JDBC connections to the databases used by Content Engine. You will need to generate, edit, and execute the configure the JDBC task once for the data source for the Global Configuration Data (GCD).
configureldap.xml	Settings for connecting to and searching within a directory server
configurebootstrap.xml	Settings for creating the Global Configuration Data (GCD) and starting Content Engine
deployapplication.xml	Settings for deploying a Content Engine instance

File Name	Description
configureapplicationserver.xml	Parent file of the above listed configuration XML files that points to each configuration file. This file is created only if you generate all the configuration files at once instead of individually.
applicationserver.xml	Settings for the application server, including the location of the application server software and the name of the server. This file is generated when any other configuration file is generated (either all at once or individually) and is used by all of the configuration tasks.

You can generate the configuration XML files, in either of two ways:

- Run the tool multiple times, generating one configuration XML file at a time.
- Run the tool once to generate a “parent” file, `configureapplicationserver.xml`, and automatically generate all the configuration XML files. The parent file points to the individual configuration XML files.

Running the tool also generates the `applicationserver.xml` file (used in several configuration tasks). Subsequent executions of the tool will not overwrite `applicationserver.xml`.

To generate configuration XML files

1. Set the current directory to `ce_install_path/tools/configure`.
2. At the command prompt, run Configuration Manager to generate the configuration XML files all at once ([Step a](#)) or one at a time ([Step b](#)).

See [“Configuration Manager command-line reference” on page 695](#) for details on Configuration Manager syntax.

- a. To generate all the configuration files at once with a parent configuration file, run the following command. Do not type any line breaks when you type the command.

where:

`app_server_type` is WebSphere, WebLogic, or JBoss.

`db_type` specifies the type of database to be used by Content Engine and must be one of the following: `mssql`, `oracle`, `oracle_rac`, `db2`, or `db2zos`.

`ldap_type` specifies the type of directory service repository Content Engine uses for authenticating users and must be one of the following: `activedirectory`, `adam`, `edirectory`, `sunjava`, or `tivoli`. The `adam` option applies to both Microsoft ADAM and AD LDS.

`deploy_type` specifies the type of Content Engine deployment. The value must be one of the following: `standard`, `cluster`, or `netdeploy` (network deployment). Specify `standard` if you are deploying Content Engine to a standalone (that is, a server that is neither managed nor clustered) WebSphere, WebLogic, or JBoss application server. Specify `cluster` if you are deploying Content Engine to a WebSphere, WebLogic, or JBoss application server cluster. Specify `netdeploy` if you are deploying Content Engine to a

managed WebSphere application server instance (using Network Deployment for managing individual servers that are not necessarily in a cluster).

`-path mypath` is optional and specifies the path to where the generated configuration XML files will be placed. If you are deploying multiple Content Engine instances on the same machine, you will need to specify a separate directory for each instance.

For example, the following command generates all the configuration XML files for a standard WebSphere deployment using Tivoli Directory Server and DB2 in the `ce_install_path/tools/configure/wstdb2` path:

```
configmgr generateConfig -appserver WebSphere -db db2 -ldap tivoli
-deploy standard -task ConfigureApplicationServer -path wstdb2
```

Continue at [“Edit the configuration XML files for a Content Engine instance” on page 375](#).

- b. To generate a single configuration XML file, run the command in one of the following substeps:

- To generate the `configurejdbc.xml` file and the `applicationserver.xml` file:

```
configmgr generateConfig -appserver app_server_type -db db_type
-ldap ldap_type -deploy deploy_type -task ConfigureJDBC -path mypath
```

- To generate the `configureldap.xml` file and the `applicationserver.xml` file:

```
configmgr generateConfig -appserver app_server_type -db db_type
-ldap ldap_type -deploy deploy_type -task ConfigureLDAP -path mypath
```

- To generate the `configurebootstrap.xml` file and the `applicationserver.xml` file:

```
configmgr generateConfig -appserver app_server_type -db db_type
-ldap ldap_type -deploy deploy_type -task ConfigureBootstrap [-path mypath]
```

where:

`app_server_type` is WebSphere, WebLogic, or JBoss.

`db_type` specifies the type of database to be used by Content Engine and must be one of the following: `mssql`, `oracle`, `oracle_rac`, `db2`, or `db2zos`.

`ldap_type` specifies the type of directory service repository Content Engine uses for authenticating users and must be one of the following: `activedirectory`, `adam`, `edirectory`, `sunjava`, or `tivoli`. The `adam` option applies to both Microsoft ADAM and AD LDS.

`deploy_type` specifies the type of Content Engine deployment. The value must be one of the following: `standard`, `cluster`, or `netdeploy` (network deployment). Specify `standard` if you are deploying Content Engine to a standalone (that is, a server that is neither managed nor clustered) WebSphere, WebLogic, or JBoss application server. Specify `cluster` if you are deploying Content Engine to a WebSphere, WebLogic, or JBoss application server cluster. Specify `netdeploy` if you are deploying Content Engine to a managed WebSphere application server instance (using Network Deployment for managing individual servers that are not necessarily in a cluster).

`-path mypath` is optional and specifies the path to where the generated configuration XML files will be placed. If you are deploying multiple Content Engine instances on the same machine, you will need to specify a separate directory for each instance.

For example, the following command generates only the configureJDBC.xml file for a standard WebSphere deployment using Tivoli Directory Server and DB2 in the `ce_install_path/tools/configure/wstdb2` path:

```
configmgr generateConfig -appserver WebSphere -db db2 -ldap tivoli -deploy standard -task ConfigureJDBC -path wstdb2
```

Repeat [Step b](#) to generate one of the other configuration XML files, or continue at [“Edit the configuration XML files for a Content Engine instance” on page 375](#).

You will eventually need to generate each of the configuration XML files (JDBC, LDAP, and bootstrap) to configure a Content Engine instance.

Edit the configuration XML files for a Content Engine instance

Perform the following procedure for each file you generated in [“Generate the configuration XML files for a Content Engine instance” on page 372](#) to insert your site’s properties and values. Use the information in your worksheet to specify the values for the parameters required to configure Content Engine. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select one of these Configuration Manager options:
 - CM: Set Application Server properties
 - CM: Configure JDBC Data Sources
 - CM: Configure LDAP
 - CM: Configure Bootstrap Properties
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade".
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

To edit values in the configuration XML files

1. Use a text editor or XML editor to open one of the following configuration XML files that you generated in [“Generate the configuration XML files for a Content Engine instance” on page 372](#):
 - `configurejdbc.xml`
 - `configureldap.xml`
 - `configurebootstrap.xml`
 - `applicationserver.xml`

If you generated all the files at once with the ConfigureApplicationServer task in [“Generate the configuration XML files for a Content Engine instance” on page 372](#), you will also have generated

the `deployapplication.xml` file. You will open this file for editing in [“Deploy upgraded Content Engine instances” on page 395](#).

2. Make the following changes to each XML configuration file:
 - a. Replace each occurrence of `****INSERT VALUE****` with a value appropriate for your site. Refer to the descriptions in the file for more information.
 - b. Verify that the default values for the remaining properties are correct for your site.

TIP If you previously specified values in the `configureldap.xml` file to add a realm to a federated repository, and want to put an additional realm in the repository, replace the previous values with the values for the additional realm.
 - c. Set the `<TaskEnabled>` value to `true` in any configuration XML file you edit if you want to run the configuration task in [“Execute the configuration XML files for a Content Engine instance” on page 377](#).
3. (Optional, WebSphere only) If you have previously created XA and non-XA data sources that you want to use for the Global Configuration Data (GCD) database, make the following edits:
 - a. In the `configurejdbc.xml` file, set the `<TaskEnabled>` value to `false` to avoid creating another pair (XA and non-XA) of data sources.
 - b. In the `configurebootstrap.xml` file, set the `<JDBCDataSourceXAFileName>` and `<JDBCDataSourceFileName>` values to the XA and non-XA JNDI names, respectively, associated with the GCD database.
4. (Optional) Encrypt any passwords that you need to insert into the file by running the password encryption utility (see [“To encrypt a password for Configuration Manager” on page 700](#)), and then copy the encrypted value into the file. It is a best practice to encrypt the passwords for the following accounts:
 - The application server administrator account used in the `applicationserver.xml` file.
 - The database administrator account used in the `configurejdbc.xml` file.
 - The LDAP provider service principal account used in the `configureldap.xml` file.
 - The master key—a word or phrase for encrypting sensitive FileNet P8 Global Configuration Data (GCD) entries—used in the `configurebootstrap.xml` file.

IMPORTANT Any password you do not encrypt will be stored and sent as clear text.
5. Save your edits.
6. Perform one of the following:
 - Repeat [Step 1](#) through [Step 5](#) of this procedure for any other configuration XML file that you have not yet edited.
 - Continue at [“Execute the configuration XML files for a Content Engine instance” on page 377](#) to execute a configuration XML file(s) you have edited.
 - Return to [“Generate the configuration XML files for a Content Engine instance” on page 372](#) to generate additional configuration XML files.

Execute the configuration XML files for a Content Engine instance

After you have generated and edited the configuration XML files for a Content Engine instance, you need to apply the settings by executing the tasks.

- Any task with the <TaskEnabled> element value set to false will not run (see [Step 2 on page 376](#) in “[To edit values in the configuration XML files](#)” on page 375).
- If you are executing tasks for a profile that was created or edited in the Configuration Manager GUI, verify that the XML files contain values for the required passwords. See “[Handling passwords in Configuration Manager](#)” on page 643 for more information.

To execute the configuration XML file settings

1. (WebSphere only) Start the application server if it is not already running.
2. Set the current directory to `ce_install_path/tools/configure`.
3. At the command prompt, run Configuration Manager to execute the configuration XML files all at once ([Step a](#)) or one at a time ([Step b](#)). See “[Configuration Manager command-line reference](#)” on page 695 for command syntax details.

When running the tool, the `-path mypath` parameter is optional and specifies where you placed the configuration XML file. If you do not specify a path, the file must be in `ce_install_path/tools/configure/profiles`.

- a. To execute all the configuration files at once with a parent configuration file, run the following command.

```
configmgr execute -task ConfigureApplicationServer -path mypath
```

where `-path mypath` is optional and specifies the path to the generated configuration XML files.

NOTES

- To execute all tasks at once, you must have generated all the files at once with the `ConfigureApplicationServer` task in “[Generate the configuration XML files for a Content Engine instance](#)” on page 372.
 - If you did not enable the deployment task in the `deployapplication.xml` file, the tool will display an informational message indicating that the deployment did not occur. In which case, you will complete the deployment in “[Deploy upgraded Content Engine instances](#)” on page 395.
- b. To execute a single configuration XML file, type and run the command in one of the following substeps. You can execute the files in any order.
 - To execute the `configurejdbc.xml` file:


```
configmgr execute -task ConfigureJDBC -path mypath
```
 - To execute the `configureldap.xml` file:


```
configmgr execute -task ConfigureLDAP -path mypath
```

- To execute the `configurebootstrap.xml` file:

```
configmgr execute -task ConfigureBootstrap -path mypath
```

where `-path mypath` is optional and specifies the path to the generated configuration XML files.

TIP If you generated a complete set of XML files, but want to execute the files individually, you only need to execute the three files listed above. You cannot execute the `applicationserver.xml` file or the `ConfigureApplicationServer.xml` file. The values in the `applicationserver.xml` file are used to identify the application server for the other execution tasks. The `ConfigureApplicationServer.xml` file is a parent file that lists the tasks to execute when you execute all the configuration files at once.

Repeat [Step b](#) to execute one of the other configuration XML files, or continue at [“Check the completion status of Content Engine configuration tasks” on page 378](#).

You will eventually need to execute each of the configuration XML files to complete the configuration of a Content Engine instance.

IMPORTANT You must run the `ConfigureJDBC` task at least 2 times to configure the minimum data sources. First enter the Global Configuration Database (GCD) data source values, save, and run the task. Then, enter the object store data source values, save, and run the task again. You will need to edit and run the `ConfigureJDBC` task once for each additional object store.

4. Continue at [“Check the completion status of Content Engine configuration tasks” on page 378](#).

Check the completion status of Content Engine configuration tasks

Use the procedure in this subtopic to verify that one or more Content Engine configuration tasks that you executed in [“Execute the configuration XML files for a Content Engine instance” on page 377](#) have completed. You can check the status of all the tasks you executed or just check individual tasks.

Checking the completion status does not validate the information in the XML files.

To check the status of a Content Engine configuration

1. At the command prompt, run Configuration Manager to check the status of the configuration tasks all at once ([Step a](#)) or one at a time ([Step b](#)).

When running the tool, the `-path mypath` parameter is optional and specifies where you placed the configuration XML file. If you do not specify a path, the file must be in `ce_install_path/tools/configure/profiles`.

See [“Configuration Manager command-line reference” on page 695](#) for command syntax details.

- a. To check the status of all the configuration tasks at once, run the following command:

```
configmgr checkStatus -task ConfigureApplicationServer -path mypath
```

NOTE To check the status of all tasks at once, you must have generated all the files at once with the `ConfigureApplicationServer` task in [“Generate the configuration XML files for a Content Engine instance” on page 372](#).

Continue at [Step 3](#).

b. To check the completion status of a single configuration task, run the tool in one of the following substeps.

- To check the status of the ConfigureJDBC task using the configuration file in the specified path:

```
configmgr checkStatus -task ConfigureJDBC -path mypath
```

- To check the status of the ConfigureLDAP task using the configuration file in the specified path:

```
configmgr checkStatus -task ConfigureLDAP -path mypath
```

- To check the status of the ConfigureBootstrap task using the configuration file in the specified path:

```
configmgr checkStatus -task ConfigureBootstrap -path mypath
```

If you performed [Step b](#), repeat the step to check the status of any other configuration tasks you have executed; otherwise, continue at [Step 2](#).

2. Continue at one of the following procedures, as needed; otherwise, continue at [Step 3](#).
 - If you have any other configuration tasks to execute, continue at [“Execute the configuration XML files for a Content Engine instance” on page 377](#).
 - If you have any other configuration XML files to generate, continue at [“Generate the configuration XML files for a Content Engine instance” on page 372](#).
 - If you want to add a realm to a federated repository, continue at [“Edit the configuration XML files for a Content Engine instance” on page 375](#).
3. Continue at [“Install the latest Content Search Engine Client files on Content Engine servers” on page 390](#).

Task 5b: Configure Content Engine instances upgraded from 4.0.x

To configure the upgraded content engine instances, complete the procedures in this topic.

- [“Grant directory permissions to the Configuration Manager user” on page 380](#)
- [“Edit the servers.xml file” on page 381](#)
- [“Review Configuration Manager reference topics” on page 382](#)
- Configure one or more upgraded instances of Content Engine on an application server, using one of these methods:
 - [“Configure upgraded instances using a graphical user interface” on page 382](#)
 - [“Configure upgraded instances using a command line” on page 387](#)

NOTE On a machine that runs Novell SUSE Linux Enterprise 9, you can configure Content Engine only from a command line.

Grant directory permissions to the Configuration Manager user

Perform the following procedure to grant the file and directory permissions required by *config_mgr_user*, the user who will run Configuration Manager. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

To grant directory permissions to the Configuration Manager tool user

1. Log on to the application server where you installed Content Engine as *ce_install_user*. For details on required accounts and related permissions, see [“Accounts for Content Engine” on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Grant the following permissions to *config_mgr_user*, the Configuration Manager user:

- Execute permission on the following file:

UNIX

```
ce_install_path/tools/configure/configmgr.sh
```

Windows

```
ce_install_path/tools/configure/configmgr.bat
```

where *ce_install_path* is the path where you installed Content Engine.

- Write permission to the directory where you want the Configuration Manager tool to place the configuration XML files it will generate.

NOTE If you are not going to specify this directory when you run the tool, grant write permission on the default directory, *ce_install_path/tools/configure/profiles*.

3. Grant *config_mgr_user* execute permission (UNIX) or Read & Execute permission (Windows) on the executable file of the interface of Configuration Manager you intend to use:
 - To enable use of the graphical user interface, grant the permission to one of the following files:
 - UNIX**
 - `cmui`
 - Windows**
 - `cmui.exe`
 - To enable use of the command line interface, grant permission to one of the following files:
 - UNIX**
 - `configmgr.sh`
 - Windows**
 - `configmgr.bat`
4. Grant write permission to the directory where you want Configuration Manager to place the configuration XML files it will generate.

If you are not going to specify this directory when you run Configuration Manager, grant write permission on the default directory, *ce_install_path/tools/configure/profiles*.
5. Log off the Content Engine application server and log back on as *config_mgr_user*, the Configuration Manager user. For details on required accounts and related permissions, see ["Accounts for Content Engine" on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

Edit the servers.xml file

If you upgraded Content Engine from version 4.0.x of a cluster deployment, or a non-cluster Network Deployment (WebSphere only), perform the procedure in this subtopic to edit the *servers.xml* file; otherwise, skip this subtopic.

To edit the servers.xml file

1. On the Content Engine Server machine, navigate to the *ce_install_path/FileNet/ContentEngine* directory, which contains the *servers.xml* file.
2. Use the following syntax to edit the settings for the Content Engine server:

```
<server name="WS/Deployment_Manager_profile_name/cell_name/cluster_name"
deployment="Cluster" version="4.0.x-xxxx"
ear="path_to_existing_40x_boostrapped_EAR_file\Engine-ws.ear">
```

where you would:
 - Add the attribute `deployment="Cluster"`.
 - Change the name attribute by entering your cluster name for the *cluster_name* variable (replacing the server name).

- Verify that the path to the EAR file is valid. The path should point to the EAR file deployed to the cluster.
3. Save the `servers.xml` file.

Review Configuration Manager reference topics

If you are new to Configuration Manager, refer to the appendix [“Configuration Manager reference” on page 638](#) for complete information on using Configuration Manager before starting the procedures in this topic. The “Configuration Manager reference” appendix includes the following information:

- An overview of Configuration Manager, which contains details on:
 - Configuration profiles and configuration tasks.
 - Differences between the graphical user interface and command-line interface versions.
- Details on handling passwords in Configuration Manager.
- The Configuration Manager user-interface reference, which contains:
 - An introduction to the windows, toolbars, menus, and commands.
 - Procedures for working in Configuration Manager to start and stop Configuration Manager, to create, open, or save a profile, to run tasks, to check task status, and to view the logs.
- The Configuration Manager command-line reference with syntax, commands, and parameters.

Refer to the appendix [“Configuration Manager reference” on page 638](#) for complete information on using Configuration Manager.

To configure the Content Engine upgrade instances, continue with one of the following topics:

- [“Configure upgraded instances using a graphical user interface” on page 382](#)
- [“Configure upgraded instances using a command line” on page 387](#)

Configure upgraded instances using a graphical user interface

In this subtopic you will configure a Content Engine Server instance on an application server using the graphical user interface version of Configuration Manager.

Refer to the appendix [“Configuration Manager user interface reference” on page 645](#) for complete information on using the graphical user interface.

NOTE If you need an accessible version of Configuration Manager, use the command line interface instead of the GUI. See [“Configure upgraded instances using a command line” on page 387](#).

To start Configuration Manager

- Run one of the following commands, depending on the operating system that runs on the machine where you installed Content Engine:

UNIX

```
ce_install_path/tools/configure/CMUI/cmui
```

Windows

Perform one of the following actions:

- Double-click the **FileNet Configuration Manager** desktop shortcut.
- Select **Start > All Programs > IBM FileNet P8 Platform > FileNet Configuration Manager**.
- Run `ce_install_path\tools\configure\CMUI\cmui.exe`.

To create an upgrade configuration profile

- Start the Create Upgrade Configuration Profile wizard, by selecting **File > Create Upgrade Configuration Profile** or by clicking the wizard icon in the tool bar, and use the information in your worksheet to specify the values for the parameters in the wizard screens. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Set Application Server Properties".
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."

In this screen...	Perform this action...
Upgrade Profile Path	<ul style="list-style-type: none"> • Provide the following information for the profile, and click Next. <ul style="list-style-type: none"> – Enter a name for the profile. The name must be valid as a directory name for your operating system. Configuration Manager will create a directory with the profile name for storing the configuration files associated with this profile. For more information of profiles, see “Configuration profile concepts” on page 639 in the Configuration Manager reference appendix. – Specify the path for the profile. Either type in the full path to the profile directory or click Browse to locate the directory. The default path is <code>ce_install_path/tools/configure/profiles</code>, where <code>ce_install_path</code> is the location where Content Engine is installed.

In this screen...	Perform this action...
Upgrade Configuration Profile Creation Summary	<ul style="list-style-type: none"> • Review the summary information, and click Next. • Continue at one of the following screens: <ul style="list-style-type: none"> – “Set Application Server Properties for WebSphere” on page 384 – “Set Application Server Properties for JBoss” on page 385 – “Set Application Server Properties for WebLogic” on page 385
Set Application Server Properties for WebSphere	<p>This screen is displayed only if you selected WebSphere in the previous screen.</p> <p>Provide the following information for the application server, and click Finish.</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the GCD, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. • Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. • Enter the application server SOAP port number. • Enter the name of the WebSphere application server cell where Content Engine will be deployed. • If you have already configured WebSphere to use certificates, clear the “Do not use SSL certificates for server communications” check box. Otherwise, leave the check box selected. <p>NOTE Selecting this check box will change your WebSphere settings for communicating with other servers, such as Application Engine.</p>

In this screen...	Perform this action...
<p>Set Application Server Properties for JBoss</p>	<p>This screen is displayed only if you selected JBoss in the previous screen.</p> <p>Provide the following information for the application server, and click Finish.</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the name of the JBoss application server name where Content Engine will be deployed.
<p>Set Application Server Properties for WebLogic</p>	<p>This screen is displayed only if you selected WebLogic in the previous screen.</p> <p>Provide the following information for the application server, and click Finish.</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the GCD, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. • Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. • Enter the application server SOAP port number. • Enter the machine name or the IP address of the local host for the application server host. • Enter the fully qualified path to the WebLogic application server user projects directory, or click Browse to locate the directory.

In this screen...	Perform this action...
Set Application Server Properties for WebLogic (continued)	<ul style="list-style-type: none"> Enter the WebLogic application server domain name where Content Engine will be deployed. Enter the name of the WebLogic application server name where Content Engine will be deployed.

If more than one instance of Content Engine Server is installed on the machine, Configuration Manager will create one parent directory using the profile name you specified and a subdirectory of the parent for each instance. The profile you create will be displayed as an icon in the left-hand pane, along with icons for Upgrade Bootstrap and Deploy Application.

To configure the upgraded Content Engine instance

- Open the Upgrade Bootstrap properties. Right-click **Upgrade Bootstrap** in the profile pane, and select **Edit Selected Task**.
- Specify the parameter values in the right pane of the window, using the appropriate information from your installation and upgrade worksheet. For more information, see ["Installation and upgrade worksheet" on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Upgrade Bootstrap".
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade".

Provide the bootstrap property values, using the following table.

In this field...	Provide this information...
Content Engine EAR path	The fully qualified path to the Content Engine EAR file that was installed by the Content Engine installation program. For example, <code>/opt/FileNet/ContentEngine/lib/Engine-ws.ear</code> or <code>c:\Program Files\FileNet\ContentEngine\lib\Engine-ws.ear</code> .
Deployed Content Engine EAR path	The location of the deployed Content Engine EAR file.

In this field...	Provide this information...
Bootstrapped EAR directory	The name of a subdirectory that will store the EAR file that contains the Content Engine bootstrap information. The bootstrap information is needed for creating the GDC and for starting Content Engine. Specify the directory relative to the ce_install_path/lib directory. For example, to specify /opt/FileNet/ContentEngine/lib/bootstrap, enter "bootstrap".
Task enabled	Turn on the Task enabled check box to execute the upgrade bootstrap task in Step 4 . The default is enabled.

3. Select **File > Save** to save your changes.
4. Apply the bootstrap property settings by right-clicking **Upgrade Bootstrap** in the profile pane, and selecting **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the bootstrap properties.
TIP You can check the completion status of the task by right-clicking **Upgrade Bootstrap** in the profile pane, and selecting **Check Task Status**.
5. Continue at ["Install the latest Content Search Engine Client files on Content Engine servers"](#) on page 390.

Configure upgraded instances using a command line

In this subtopic you will configure an upgraded Content Engine instance on a given application server using the command-line version of the Configuration Manager tool. Configuring an upgraded instance involves the following major steps (repeat the steps to configure another instance):

1. Generate the upgradebootstrap.xml file that contain the properties and values used to configure the environment for an upgraded Content Engine instance.
2. Execute the upgradebootstrap.xml file.
3. Verify that the executed upgradebootstrap.xml file has resulted in a correct configuration of the Content Engine instance.

You can navigate through the steps above by generating all the upgradebootstrap.xml files, one for each Content Engine instance, before editing, executing, or verifying any of them; or you can generate, edit, execute, and verify one upgradebootstrap.xml file at a time.

To configure the upgraded Content Engine instance (command line)

1. Log on to the Content Engine Server machine as *config_mgr_user*, the Configuration Manager user. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) in the *Plan and Prepare Your Environment for IBM FileNet P8* guide.

2. Set the current directory to *ce_install_path/tools/configure*, where:

ce_install_path is the path where you installed Content Engine.

As an example, *ce_install_path* might be `/opt/FileNet/ContentEngine`.

3. At a command prompt, run the following Configuration Manager command interactively, or silently (without prompts) by appending the flag `-silent`, to generate the `upgradebootstrap.xml` file.

```
configmgr generateConfig -task upgrade -path mypath
```

where `-path mypath` is optional and specifies the path to where the generated configuration XML files will be placed.

The `upgrade.xml` file and one directory named for each existing Content Engine instance is created in this location.

4. (WebSphere or WebLogic only) Set the application server administrator properties:
 - a. Navigate to the Content Engine instance directory located in the directory you specified for *mypath* in the previous step, and open the `applicationserver.xml` file for editing.
 - b. In the `ApplicationServerAdminUsername` element, set the `<value>` element content to the user name of the application server console administrator, as follows:

```
<property name="ApplicationServerAdminUsername">
  <value>administrator_user_name</value>
</property>
```

- c. In the `ApplicationServerAdminPassword` element, set the `<value>` element content to the password of the application server console administrator, as follows:

```
<property name="ApplicationServerAdminPassword">
  <value>administrator_password</value>
</property>
```

- d. Save your edits.
- e. Repeat [Step a](#) thru [Step d](#) as needed to edit the application server properties for each Content Engine instance directory that was created.

5. At a command prompt, run Configuration Manager interactively, or silently (without prompts) by appending the flag `-silent` to the command, to execute the `upgradebootstrap.xml` file.

```
configmgr execute -task upgrade -path mypath
```

where *mypath* specifies the path where the tool will find the `upgradebootstrap.xml` file.

6. At a command prompt, run Configuration Manager interactively, or silently (without prompts) by appending the flag `-silent` to the command, to check the completion status of the execute task.

```
configmgr checkStatus -task upgrade -path mypath
```

7. Continue at [“Install the latest Content Search Engine Client files on Content Engine servers”](#) on page 390.

Task 6: Install the latest Content Search Engine Client files on Content Engine servers

To install the latest Content Search Engine Client files, perform the following procedure on all application server machines where Content Engine Server is to be deployed.

IMPORTANT Your Content Search Engine Client version must match your Content Search Engine server version unless otherwise noted in the *FileNet P8 Compatibility Matrix*.

To install the latest Content Search Engine Client files

1. Locate the Content Search Engine fix pack software for your Content Engine platform. For example, if Content Engine runs on Windows, locate the fix pack software that runs on Windows. For instructions on how to obtain the latest Content Search Engine Client files, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).
2. Open the readme file for the latest IBM FileNet P8 Content Search Engine 4.5.0 fix pack and perform the installation procedures in the Content Search Engine Client section of the file.
3. Continue at [“Install the latest Process Engine Client files on Content Engine servers” on page 75](#).

Task 7: Install the latest Process Engine Client files on Content Engine servers

To install the Process Engine Client files, perform the following steps on all application server machines where Content Engine Server has been upgraded and is to be deployed.

IMPORTANT Your Process Engine Client version must match your Process Engine server version, unless otherwise noted in the *FileNet P8 Compatibility Matrix*. Install the latest 4.5 Process Engine Client files as documented in this topic only when you are ready to upgrade Process Engine servers to 4.5.

In a staged upgrade from 4.0, you might run upgraded Content Engine 4.5 servers with Process Engine 4.0 servers for some period of time. In this case, install the latest 4.0 Process Engine Client files. For detailed instructions, see the latest 4.0 version of the *IBM FileNet P8 Installation and Upgrade Guide* on the IBM Web site.

To install the Process Engine Client files

1. On the machine where Content Engine is to be deployed, log on as *ce_upgrade_user*.
2. Access the Process Engine Client install software from the Process Engine installation software. The version of the install software must match the version of Process Engine.
3. Expand the (TAR or ZIP) Process Engine Client install software.
4. Shut down all instances of Enterprise Manager (EM) and any other Content Engine client applications, such as Application Engine.
5. The expanded install software contains the Process Engine Client installation program specific to the operating system on the machine where Content Engine will be deployed. You can run the program either interactively (using the install wizard) or silently.

Depending on your application server type, the installation program will update one of the following bootstrap EAR files, at the (example) location shown in the following table:

Application Server	Example Path to Bootstrap EAR File
WebSphere	/opt/FileNet/ContentEngine/lib/ <i>cell_name/node_name/WS_server_name/Engine-ws.ear</i>
WebLogic	/opt/FileNet/ContentEngine/lib/ <i>WL_domain_name/Admin_server_name/Engine-wl.ear</i>
JBoss	/opt/FileNet/ContentEngine/lib/ <i>JB_server_name/Engine-jb.ear</i>

NOTE The Process Engine Client installation program creates a backup of the previous Process Engine Client files. For example, on Windows you can find this backup at `C:\Program Files\FileNet\PEClient\Backup\CE`.

To run the program interactively, run one of the commands in the table below, depending on the operating system and follow the wizard instructions:

Operating System	Install Program
AIX	P8PE-CLIENT-4.5.0-AIX.BIN
HPUX	P8PE-CLIENT-4.5.0-HPUX.BIN
HPUXi	P8PE-CLIENT-4.5.0-HPUXI.BIN
Linux	P8PE-CLIENT-4.5.0-LINUX.BIN
Solaris	P8PE-CLIENT-4.5.0-SOL.BIN
Windows	P8PE-CLIENT-4.5.0-WIN.EXE
zLinux	P8PE-CLIENT-4.5.0-ZLINUX.BIN

6. Complete the Process Engine client install screens, as follows:

In this screen...	Perform this action...
Welcome to Process Engine Client Installer	Click Next to proceed with the installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Specify Installation Location	Choose the destination directory for Process Engine Client log files and uninstallation files. Accept the default location or click Browse to change the location.
Select FileNet P8 Applications	Select Content Engine from the list of products to install Process Engine client files for. Click Next to continue.
Content Engine Installation Path	Enter the full path to the Application Engine installation location. The defaults are as follows: UNIX /opt/FileNet/ContentEngine Windows C:\Program Files\FileNet\ContentEngine Click Next to continue.

In this screen...	Perform this action...
Specify the EAR file to update	<p>Specify the Content Engine EAR file to update with the new Process Engine client files. Default paths are:</p> <p>UNIX</p> <p>/opt/FileNet/ContentEngine/lib/</p> <p>Windows</p> <p>C:\Program Files\FileNet\ContentEngine\lib\</p> <p>Specify the file that was bootstrapped during Configuration Manager configuration steps.</p> <p>Valid options for the EAR file are:</p> <ul style="list-style-type: none"> • Engine-jb.ear • Engine-jbc.ear • Engine-wl.ear • Engine-ws.ear
Stop running BPM software	If the installer detects running BPM software components, click Next to stop the software and continue with the installation.
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing Process Engine Client.

To run the program silently, perform the following steps:

- a. In the expanded install software, open the file PEClient_silent_install.txt and edit it as follows:
 - i. Change the Variable_CheckboxCE line to the following:


```
-V Variable_CheckboxCE="true"
```
 - ii. Save your edit.
- b. Run one of the commands in the following table to perform the silent install:

Operating System	Install Program
AIX	P8PE-CLIENT-4.5.0-AIX.BIN -silent -options "PEClient_silent_install.txt"
HPUX	P8PE-CLIENT-4.5.0-HPUX.BIN -silent -options "PEClient_silent_install.txt"
HPUXi	P8PE-CLIENT-4.5.0-HPUXI.BIN -silent -options "PEClient_silent_install.txt"
Linux	P8PE-CLIENT-4.5.0-LINUX.BIN -silent -options "PEClient_silent_install.txt"

Operating System	Install Program
Solaris	P8PE-CLIENT-4.5.0-SOL.BIN -silent -options "PEClient_silent_install.txt"
Windows	P8PE-CLIENT-4.5.0-WIN.EXE -silent -options "PEClient_silent_install.txt"
zLinux	P8PE-CLIENT-4.5.0-ZLINUX.BIN -silent -options "PEClient_silent_install.txt"

Task 8: Deploy upgraded Content Engine instances

To deploy an upgraded instance of Content Engine, complete the procedures in this topic after you have completed the configure tasks in one of the following topics:

- For upgrades from 3.5.x, [“Configure Content Engine instances upgraded from 3.5.x” on page 345](#).
- For upgrades from 4.0.x, [“Configure Content Engine instances upgraded from 4.0.x” on page 380](#).

If you have configured all your instances, you can deploy all of them in this topic. Alternatively, if you configured only one of your instances, you can deploy it in this topic and then return to [“Configure Content Engine instances upgraded from 3.5.x” on page 345](#) or [“Configure Content Engine instances upgraded from 4.0.x” on page 380](#) to configure another instance.

To deploy a Content Engine instance, complete the procedures in one of the following subtopics:

- [“Deploy upgraded instances using a graphical user interface” on page 395](#)
- [“Deploy upgraded instances using a command line” on page 406](#)

Use the command line version of Configuration Manager if either of these conditions is true:

- Your system is Novell SUSE Linux Enterprise 9. You can configure Content Engine only with the command line.
- You need an accessible software version of Configuration Manager for people with disabilities to use.

Deploy upgraded instances using a graphical user interface

In this subtopic you will deploy an upgraded Content Engine Server instance on an application server using the graphical user interface version of Configuration Manager. Use the information in your installation worksheet to specify the values that are required to configure Content Engine. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

For more information on the properties that you set in the Configuration Manager, roll your mouse over the property name to view the tool tip help for the property. Refer to the appendix [“Configuration Manager user interface reference” on page 645](#) for complete information on using the graphical user interface.

To deploy a Content Engine instance (graphical user interface)

1. Log on to the application server where you installed the Content Engine software as *config_mgr_user*, the Configuration Manager user. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Start or stop the application server, depending on its type:

WebSphere and WebLogic

Start the application server if it is not already running.

JBoss

Stop the application server.

3. Start Configuration Manager by completing one of the following steps:

UNIX

```
ce_install_path/tools/configure/CMUI/cmui
```

where *ce_install_path* is the path to the Content Engine Server software.

Windows

Complete one of the following actions:

- Double-click the **FileNet Configuration Manager** desktop shortcut.
- Select **Start > All Programs > IBM FileNet P8 Platform > FileNet Configuration Manager**.
- Run `ce_install_path\tools\configure\CMUI\cmui.exe`.

where *ce_install_path* is the path to the Content Engine Server software.

4. Refer to your installation worksheet to specify the values for the properties required for your new profile. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Deploy Application".
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

5. If you upgraded your application server and then redeployed Content Engine before upgrading it to version 4.5 before upgrading Content Engine from version 4.0.x to 4.5, click the **Update Application Server Properties** icon and correct any obsolete parameter values for your application server type.
6. Select **File > Open Configuration Profile**.
7. In the Open Configuration Profile wizard, enter the path to the profile for the Content Engine instance that you configured in [“Configure Content Engine instances upgraded from 3.5.x” on page 345](#) or in [“Configure Content Engine instances upgraded from 4.0.x” on page 380](#), or click **Browse** to locate the profile directory, and then click **Finish**.
8. Right-click the **Deploy Application** task in the profile pane (left pane), and select **Edit Selected Task**.
9. Provide the property values for your deployment, using the appropriate table for your deployment type:

WebSphere Standard

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties that are displayed depend on the type of deployment that you select.
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre data-bbox="605 657 1424 720">/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</pre> <p>Windows</p> <pre data-bbox="605 793 1424 877">c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</pre>
Content Engine Application name	<p>The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.</p>
Application server name	<p>The name of the WebSphere Application Server where Content Engine will be deployed.</p>
Application server node	<p>The name of the WebSphere Application Server node where Content Engine will be deployed.</p>
Script	<p>The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example:</p> <p>UNIX</p> <pre data-bbox="605 1455 1424 1518">/opt/FileNet/ContentEngine/tools/configure/scripts /deployWSApplication.tcl</pre> <p>Windows</p> <pre data-bbox="605 1591 1424 1696">c:\Program Files\FileNet\ContentEngine\tools\configure\script s \deployWSApplication.tcl</pre>

In this field...	Provide this information...
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 11. The default is enabled.</p> <p>Continue with Step 10 on page 406.</p>

WebSphere Cluster

In this field...	Provide this information...
Deployment type	Select "Cluster" from the list. The remaining properties that are displayed depend on the type of deployment that you select.
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</pre>
Content Engine Application name	The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.
Application server cluster name	The name of the WebSphere Application Server cluster where Content Engine will be deployed.

In this field...	Provide this information...
Script	<p>The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example:</p> <p>UNIX</p> <pre data-bbox="607 520 1432 583">/opt/FileNet/ContentEngine/tools/configure/scripts /deployWSApplication.tcl</pre> <p>Windows</p> <pre data-bbox="607 655 1432 785">c:\Program Files\FileNet\ContentEngine\tools\configure\script s \deployWSApplication.tcl</pre>
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre data-bbox="607 940 1432 961">/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre data-bbox="607 1033 1432 1100">c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 11. The default is enabled.</p> <p>Continue with Step 10 on page 406.</p>

WebSphere Network Deployment

In this field...	Provide this information...
Deployment type	<p>Select "Network Deployment" from the list. The remaining properties that are displayed depend on the type of deployment that you select.</p>

In this field...	Provide this information...
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre data-bbox="607 520 1382 579">/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</pre> <p>Windows</p> <pre data-bbox="607 653 1382 741">c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</pre>
Content Engine Application name	<p>The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.</p>
Application server name	<p>The name of the WebSphere Application Server where Content Engine will be deployed.</p>
Application server node	<p>The name of the WebSphere Application Server node where Content Engine will be deployed.</p>
Script	<p>The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example:</p> <p>UNIX</p> <pre data-bbox="607 1318 1406 1377">/opt/FileNet/ContentEngine/tools/configure/scripts /deployWSApplication.tcl</pre> <p>Windows</p> <pre data-bbox="607 1451 1406 1570">c:\Program Files\FileNet\ContentEngine\tools\configure\script s \deployWSApplication.tcl</pre>

In this field...	Provide this information...
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre data-bbox="605 489 1344 520">/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre data-bbox="605 594 1360 657">c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 11. The default is enabled.</p> <p>Continue with Step 10 on page 406.</p>

JBoss Standard

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties that are displayed depend on the type of deployment that you select.
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-jb.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-jb.ear</pre>
Kerberos support	This setting specifies whether Kerberos authentication is used. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 11. The default is enabled.</p> <p>Continue with Step 10 on page 406.</p>

JBoss Cluster

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties that are displayed depend on the type of deployment that you select.

In this field...	Provide this information...
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-jbc.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-jbc.ear</pre>
Keepers support	<p>This setting specifies whether Kerberos authentication is used. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.</p>
Task enabled	<p>Select the Task enabled check box to execute the deploy application task later in Step 11. The default is enabled.</p> <p>Continue with Step 10 on page 406.</p>

WebLogic Standard

In this field...	Provide this information...
Deployment type	<p>Select “Standard” from the list. The remaining properties that are displayed depend on the type of deployment that you select.</p>
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-wl.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-wl.ear</pre>

In this field...	Provide this information...
Content Engine Application name	The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.
Script	The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/scripts/deployWLApplication.py</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\deployWLApplication.py</code>
Temporary directory	The fully qualified path to a temporary directory to be used by the configuration task. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/tmp</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</code>
Task enabled	Select the Task enabled check box to execute the deploy application task later in Step 11 . The default is enabled. Continue with Step 10 on page 406 .

WebLogic Cluster

In this field...	Provide this information...
Deployment type	Select "Cluster" from the list. The remaining properties that are displayed depend on the type of deployment that you select.

In this field...	Provide this information...
<p>Bootstrapped EAR path</p>	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre data-bbox="607 520 1382 579">/opt/FileNet/ContentEngine/lib/bootstrap/Engine-wl.ear</pre> <p>Windows</p> <pre data-bbox="607 653 1382 741">c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-wl.ear</pre>
<p>Content Engine Application name</p>	<p>The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.</p>
<p>Script</p>	<p>The fully qualified path to the deploy configuration task script. The task script filename depends on the application server type selected. For example:</p> <p>UNIX</p> <pre data-bbox="607 1146 1406 1205">/opt/FileNet/ContentEngine/tools/configure/scripts/deployWLApplication.py</pre> <p>Windows</p> <pre data-bbox="607 1278 1406 1402">c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\deployWLApplication.py</pre>
<p>Temporary directory</p>	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre data-bbox="607 1560 1341 1587">/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre data-bbox="607 1661 1357 1717">c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>

In this field...	Provide this information...
Task enabled	Select the Task enabled check box to execute the deploy application task later in Step 11 . The default is enabled. Continue with Step 10 on page 406 .

10. Select **File > Save**.

11. Right-click the **Deploy Application** task in the left pane, and select **Run Task**.

Running the deploy task may take a few minutes. The task execution status messages are displayed in the Console pane below the deploy application properties.

12. (Upgrades from version 4.0.1 only) If you have more Content Engine instances to upgrade from version 4.0.1 on this machine, complete the following substeps:

- Open the profile you created for the instance in [“Configure Content Engine instances upgraded from 4.0.x” on page 380](#).
- Choose the subdirectory profile for that instance.
- Repeat [Step 5](#) through [Step 12](#).

13. If you have Tivoli Storage Manager fixed content devices, continue at one of the following; otherwise, continue at [“Complete Content Engine post-deployment steps” on page 420](#).

- “Install Tivoli Storage Manager client and add native API library paths (WebSphere)” on page 409
- “Install Tivoli Storage Manager client and add native API library paths (WebLogic)” on page 411
- “Install Tivoli Storage Manager client and add native API library paths (JBoss)” on page 414

Deploy upgraded instances using a command line

In this subtopic you will deploy an upgraded Content Engine instance on a given application server using the command-line version of Configuration Manager. See [“Configuration Manager command-line reference” on page 695](#) for syntax details.

To deploy a Content Engine instance (command line interface)

- If you haven't already done so, log on to the application server machine as *config_mgr_user*, the Configuration Manager user. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
- Start or stop the application server, depending on its type:

WebSphere and WebLogic

Start the application server if it is not already running.

JBoss

Stop the application server.

3. If you upgraded your application server and then redeployed Content Engine before upgrading it to version 4.5 before upgrading Content Engine from version 4.0.x to 4.5, complete the following substeps:
 - a. Open the `applicationserver.xml` file for editing.
 - b. Correct any obsolete parameter values for your application server type.
 - c. Save your edits.
4. Edit the `deployapplication.xml` file that you generated in [“Configure instances using the command line interface” on page 372](#) (version 3.5.x) or in [“Configure upgraded instances using a command line” on page 387](#) (version 4.0.x). Refer to the descriptions in the XML file and your installation worksheet for more information. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Deploy Application".
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
 - Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
5. Set the current directory to `ce_install_path/tools/configure`, where `ce_install_path` is the path where you installed Content Engine.

As an example, `ce_install_path` might be `/opt/FileNet/ContentEngine`.

6. At a command prompt, execute the `deployapplication.xml` file by running Configuration Manager either interactively, or silently (without prompts) by appending the flag `-silent` to the command:

```
configmgr execute -task DeployApplication -path mypath
```

where `mypath` specifies the path where the `upgrade.xml` file is located. This is the same path that you specified when you configure the upgraded Content Engine instance in [“Configure instances using the command line interface” on page 372](#) (version 3.5.x) or in [“Configure upgraded instances using a command line” on page 387](#) (version 4.0.x).

7. At the command prompt, check the completion status of the `deployapplication.xml` file by running Configuration Manager either interactively, or silently (without prompts) by appending the flag `-silent` to the command:

```
configmgr checkStatus -task DeployApplication -path mypath
```

8. If you have more upgraded Content Engine instances to deploy on this machine, repeat [Step 3](#) through [Step 7](#).

9. If you have Tivoli Storage Manager fixed content devices, continue at one of the following; otherwise, continue at [“Complete Content Engine post-deployment steps”](#) on page 420.
 - [“Install Tivoli Storage Manager client and add native API library paths \(WebSphere\)”](#) on page 409
 - [“Install Tivoli Storage Manager client and add native API library paths \(WebLogic\)”](#) on page 411
 - [“Install Tivoli Storage Manager client and add native API library paths \(JBoss\)”](#) on page 414

Task 9a: Install Tivoli Storage Manager client and add native API library paths (WebSphere)

If Tivoli Storage Manager fixed content devices will be in your IBM FileNet P8 environment, complete the following procedures on each application server where Content Engine is deployed.

NOTE If you used Tivoli Storage Manager with version 3.5.x of Content Engine, you must still complete these procedures.

To install Tivoli Storage Manager client

1. Download the Tivoli Storage Manager client software from the IBM Support site <http://www-01.ibm.com/support/docview.wss?uid=swg24019757>.
2. Complete the platform-specific installation instructions included with each Tivoli Storage Manager client download package.

(UNIX only) Record the path where you install Tivoli Storage Manager client because you will need to specify the path as the DSMI directory when you create a Tivoli fixed content device in FileNet Enterprise Manager. If you are installing Tivoli Storage Manager client on multiple UNIX hosts, the installation path must be the same on each host.

On AIX, install Tivoli Storage Manager client at `/usr/tivoli/tsm/client/ba/bin`.

To copy the Tivoli Storage Manager API library files to additional servers

- If you are running a Content Engine server farm, copy the entire `tsm100` directory structure from the Content Engine installation directory to each of the servers in the farm. It is a best practice to use the same directory structure on each server in the farm. The following are example paths:

UNIX

```
/opt/FileNet/ContentEngine/tsm100
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100
```

To create a shared library definition for Tivoli Storage Manager native API library files

1. Log on to the WebSphere administrative console.
2. Create a shared library definition according to the type of deployment (standalone or clustered), the version of WebSphere, and the operating system on which WebSphere runs. For the detailed procedure on creating the shared library, visit this web site:

<http://www-01.ibm.com/software/webservers/appserv/was/library/>

- a. Specify a Node scope for the library.
- b. In a server farm, if you installed the `tsm100` directory in different locations, choose Server scope and add a Shared Library entry for each server in your server farm.

- c. Provide a name for the shared library, for example TSMAPLIB.
- d. In the Classpath field, specify the full path to the `TsmJavaApi.jar` file (substituting your own path if it differs from the default shown here for your operating system):

UNIX

```
/opt/FileNet/ContentEngine/tsm100/TsmJavaApi.jar
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100\TsmJavaApi.jar
```

- e. In the Native Library Path, specify the full path to the `tsm100` directory (substitute your own path if it differs from the ones shown below):

UNIX

```
/opt/FileNet/ContentEngine/tsm100
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100
```

- f. Save your changes to the master configuration.
- g. Navigate to the FileNetEngine application and click the **Shared library references** link.
- h. Under the Available box, select the shared library you created earlier (for example, TSMAPILIB) and click the right arrow to move it to the Selected box.
- i. Click OK twice to return to the FileNetEngine page and save changes to the master configuration.

Task 9b: Install Tivoli Storage Manager client and add native API library paths (WebLogic)

If Tivoli Storage Manager fixed content devices will be in your IBM FileNet P8 environment, complete the following procedures on each application server where Content Engine is deployed.

NOTE If you used Tivoli Storage Manager with version 3.5.x of Content Engine, you must still complete these procedures.

To install Tivoli Storage Manager client

1. Download the Tivoli Storage Manager client software from the IBM Support site <http://www-01.ibm.com/support/docview.wss?uid=swg24019757>.

(UNIX only) Record the path where you install Tivoli Storage Manager client because you will need to specify the path as the DSML directory when you create a Tivoli fixed content device in FileNet Enterprise Manager. If you are installing Tivoli Storage Manager client on multiple UNIX hosts, the installation path must be the same on each host.

On AIX, install Tivoli Storage Manager client at `/usr/tivoli/tsm/client/ba/bin`.

To copy the Tivoli Storage Manager API library files to additional servers

- If you are running a Content Engine server farm, copy the entire `tsm100` directory structure from the Content Engine installation directory to each of the servers in the farm. It is a best practice to use the same directory structure on each server in the farm. The following are example paths:

UNIX

```
/opt/FileNet/ContentEngine/tsm100
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100
```

To create a shared library definition for Tivoli Storage Manager native API library files

1. Open in an edit window the WebLogic script that sets up the domain environment. The following are example paths to this script:

UNIX

```
/opt/bea/user_projects/domains/base_domain/bin/setDomainEnv.sh
```

Windows

```
C:\bea\user_projects\domains\base_domain\bin\setDomainEnv.cmd
```

2. Edit the WebLogic script by adding the lines shown below before the line in which the `WL_HOME` variable is set. Substitute your version identifier in place of `weblogic92` as appropriate. There is no carriage return after any line that ends with `'/'` or `'\'`.

AIX

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LIBPATH=${LIBPATH}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LIBPATH EXT_POST_CLASSPATH
WL_HOME="/opt/bea/weblogic92"
export WL_HOME
```

HP-UX

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
SHLIB_PATH=${SHLIB_PATH}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export SHLIB_PATH EXT_POST_CLASSPATH
WL_HOME="/opt/bea/weblogic92"
export WL_HOME/opt/bea/user_projects/domains/base_domain/bin/
setDomainEnv.sh
```

Linux

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH EXT_POST_CLASSPATH
WL_HOME="/opt/bea/weblogic92"
export WL_HOME
```

Solaris

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH EXT_POST_CLASSPATH
WL_HOME="/opt/bea/weblogic92"
export WL_HOME
```

Solaris (64-bit)

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH_64=${LD_LIBRARY_PATH_64}:${TSMAPILIB}
EXT_POST_CLASSPATH=${EXT_POST_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH_64 EXT_POST_CLASSPATH
JAVA_OPTIONS="${JAVA_OPTIONS} -d64"
export JAVA_OPTIONS
WL_HOME="/opt/bea/weblogic92"
export WL_HOME
```

Windows

```
set TSMAPILIB=C:\Program Files\FileNet\ContentEngine\tsm100
set PATH=%PATH%;%TSMAPILIB%
set EXT_POST_CLASSPATH=%EXT_POST_CLASSPATH%;%TSMAPILIB%\TsmJavaApi.jar
set WL_HOME=C:\bea\weblogic92
```

3. If you are using WebLogic Node Manager to start and stop WebLogic Managed Servers in a clustered environment, you must enable Node Manager to use the appropriate start script:
 - a. Open for editing the node manager configuration file `WL_HOME/common/nodemanager/nodemanager.properties`.
 - b. Set the `StartScriptEnabled` property to true (default is false).

- c. Set the StartScriptName to match the script name used by Node Manager to start the managed server, depending on your operating system:

UNIX

```
StartScriptName=startManagedWebLogic.sh
```

Windows

```
StartScriptName=startManagedWebLogic.cmd
```

NOTE If the managed server is not on the same machine as the WebLogic Administration Server and you have an alternate script matching the name of the Managed Server in the domain `bin` directory, make sure to specify that script name instead of the more generic "startManagedWebLogic" script.

4. Save your edits in `nodemanager.properties` and restart the Node Manager.

Task 9c: Install Tivoli Storage Manager client and add native API library paths (JBoss)

If Tivoli Storage Manager fixed content devices will be in your IBM FileNet P8 environment, complete the following procedures on each application server where Content Engine is deployed.

NOTE If you used Tivoli Storage Manager in version 3.5.x, you must still complete these procedures.

To install Tivoli Storage Manager client

1. Download the Tivoli Storage Manager client software from the IBM Support site <http://www-01.ibm.com/support/docview.wss?uid=swg24019757>.

(UNIX only) Record the path where you install Tivoli Storage Manager client because you will need to specify the path as the DSML directory when you create a Tivoli fixed content device in FileNet Enterprise Manager. If you are installing Tivoli Storage Manager client on multiple UNIX hosts, the installation path must be the same on each host.

On AIX, install Tivoli Storage Manager client at `/usr/tivoli/tsm/client/ba/bin`.

To copy the Tivoli Storage Manager API libraries to additional servers

- If you are running a Content Engine server farm, copy the entire `tsm100` directory structure from the Content Engine installation directory to each of the servers in the farm. It is a best practice to use the same directory structure on each server in the farm. The following are example paths:

UNIX

```
/opt/FileNet/ContentEngine/tsm100
```

Windows

```
C:\Program Files\FileNet\ContentEngine\tsm100
```

To create a shared library definition for Tivoli Storage Manager native API library files

1. Open in an edit window the JBoss startup script that sets up the domain environment:

UNIX

```
run.sh
```

Windows

```
run.bat
```

2. Edit the startup script by adding the following lines at the start of the script:

- AIX

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100  
LIBPATH=${LIBPATH}:${TSMAPILIB}
```

```
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LIBPATH JBOSS_CLASSPATH
```

- **HP-UX**

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
SHLIB_PATH=${SHLIB_PATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export SHLIB_PATH JBOSS_CLASSPATH
```

- **Linux**

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH JBOSS_CLASSPATH
```

- **Solaris**

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH JBOSS_CLASSPATH
```

- **Solaris (64-bit)**

```
TSMAPILIB=/opt/FileNet/ContentEngine/tsm100
LD_LIBRARY_PATH=${LD_LIBRARY_PATH}:${TSMAPILIB}
JBOSS_CLASSPATH=${JBOSS_CLASSPATH}:${TSMAPILIB}/TsmJavaApi.jar
export LD_LIBRARY_PATH JBOSS_CLASSPATH
JAVA_OPTS="${JAVA_OPTS} -d64"
export JAVA_OPTS
```

- **Windows**

```
set TSMAPILIB=C:\Program Files\FileNet\ContentEngine\tsm100
set PATH=%PATH%;%TSMAPILIB%
set JBOSS_CLASSPATH=%JBOSS_CLASSPATH%;%TSMAPILIB%\TsmJavaApi.jar
```

Task 10: Install or update ECM Centera SDK library files

Perform the procedure in this task to update ECM Centera SDK library files only if Centera fixed content devices will be in your upgraded IBM FileNet P8 environment, and either of the following conditions apply:

- Centera fixed content devices are not in your existing environment.
- Centera fixed devices are in your existing environment, your existing version of Content Engine is 4.0, and you have not installed any fix packs.

To install EMC Centera SDK version 3.2 library files

1. Log on to the Content Engine Server machine with a user account that has the appropriate permissions to create folders and install files.
2. The `Centera` directory in the Content Engine software package or in the latest P8CE-4.5.0-xxx fix pack contains the Centera SDK version 3.2 installation files. As shown in the following table, copy the appropriate directory to a location on the Content Engine Server machine, such as `/tmp` (UNIX) or `C:\Temp` (Windows).

Operating System	Directory To Be Copied
AIX, Solaris, Windows	Copy the entire <code>Centera</code> directory
Linux	Depending on your version of gcc, copy one of the following directories: <code>Centera/gcc3.3</code> <code>Centera/gcc4</code>
HP-UX 11i v1 (11.11)	Copy <code>Centera/11i-v1-11.11</code>
HP-UX 11i v2 (11.23)	Copy <code>Centera/11iv1-11.23</code>

3. On the Content Engine Server machine, navigate within the `Centera` directory (at its copied location) to the `install` subdirectory, which contains the installer script.
4. Run the installer script corresponding to the operating system on the Content Engine Server machine. On UNIX, the installer script will prompt you for the install directory. On Windows, specify the install directory, such as `C:\Centera_SDK`, on the command line.

UNIX

```
install.sh
```

Windows

```
install.bat C:\Centera_SDK
```

- The installer script creates both 32-bit and 64-bit library directories, and puts them in a default installation directory, depending on your operating system (as shown in the following table). Accept or change the default when prompted by the script.

Operating System	Subdirectories of extracted EMC Centera SDK Directory	Description
AIX, Solaris, and Windows	lib	lib has the native library files that are to be installed.
Linux	../gcc3.3/lib ../gcc4/lib	
HP-UX	../11i-v1-11.11/lib	
HP-UXi	../11i-v1-11.13/lib	

To configure EMC Centera SDK environment variables for version 3.2

- Locate the sample setup script on the Content Engine installation media. The file name of the sample setup script depends on your operating system:

UNIX

setCenteraLibPath.sh

Windows

setCenteraLibPath.bat

- Modify the sample setup script as indicated in the following table:

Note that the CENTERA_LIB_PATH variable needs to point to the sample script, not just the installation directory that contains the script.

For example, if you have a 64-bit AIX system, and you change the destination installation path (*install_path* in the table below) from:

/usr/local/Centera_SDK (the default)

to:

/usr/local/Centera/SDK3.2.607

then change the installation path of the AIX script to:

/usr/local/Centera/SDK3.2.607/lib/64

Note that the actual location is appended with either `lib/32` or `lib/64` because the installation script creates both 32-bit and 64-bit library directories, and places them inside the `lib` directory.

Operating System	Script Revisions
AIX	<p>From:</p> <pre>CENTERA_LIB_PATH=/usr/local/Centera_SDK/lib/32 LIBPATH=\$LIBPATH:\$CENTERA_LIB_PATH export LIBPATH</pre> <p>to:</p> <pre>CENTERA_LIB_PATH=install_path/lib/32</pre> <p>or:</p> <pre>CENTERA_LIB_PATH=install_path/lib/64</pre>
Solaris	<p>From:</p> <pre>CENTERA_LIB_PATH=/opt/Centera_SDK/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>to:</p> <pre>CENTERA_LIB_PATH=install_path/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>or:</p> <pre>CENTERA_LIB_PATH=install_path/lib/64 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre>
Linux	<p>From:</p> <pre>CENTERA_LIB_PATH=/usr/local/Centera_SDK/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>to:</p> <pre>CENTERA_LIB_PATH=install_path/lib/32 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre> <p>or:</p> <pre>CENTERA_LIB_PATH=install_path/lib/64 LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$CENTERA_LIB_PATH export LD_LIBRARY_PATH</pre>

Operating System	Script Revisions
HP-UX HP-UXi	<p>From:</p> <pre>CENTERA_LIB_PATH=/opt/Centera_SDK/lib/32 SHLIB_PATH=\$SHLIB_PATH:\$CENTERA_LIB_PATH export SHLIB_PATH</pre> <p>to:</p> <pre>CENTERA_LIB_PATH=install_path/lib/32 SHLIB_PATH=\$SHLIB_PATH:\$CENTERA_LIB_PATH export SHLIB_PATH</pre> <p>or:</p> <pre>CENTERA_LIB_PATH=install_path/lib/64 SHLIB_PATH=\$SHLIB_PATH:\$CENTERA_LIB_PATH export SHLIB_PATH</pre>
Windows	<p>From:</p> <pre>set CENTERA_LIB_PATH=C:\Centera_SDK\lib\32 set PATH=%PATH%;%CENTERA_LIB_PATH%</pre> <p>to:</p> <pre>set CENTERA_LIB_PATH=install_path\lib\32 set PATH=%PATH%;%CENTERA_LIB_PATH%</pre> <p>or:</p> <pre>set CENTERA_LIB_PATH=install_path\lib\64 set PATH=%PATH%;%CENTERA_LIB_PATH%</pre>

- Copy the modified script text into one of the application server startup scripts shown in the following table, or save the updated script and call it from the application server startup script.

Application Server	Startup Script (UNIX)	Startup Script (Windows)
WebSphere	setupCmdLine.sh	setupCmdLine.cmd
WebLogic	setDomainEnv.sh	setDomainEnv.cmd
JBoss	run.sh	run.cmd

- Continue at [“Complete Content Engine post-deployment steps”](#) on page 420.

Task 11: Complete Content Engine post-deployment steps

Perform one of the following post-deployment procedures in this topic, depending on your application server type:

- “To complete post-deployment steps (WebSphere)” on page 420
- “To complete post-deployment steps (WebLogic)” on page 421
- “To complete post-deployment steps (JBoss)” on page 421

Then perform the following procedures:

- “To verify the deployment of Content Engine” on page 421
- “To verify the trace log file location” on page 422

To complete post-deployment steps (WebSphere)

1. If you are upgrading from version 3.5.x and you are using federated user repositories, perform the following substeps; otherwise, continue at [Step 2](#).
 - a. Using the WebSphere administrative console, navigate to **Security > Secure administration, applications, and infrastructure** and click **Configure**.
 - b. If you have not already done so, specify a unique user (short name) for the *Primary administrative user name*.

NOTE This name must exist in one of the realms and must be unique.
 - c. Specify the *Server user identity*. You can specify *Automatically generated server identity*, or specify one that exists in one of the repositories.

NOTE This name must exist in one of the realms and must be unique.
 - d. Save your changes to the master configuration.
2. If you are upgrading from version 3.5.x, enable administrative security (if it is not already enabled) and application security before creating a FileNet P8 domain; otherwise, continue at [Step 3](#).

NOTE If you want to enable WebSphere application or administrative security, you must do so manually. The deployment of Content Engine does not enable or check these settings.

CAUTION You must disable Java2 security; otherwise, Content Engine will not be able to start or process requests.

3. Restart the WebSphere application server where Content Engine is deployed, as follows:
 - For a standalone server, stop and start the application server.
 - For a WebSphere network deployment, stop and start the application server where Content Engine is deployed, including the Deployment Manager and all managed nodes.
 - For a cluster, stop and start the cluster.

4. Continue at [“To verify the deployment of Content Engine” on page 421.](#)

To complete post-deployment steps (WebLogic)

1. Restart the WebLogic application server (to reinitialize the WebLogic cache) where Content Engine is deployed, as follows:
 - For a standalone server, stop and start the application server.
 - For a cluster, stop and start the cluster.
2. Continue at [“To verify the deployment of Content Engine” on page 421.](#)

To complete post-deployment steps (JBoss)

1. If you are upgrading Content Engine from version 3.5.x, and your directory server type is Windows Active Directory, perform the following substeps; otherwise continue at [Step 2](#):
 - a. Make a backup of `JBOSS_HOME/server/all/conf/login-config.xml` file
 - b. Open the `login-config.xml` for editing.
 - c. Locate the following line inside the scope of the `<login-module>` XML element at the beginning of the file:

```
<login-module code="org.jboss.security.auth.spi.LdapExtLoginModule"
              flag="sufficient">
```
 - d. Add the following line immediately after the line you located in [Step c](#):

```
<module-option name="java.naming.referral">follow</module-option>
```
 - e. Save your edit.
2. Start the JBoss application server.
3. Continue at [“To verify the deployment of Content Engine” on page 421.](#)

To verify the deployment of Content Engine

1. Verify the state of Content Engine deployment by browsing to the following web page:
`http://server:port/FileNet/Engine`
where:
`server` is the host name of the machine where Content Engine Server is deployed.
`port` is the WSI port used by the application server where Content Engine Server is deployed.

Example web page addresses are shown in the following table:

Application Server Type	Web Page Address
WebSphere	http://server:9080/FileNet/Engine
WebLogic	http://server:7001/FileNet/Engine
JBoss	http://server:8080/FileNet/Engine

2. Verify that the web page contains the build and version number of Content Engine and its associated JAR files, and an indication that no errors occurred.

NOTE It is a best practice to bookmark the web page address in your browser.

3. If you upgraded Content Engine from version 4.0.x, continue at [“To verify the trace log file location” on page 422](#); otherwise, continue at [“Install the latest Content Engine Client files on other IBM FileNet P8 servers \(for staged upgrades\)” on page 423](#).

To verify the trace log file location

Perform the following steps to check the path to the trace log file, `p8_server_trace.log`.

1. Start Enterprise Manager by double-clicking the FileNet Enterprise Manager Administration Tool icon on the desktop, or by choosing **Start > All Programs > IBM FileNet P8 Platform > FileNet Enterprise Manager Administration Tool**.
2. Navigate to the level (domain, site, virtual server, or server instance) at which trace logging is configured, right-click the node at that level, and choose Properties.
3. Click the **Trace Control** tab, and perform the following substeps:
 - a. If the current value of the Log File Output Location parameter is not consistent with the version of the application server, edit the value as needed.

The following table shows default locations, at the server instance level, for the trace log file, starting at `install_root`, the installation path for the application server.

Application Server Type	Path to Trace Log File
WebSphere	<code>install_root/profiles/profile_name/FileNet/server_name/p8_server_trace.log</code>
WebLogic	<code>install_root/user_projects/domains/domain_name/FileNet/server_name/p8_server_trace.log</code>
JBoss	<code>install_root/bin/FileNet/server_name/p8_server_trace.log</code>

- b. Click **OK**.

Task 12: Install the latest Content Engine Client files on other IBM FileNet P8 servers (for staged upgrades)

When you upgrade Content Engine Server software, you must also upgrade the associated Content Engine Client files installed on other machines running IBM FileNet P8 components, for example, on Process Engine and Application Engine servers. In a standard upgrade of your IBM FileNet P8 system, you would install these client files in the course of upgrading each respective component.

However, if you are staging your IBM FileNet P8 upgrade over a period of time and not upgrading one or more of the other IBM FileNet P8 components at this time, you must still perform the Content Engine Client install on the other component machines. In this case, use the following topics in the sections for the other components:

- [“Upgrade the Content Engine Client files on Process Engine servers” on page 519](#)
- [“Install the latest Content Engine Client files on Application Engine servers” on page 564](#)

NOTES

- You will have this same client-installation requirement for any expansion products that use Content Engine Client files, such as:
 - Workplace XT
 - Records Manager
 - Business Process Framework
- You must redeploy any components that are web-application-server based, such as Application Engine, Workplace XT, and Records Manager, after you upgrade the Content Engine Client files on the associated machines.

Task 13: Configure storage devices for upgrades from 3.5.x

Perform the procedures in this topic to prepare your storage devices when upgrading from Content Engine version 3.5.x.

To prepare file store devices when migrating to UNIX

- Install and configure your choice of software to permit the Content Engine UNIX server to mount your existing version 3.5.x file store devices.

To prepare NetApp SnapLock Volumes for the upgrade

If your existing FileNet P8 domain includes a SnapLock fixed content device, complete the following procedure. Perform this procedure for each of your NetApp filers (network-attached appliances for data storage) to allow access to your fixed content via NFS instead of, or in addition to, CIFS.

1. Check the prerequisites.
 - a. Check the *IBM FileNet P8 Hardware and Software Requirements* to verify your NetApp filers use the version of the Data ONTAP operating system that is supported in version 4.5 of IBM FileNet P8. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)

For information on accessing and configuring your NetApp filers, consult the following Data ONTAP manuals:

 - System Administration Guide
 - Software Setup Guide
 - File Access and Protocols Management Guide
 - b. Make sure you are licensed to use NFS to access your NetApp filers.
2. Set the security style of a NetApp storage volume to enable support for NFS clients.

Each qtree (virtual subvolume of a storage volume) has exactly one of the security styles (scheme for setting security on files and directories in the qtree) shown in the following table:

Security Style	Description
UNIX	UNIX file permission attributes. Only NFS clients can create files and directories in a UNIX qtree.
NTFS	Windows access control lists. Only CIFS clients can create files and directories in an NTFS qtree.
Mixed	Both UNIX and NTFS security styles. Only one security style at a time is allowed. The current style is that of the last client to modify it.

Since all pre-4.0.0 versions of IBM FileNet P8 support only CIFS, all NetApp storage volumes used by Content Engine Server use NTFS security style, which you must change to UNIX or Mixed. Specify the Mixed style for qtrees that must service requests for both NFS and CIFS clients during the upgrade process; otherwise, specify UNIX style.

For each qtree, perform the following steps to specify the security style:

- a. Access the Data ONTAP administrative console (see the ONTAP System Administration Guide for information on administrative access methods).
- b. Run the qtree command as in the following example, which sets the UNIX security style on the qtree `/vol/vol1/sa1` of NetApp filer *NAFiler* the security style to UNIX:

```
telnet NAFiler
qtree security /vol/vol1/sa1 unix
```

After the qtree command executes, all files created by Content Engine Server on a UNIX platform will have UNIX security attributes.

3. Map UNIX users and groups to Window equivalents.

Because version 3.5.x of Content Engine Server support CIFS, rather than NFS, all existing files on a NetApp volume have NTFS security attributes; and the users and groups with access rights to these files are defined by Windows.

To allow version 3.5.x files to remain accessible, you must create a mapping between the new UNIX account for version 4.5 of Content Engine Server and the old Windows account for version 3.5.x.

Each NetApp filer has its own configuration file, `/etc/usermap.cfg`, to map between Windows user names and equivalent UNIX user names. A UNIX user attempting to access a file having NTFS security attributes uses `usermap.cfg` to determine if a mapping exists between the UNIX account and an equivalent Windows account. If the mapping exists, the access checks on the target file will use the Windows account.

Each `usermap.cfg` entry has the following format:

```
[IP_qualifier:] Windows_name [direction] [IP_qualifier:] UNIX_name
```

The meaning of each element in the entry is shown in the following table:

Element	Meaning
<i>IP_qualifier</i>	Qualifies the name according to the source address of the requester
<i>Windows_name</i>	The name of the Window user or group in domain name format (for example, <i>DomainName\UserName</i>). The Windows name must be in the Windows domain that the NetApp filer is configured to use when authenticating Windows users.

Element	Meaning
<i>UNIX_name</i>	<p>The name of a UNIX user or group. The name must be defined in the file or directory service that the NetApp filer uses to authenticate UNIX users. In many cases this will be the local <code>/etc/passwd</code> (for users) or <code>/etc/group</code> (for groups).</p> <p>If it is a group, it may be necessary to also define it in an NIS repository or an LDAP directory server, depending on how the filer is configured.</p> <p>In either case the UID (UNIX user ID) must be identical to the UID of the user under which the Content Engine Server is executing.</p>
<i>Direction</i>	<p>The direction of the mapping, either <code><=</code> or <code>=></code>.</p> <p><code><=</code>: Maps <i>UNIX_name</i> to <i>Windows_name</i></p> <p><code>=></code>: Maps <i>Windows_name</i> to <i>UNIX_name</i></p>

For example, the following steps define a mapping on a NetApp filer between `FNCE_OS_User` (the Windows user account under which version 3.5.x of Content Engine Server executes) and `FNCE_UNIX_User` (the UNIX user account under which version 4.5 of Content Engine Server executes).

- a. Log on to the machine where version 3.5.x of the Content Engine is installed.
- b. Connect to the root volume on the target NetApp filer using the Administrator account.

By default, the NetApp filer root volume is accessible from a Windows client as a CIFS share named `C$`, as in the following example (where *NAFiler* is the host name of the target NetApp filer at your site).

```
C:\> net use n: \\NAFiler\C$ /user:NAFiler1\Administrator
```

- c. Edit `/etc/usermap.cfg` by adding the following stanza:

```
CEDomain\FNCE_OS_User => FNCE_UNIX_User
```

- d. Edit `/etc/passwd` by adding the following stanza:

```
FNCE_UNIX_User:CEServers:205:7100:./home/FNCE_UNIX_User:
```

Continue at [“Upgrade FileNet Enterprise Manager” on page 342.](#)

Task 14: Establish the FileNet P8 domain and Global Configuration Data (GCD) for 3.5.x upgrade

Perform the procedures in this topic only if you are upgrading from Content Engine version 3.5.x. With Content Engine installed and deployed, you will use Enterprise Manager to create a FileNet P8 domain.

To create a FileNet P8 domain

NOTE If you run Enterprise Manager as a limited user account, you cannot update the *Base URL for the FileNet P8 Platform help files* field in the General tab of the Enterprise Manager properties dialog box.

1. Start Enterprise Manager by double-clicking the FileNet Enterprise Manager Administration Tool icon on the desktop, or by choosing **Start > All Programs > IBM FileNet P8 Platform > FileNet Enterprise Manager Administration Tool**.
2. Work through the screens in the following table. The initial values displayed in the screens are default values that you must change to match your site. Refer to your installation worksheet for the values for your site. For information, see “installation and upgrade worksheet” in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), perform the following steps to quickly see only the installation properties you must specify for the Create FileNet P8 domain wizard:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select "EM: Create FileNet P8 domain."
- Click the AutoFilter drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade".
- Click the AutoFilter drop-down arrow in all the other column headers and select (All).

In this screen...	Perform this action...
FileNet P8 Logon	Click Add to create a FileNet domain. NOTE For subsequent logons to Enterprise Manager, you can access an existing FileNet P8 domain by clicking Connect .

In this screen...	Perform this action...
Add Domain Configuration	<p>Provide the following information, and then click OK.</p> <ul style="list-style-type: none"> • Nickname - A name (not part of any credentials) for connecting to Content Engine. • Connection - http • Server - The host name of the machine where the Deployment Manager (WebSphere) or Administrative Server (WebLogic) runs. <p>NOTE In a non-managed application server environment (such as a JBoss cluster, or a standalone WebSphere or WebLogic), specify the host name for just one of the application servers. You can configure Enterprise Manager connections to the other non-managed application servers.</p> <ul style="list-style-type: none"> • Port - The port number appropriate for you application server. For example: <ul style="list-style-type: none"> – 9080 (WebSphere) – 7001 (WebLogic) – 8080 (JBoss) <p>NOTE In a non-managed application server environment (such as a JBoss cluster, or a standalone WebSphere or WebLogic), specify the port number for just one of the application servers.</p> <ul style="list-style-type: none"> • Path - wsi/FNCEWS40MTOM • URL - http://<i>server</i>:<i>port</i>/wsi/FNCEWS40MTOM where <i>server</i> and <i>port</i> are the values you specified above. • Username - The value you specified for the bootstrap user name in Configuration Manager (see <i>ce_bootstrap_admin</i> in <i>Plan and Prepare Your Environment for IBM FileNet P8</i>). • Password - The password for the bootstrap user. • Remember password - Select the check box if you want to avoid typing the password each time you log on as the bootstrap user. (The password will be encrypted.) • Use integrated login - Select the check box if you want Kerberos authentication for the bootstrap user.

3. Continue at [“To configure directory service authentication” on page 429](#).

To configure directory service authentication

NOTE For multi-realm authorization, run the Create a Directory Configuration wizard once for each realm. Refer to [FileNet P8 Administration > Enterprise-wide Administration > FileNet P8 Security > How to > Configure for multiple realms](#).

1. In the FileNet P8 dialog box, click **Connect**.
2. In the Create P8 Domain screen, enter the name for a new FileNet P8 domain and click **Continue** to start the Create a Directory Configuration wizard.

If an error occurs, check the application server log file on the machine where Content Engine is deployed:

Application Server Type	Path to Log File
WebSphere	<i>WAS_install_path/AppServer/profiles/profile_name/logs/server_name/SystemOut.log</i>
WebLogic	<i>WLS_install_path/user_projects/domains/domain_name/servers/server_name/logs/server_name.log</i>
JBoss	<i>JBOSS_DIST/server/server_name/log/server_name.log</i>

3. Work through the screens in the following table. The initial values displayed in the screens are default values that you must change to match your site.

The configuration parameters required by the Create a Directory Configuration wizard are in many cases the same as those you provided to Configuration Manager when you configured LDAP in [“Configure Content Engine instances” on page 37](#).

Refer also to the topic for your directory service within the IBM FileNet P8 help topic [System Administration > Enterprise-wide Administration > FileNet P8 Security > Directory service providers](#).

Refer to your installation worksheet for the values for your site. For information, see “installation and upgrade worksheet” in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), perform the following steps to quickly see only the installation properties you must specify for the Create a Directory Configuration wizard:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select "EM: Create a Directory Configuration."
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
- Click the AutoFilter drop-down arrow in all the other column headers and select (All).

In this screen...	Perform this action...
Welcome	Click Next to proceed.
Select Type and Name Directory Configuration	<p>Provide the following information, and then click Next.</p> <ul style="list-style-type: none"> • Type - The type of directory server you specified in Configuration Manager • Display Name - A name (unique across all FileNet P8 domains in a forest) for the new directory configuration • Existing Names - The names of existing directory configurations within the domain to help you choose a unique display name.
Select General Directory Configuration Properties	<p>Provide the following information, and then click Next.</p> <ul style="list-style-type: none"> • Host - The name or IP address of the host where the Windows domain controller is installed. In a forest environment, the Windows domain names must be distinct if name you specify must be unique within each. • Port - The LDAP port number (389, by default). • Directory Service User - Fully qualified distinguished name of <i>ce_service_user</i>, the directory service bind user you specified when you configured LDAP using Configuration Manager. • Password - Password of the directory service user. • Is SSL Enabled - True or False. <p>The following parameters apply only to Active Directory:</p> <ul style="list-style-type: none"> • Connection Timeout - Specifies the Active Directory Service provider connection timeout in milliseconds. The default is 500 milliseconds. If the connection is across a WAN, consider increasing the value. • Return Name as DN - Specifies format in which Active Directory returns user or group names: <ul style="list-style-type: none"> – True - Return in Distinguished Name format – False - Return in User Principal Name format (default choice)

In this screen...	Perform this action...
Select User Directory Configuration Properties	<p>Provide the following information, and then click Next.</p> <ul style="list-style-type: none"> • Base DN - Base distinguished string to use in LDAP user searches. • User Search Filter - LDAP search filter for finding user names. • User Display Name Attribute - The display name for a user object generated by the authentication provider: <p>Active Directory, Active Directory LDS, IBM Tivoli Directory Server, Novell eDirectory</p> <p>cn (by default)</p> <p>Sun Java System Directory Server</p> <p>uid</p> • User Short Name Attribute - The name you use to log in: <p>Active Directory, Active Directory LDS, IBM Tivoli Directory Server, Novell eDirectory</p> <p>cn (by default)</p> <p>Sun Java System Directory Server</p> <p>uid</p>

In this screen...	Perform this action...
Select Group Directory Configuration Properties	<p>Provide the following information, and then click Next.</p> <ul style="list-style-type: none"> • Group Base DN - Base distinguished string to use in LDAP group searches. • Group Search Filter - LDAP search filter for finding group names. • Group Display Name Attribute - cn, by default. • Group Short Name Attribute - cn, by default. • Group Membership Search Filter - The search filter for group membership queries. <p>The following parameter applies only to Active Directory.</p> <ul style="list-style-type: none"> • Search Cross Forest Group Membership: <ul style="list-style-type: none"> – True - Enables cross-forest group membership searches. – False - Disables such searches (the default). <p>The following parameter applies to all directory server types but has no effect for Active Directory LDS, which does not support cross-domain memberships:</p> <ul style="list-style-type: none"> • Restrict membership to configured realms: <ul style="list-style-type: none"> – Select the check box to restrict group lookups for a user to configured realms only. (The user's group memberships in unconfigured realms are ignored). – Clear the check box to prevent a user with memberships in unconfigured realms from logging on (the system cannot look up all group memberships). [Deleted the following (last) paragraph in this table cell.]

4. In the Configure New Domain Permissions message box, click **OK** to acknowledge that the directory configuration is complete but remains in restricted mode. The Configure New Domain Permissions wizard automatically starts (if you are in Enterprise Manager for the first time and have not defined any GCD administrators). Continue at [“To configure permissions for a FileNet P8 domain” on page 432.](#)

To configure permissions for a FileNet P8 domain

1. Work through the screens in the Configure New Domain Permissions wizard, as shown in the following table.

For information on the GCD administrators, see “Installation and upgrade worksheet” in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Configure New Domain Permissions wizard:

- Click the AutoFilter drop-down arrow in the “Installation or Configuration Program” column header, and select “Configure New Domain Permissions.”
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
- Click the AutoFilter drop-down arrow in all the other column headers and select (All).

In this screen...	Perform this action...
Welcome	Click OK to proceed.
Specify Domain Administrators	Click Add to load the Select Users and Groups dialog box that lets you add users and groups to the list of GCD administrators. (Optional) Click Remove to remove the Content Engine system user (<code>ce_bootstrap_admin</code> in <i>Plan and Prepare Your Environment for IBM FileNet P8</i>). Click Next .
Completing the New Domain Permissions Wizard	Click Finish .

2. In the Configure New Domain Permissions message box, click **OK**.

To set the Statement Cache Size value for the GCD database

If you are using Microsoft SQL Server 2005 JDBC Driver or Oracle JDBC Driver, you need to set the Statement Cache Size parameter value to 0 for each data source you created to access the GCD database, as shown in the following steps:

1. Access the page containing the Statement Cache Size parameter:

WebSphere

Navigate to the WebSphere administrative console page containing the field Statement Cache Size property. For example, in WebSphere 6.1.x, navigate to Resources > JDBC Providers > JDBC_provider > Data sources > `data_source` > WebSphere Application Server data source properties.

WebLogic

Navigate in the tree view of WebLogic Administration Console to `FNCEDomain` > Services > JDBC > Data Sources > `Data_Source_Name` > Connection Pool.

2. Set the Statement Cache Size to 0 and save your change.

To enable the Image Services dispatcher for CFS-IS

If Content Federation Services for Image Services (CFS-IS) is part of your version 3.5.x system, enable the Image Services dispatcher, as follows:

1. If it is not already running, start Enterprise Manager by double-clicking the FileNet Enterprise Manager icon on the desktop, or by choosing Start > All Programs > FileNet P8 Platform > Enterprise Manager.
2. Right-click the Enterprise Manager root node in the tree view and choose Properties.
3. Click the **IS Import Agent** tab, select the Enable Dispatcher check box, and then click **OK**.

Task 15: Create the data sources for an object store

Each object store in your site requires its own distributed (XA) and non-distributed (non-XA) JDBC data sources. When you completed [“Configure Content Engine instances upgraded from 3.5.x” on page 345](#), you created the JDBC data sources for the Global Configuration Database (GCD). Complete either of the procedures in this topic to use Configuration Manager to create the pair (XA and non-XA) of data sources for the initial object store. (You can use the same procedures to create data sources for subsequent object stores.)

For each additional object store, you must create another pair of data sources, using the procedures in this topic. You can create these data sources after you have confirmed your Content Engine configuration.

NOTE Configuration Manager will not create a new data source with the same name as that of an existing data source. If you want to reuse the name of an existing data source for an object store, manually delete the existing data source before creating the new data source. Refer to your application server documentation for more information.

Refer to the information in your installation worksheet to complete the procedures in this topic. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following steps to quickly see only the installation properties you must specify for creating JDBC data sources:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select one of these Configuration Manager options:
 - CM: Set Application Server properties
 - CM: Configure JDBC Data Sources
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

To create the data sources using the graphical user interface to Configuration Manager

1. If you have not done so already, log on to the machine where you installed Content Engine as `ce_install_user`. For details on required accounts and related permissions, see [“Accounts for Content Engine” on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Start the GUI version of Configuration Manager by running one of the following commands, depending on the operating system on the machine where you installed Content Engine:

UNIX

```
ce_install_path/tools/configure/CMUI/cmui
```

Windows

Complete one of the following actions:

- Double-click the **FileNet Configuration Manager** desktop shortcut.
 - Select **Start > All Programs > IBM FileNet P8 Platform > FileNet Configuration Manager**.
 - Run `ce_install_path\tools\configure\CMUI\cmui.exe`.
3. Refer to your installation worksheet to specify the values for the properties required for your new object store data source profile. For more information, see ["Installation and upgrade worksheet" on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following actions to quickly see only the properties you must specify for Configuration Manager:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select one of these Configuration Manager options:
 - CM: Set Application Server properties
 - CM: Configure JDBC Data Sources
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

4. Start the Create New Configuration Profile wizard by choosing **File > New Configuration Profile** or by clicking the wizard icon in the tool bar.

In this screen...	Complete this action...
Configuration Profile Information	<ul style="list-style-type: none"> • Provide the following information for the profile: <ul style="list-style-type: none"> – Enter a name for the profile. The name must be valid as a directory name for your operating system. Configuration Manager will create a directory with the profile name for storing the configuration files associated with this profile. For more information of profiles, see “Configuration profile concepts” on page 639 in the Configuration Manager reference appendix. – Specify the path for the profile. Either type in the full path to the profile directory or click Browse to locate the directory. The default path is <i>ce_install_path/tools/configure/profiles</i>, where <i>ce_install_path</i> is the location where Content Engine is installed. • Choose an application server type for the profile. Select WebSphere, JBoss, or WebLogic. If you click Finish instead of Next, you will create a default profile instead of a profile for just the Configure JDBC task. You will need to come back later to supply the required application server properties before you can run the configure JDBC task. • Click Next. • Continue at one of the following screens: <ul style="list-style-type: none"> – “Set Application Server Properties for WebSphere” on page 438 – “Set Application Server Properties for JBoss” on page 439 – “Set Application Server Properties for WebLogic” on page 440

In this screen...	Complete this action...
Set Application Server Properties for WebSphere	<p>This screen is displayed only if you selected WebSphere in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the object store, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the name of the WebSphere application server cell where Content Engine will be deployed. – If you have already configured WebSphere to use certificates, clear the “Do not use SSL certificates for server communications” check box. Otherwise, leave the check box selected. <p>NOTE Selecting this check box will change your WebSphere settings for communicating with other servers, such as Application Engine.</p> • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 440.

In this screen...	Complete this action...
Set Application Server Properties for JBoss	<p data-bbox="605 352 1339 420">This screen is displayed only if you selected JBoss in the previous screen.</p> <ul data-bbox="605 436 1422 844" style="list-style-type: none"><li data-bbox="605 436 1422 714">• Provide the following information for the application server:<ul data-bbox="654 489 1422 714" style="list-style-type: none"><li data-bbox="654 489 1422 525">– Select the application server version from the list.<li data-bbox="654 535 1422 630">– Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory.<li data-bbox="654 640 1422 714">– Enter the name of the JBoss application server name where Content Engine will be deployed.<li data-bbox="605 730 1422 766">• Click Next.<li data-bbox="605 783 1422 844">• Continue with “Select the tasks that you want included in the Configuration Profile” on page 440.

In this screen...	Complete this action...
Set Application Server Properties for WebLogic	<p>This screen is displayed only if you selected WebLogic in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the object store, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the machine name or the IP address of the local host for the application server host. – Enter the fully qualified path to the WebLogic application server user projects directory, or click Browse to locate the directory. – Enter the WebLogic application server domain name where Content Engine will be deployed. – Enter the name of the WebLogic application server name where Content Engine will be deployed. • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 440.
Select the tasks that you want included in the Configuration Profile	<ul style="list-style-type: none"> • Select only the Configure JDBC Data Sources task. Clear the check box for all other tasks. • Click Finish to create the profile and save the application server properties.

The profile you created is displayed as an icon in the profile pane (left-hand pane), along with the Configure JDBC Data Sources icon.

5. Provide property values for the JDBC data sources for the object store.
 - a. Right-click **Configure JDBC Data Sources** in the profile pane, and select **Edit Selected Task**.
 - b. Provide the property values for your database, using the appropriate table for your database type:

DB2® for Linux®, UNIX®, Windows®

In this field...	Provide this information...
JDBC driver name	Select “DB2 Universal JDBC Driver” from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the object store tablespace or database. For example, FNOS1DS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the object store tablespace or database. For example, FNOS1DSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the object stores.
Database name	The name of the object store database.
Database user name	The name of the DB2 object store tablespace user.
Database password	The password for the DB2 object store tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the object store. The file name must end with <code>-ds.xml</code> . For example, <code>os1-ds.xml</code> .

In this field...	Provide this information...
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the object store. The file name must end with <code>-ds.xml</code> . For example, <code>os1-ds.xml</code> .
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6 . The default is enabled.

DB2® for z/OS®

In this field...	Provide this information...
JDBC driver name	Select “DB2 for z/OS Universal JDBC Driver” from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the object store tablespace or database. For example, <code>FNOS1DS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD tablespace or database. For example, <code>FNOS1DSXA</code> .
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the GCD and object stores.
Database name	The name of the GCD database instance name.
Database user name	The name of the DB2 GCD tablespace user.
Database password	The password for the DB2 GCD tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.

In this field...	Provide this information...
JDBC data source file name	<p>The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	<p>Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6. The default is enabled.</p>

MS SQL Server

In this field...	Provide this information...
JDBC driver name	Select "Microsoft JDBC Driver 2005" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD tablespace or database. For example, FNOS1DS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD tablespace or database. For example, FNOS1DSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the SQL Server database instance in which you create databases for the GCD and object stores.
Database name	The name of the GCD database for SQL Server.
Database user name	The name of the SQL Server user with administrative rights to the GCD database.
Database password	The password for the SQL Server user with administrative rights to the GCD database. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> . If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.

In this field...	Provide this information...
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6 . The default is enabled.

Oracle

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD tablespace or database. For example, <code>FNOS1DS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD tablespace or database. For example, <code>FNOS1DSXA</code> .
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database name	The SID of the Oracle database containing the GCD tablespace.
Database user name	The name of the Oracle GCD tablespace owner.
Database password	<p>The password for the Oracle GCD tablespace owner. The tool encrypts the password for you.</p> <p>Enter the password again in the Confirm field.</p>

In this field...	Provide this information...
JDBC data source file name	<p>The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
JDBC XA data source file name	<p>The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD. The file name must end with <code>-ds.xml</code>. For example, <code>gcd-ds.xml</code>.</p> <p>If you have already created data sources for the GCD and do not want the Configuration Manager tool to create them for you, leave this field blank and clear the Task enabled check box.</p>
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6 . The default is enabled.

Oracle RAC

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver (RAC support)" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the object store tablespace or database. For example, <code>FNOS1DS</code> .
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the object store tablespace or database. For example, <code>FNOS1DSXA</code> .
Database server name RAC node 1	The host name of the machine where the database software is installed for node 1.
Database port number RAC node 1	The port number used by the Oracle database instance in which you create tablespaces for the object stores.
Database server name RAC node 2	The host name of the machine where the database software is installed for node 2.

In this field...	Provide this information...
Database port number RAC node 2	The port number used by the Oracle database instance in which you create tablespaces for the object stores.
Database service name	The SID of the Oracle database containing the object store tablespace.
Oracle RAC retries	The number of retries for Oracle RAC.
Oracle RAC delay	The amount of delay for Oracle RAC.
Database user name	The name of the Oracle object store tablespace owner.
Database password	The password for the Oracle object store tablespace owner. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the object store. The file name must end with <code>-ds.xml</code> . For example, <code>os1-ds.xml</code> .
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the object store. The file name must end with <code>-ds.xml</code> . For example, <code>os1-ds.xml</code> .
Task enabled	Select the Task enabled check box to execute the configure JDBC Data Sources task later in Step 6 . The default is enabled.

c. Select **File > Save** to save your changes.

- Apply the JDBC property settings by right-clicking **Configure JDBC Data Sources** in the profile pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the bootstrap properties.

TIP You can check the completion status of a task by right-clicking **Configure JDBC Data Sources** in the profile pane, and select **Check Task Status**.

- (Oracle and JBoss only) Continue at [“To edit XA data source XML files” on page 450](#).
- (WebSphere only) Stop and start WebSphere Application Server.
- Continue at [“Upgrade Content Search Engine software from 3.5.x” on page 451](#).

To create the data sources using the command-line interface to Configuration Manager

1. If you have not done so already, log on to the machine where you installed Content Engine as *ce_install_user*. For details on required accounts and related permissions, see [“Accounts for Content Engine” on page 71](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

2. Set the current directory to *ce_install_path/tools/configure*, where:

ce_install_path is the path where you installed Content Engine.

3. Generate the *configurejdbc.xml* file and the *applicationserver.xml* file by running the following command:

```
configmgr generateConfig -appserver app_server_type -db db_type -ldap
ldap_type -deploy deploy_type -task ConfigureJDBC -path mypath
```

where:

app_server_type is WebSphere, WebLogic, or JBoss.

db_type specifies the type of database to be used by Content Engine and must be one of the following: mssql, oracle, oracle_rac, db2, or db2zos.

ldap_type specifies the type of directory service repository Content Engine uses for authenticating users and must be one of the following: activedirectory, adam, edirectory, sunjava, or tivoli. The adam option applies to both Microsoft ADAM and AD LDS.

deploy_type specifies the type of Content Engine deployment. The value must be one of the following: standard, cluster, or netdeploy (network deployment). Specify standard if you are deploying Content Engine to a standalone (that is, a server that is neither managed nor clustered) WebSphere, WebLogic, or JBoss application server. Specify cluster if you are deploying Content Engine to a WebSphere, WebLogic, or JBoss application server cluster. Specify netdeploy if you are deploying Content Engine to a managed WebSphere application server instance (using Network Deployment for managing individual servers that are not necessarily in a cluster).

-path mypath is optional and specifies the path to where the generated configuration XML files will be placed. If you are deploying multiple Content Engine instances on the same machine, you will need to specify a separate directory for each instance.

4. Use a text editor or XML editor to open the *applicationserver.xml* file and edit it as follows:
 - a. Refer to the appropriate parameter information from your installation and upgrade worksheet for the following steps. For information on the parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), complete the following steps to quickly see only the installation properties you must specify for your application server:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Set Application Server properties."
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."

- Click the AutoFilter drop-down arrow in all other column headers and select (All).
- b. Replace each occurrence of `****INSERT VALUE****` with a value appropriate for your site. Refer to the descriptions in the file for more information.
- c. Verify that the default values for the remaining properties are correct for your site.
- d. (Optional) Encrypt the password for the application server administrative user by running the password encryption utility (see [“Encrypt passwords” on page 700](#)), and then copy the encrypted value into the file.

CAUTION Any password you do not encrypt will be stored and sent as clear text.

- e. Save your edits.
5. Use a text editor or XML editor to open the `configurejdbc.xml` file and edit it as follows:
- a. Refer to the appropriate parameter information from your installation and upgrade worksheet for the following steps. For information on the parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), complete the following steps to quickly see only the installation properties you must specify for creating JDBC data sources:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "CM: Create JDBC data sources."
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
- b. Replace each occurrence of `****INSERT VALUE****` with a value appropriate for your site. Refer to the descriptions in the file for more information.
 - c. Verify that the default values for the remaining properties are correct for your site.
 - d. Set the `<TaskEnabled>` value to `true` so you can run the configuration task in [Step 6](#).
 - e. (Optional) Encrypt the password for the user of the database associated with the data sources you are creating by running the password encryption utility (see [“Encrypt passwords” on page 700](#)), and then copy the encrypted value into the file.

CAUTION Any password you do not encrypt will be stored and sent as clear text.

- f. Save your edits.
6. Execute the `configurejdbc.xml` file by running the following command:

```
configmgr execute -task ConfigureJDBC -path mypath
```

where `-path mypath` is optional and specifies the path to the `configureJDBC.xml` file.

7. Check the completion status by running the following command:

```
configmgr checkStatus -task ConfigureJDBC -path mypath
```

where `-path mypath` is optional and specifies the path to the `configureJDBC.xml` file.

8. (Oracle and JBoss only) Continue at [“To edit XA data source XML files” on page 450](#).
9. (WebSphere only) Stop and start WebSphere Application Server.
10. Continue at [“Create the initial object store” on page 133](#).

To edit XA data source XML files

ConSelectfiguration Manager puts the following <mbean> tag into the XML file for each XA data source it creates when the database type is Oracle and the application server type is JBoss:

```
<mbean code="org.jboss.resource.adapter.jdbc.vendor.OracleXAExceptionFormatter"
      name="jboss.jca:service=OracleXAExceptionFormatter">
  <depends optional-attribute name="TransactionManagerService">
    jboss:service=TransactionManager
  </depends>
</mbean>
```

At this point, if you have created an XA data source for the GCD in [“Configure Content Engine instances upgraded from 3.5.x” on page 345](#) and have not manually created any XA data sources, only one XA data source XML file contains an <mbean> tag.

Because exactly one XA data source XML file must contain an <mbean> tag, you need to remove the tag from the XML file for the XA data source you have just created in this topic, or for any XA data source you create later; otherwise, you will not be able to create an associated object store.

Complete the following steps to remove the <mbean> tag from the XA data source XML file:

1. Navigate to the directory containing all the XA data source XML files. For example, if JBoss is installed on a UNIX machine and the JBoss server name is server1, the directory is typically `JBOSS_HOME/server/server1/deploy`.
2. Find the XML file for the XA data source you created in this topic and open it for editing. For example, if the XA data source is named FNDS1, the XML file name is `FNDS1XA-ds.xml`.
3. Find and delete the <mbean> tag from the XML file.
4. Save your edits.
5. Continue at [“Upgrade Content Search Engine software from 3.5.x” on page 451](#).

Task 16a: Upgrade Content Search Engine software from 3.5.x

Follow this task to upgrade the Content Search Engine software and related data from 3.5.x to 4.5.x.

If you used the full-text search feature (CBR) in 3.5.x, you must install and configure the new 4.5 Content-Search Engine (Autonomy K2) software. The 3.5.x content-search indexes must be upgraded to 4.5.x index areas, now called K2 collections.

As of the 4.0 release of P8 Platform, the full-text search feature was removed as a built-in function of the Content Engine. Instead, the remote, Autonomy K2 Content Search Engine software is installed and configured through Enterprise Manager to enable full-text searching.

To upgrade Content Search Engine from version 3.5.x to 4.5.x, you will install and configure the Autonomy K2 product and then upgrade the existing indexes in conjunction with the upgrade of Content Engine data as part of the overall upgrade of the Content Engine.

Production environment upgrades

Upgrade of Content Search Engine and related Content Engine data must occur as an in-place upgrade. As such, the data is migrated to 4.5.x and is no longer usable in the previous version of the P8 Platform.

The 3.5.x index areas are upgraded at the same time as the Content Engine data is upgraded, through the Content Engine upgrader tool. When the upgrader tool runs, specific changes are made to the GCD, in relation to Content-Based Retrieval, to facilitate the installation of the new Autonomy K2 product. The tool also uses the existing Verity information to create the Verity Domain Configuration, including new locale requirements, for the Autonomy K2 product.

To perform an upgrade in a migration scenario, create a duplicate of your P8 system by performing a backup and then a restore. Using the restored system, complete the migration from 3.5.x to 4.5.x. This will leave the original production environment untouched while testing is performed on the new system.

When you're ready to migrate the production environment to the current version, back up the system and then perform the in-place upgrade on the production environment.

Content Search Engine software upgrade

The Autonomy K2 software must be installed on each machine that is part of your Content Search Engine configuration. You must designate one machine in the configuration as the Master Administration Server. The Master Administration Server can be used as a standalone Content Search Engine, or additional K2 Administration Servers can be added. All K2 Administration servers are configured and controlled through the K2 Dashboard of the Master Administration server.

The Autonomy K2 software that underlies IBM FileNet P8 Content Search Engine has many inherent features that you might want to configure that are not discussed in the IBM FileNet

documentation. For details, see the Autonomy documentation that is installed with the Autonomy K2 Master Administration Server located at:

`http://Master Administration Server hostname:9990/verity_docs/`

The Autonomy documentation set is not searchable from the IBM FileNet P8 Help but it does have its own internal index and search functionality.

CAUTION Although the K2 Dashboard provides you with documentation for, and direct interfaces to, the K2 collections, IBM FileNet requires that you use Enterprise Manager to manage collections associated with Content Search Engine index areas (for example, to add and remove index areas).

NOTES

- Autonomy K2 was previously known as Verity, and you will see Verity still used in many of the interfaces described in the following procedures.
- If your Content Engine runs on Windows, then the machines in your Content Search Engine configuration must run on Windows. If your Content Engine runs on UNIX, then the machines in your Content Search Engine configuration must run on UNIX, but it doesn't have to be the same UNIX type.
- Where machine name variables are required, IP addresses will not validate. A valid name must be entered.
- If you unimport the style set, the original files will be deleted from your system. In this scenario, if you wish to re-import the style set, you will need to recover it from your installation package. In order to avoid this situation, you can either enter a unique name for the Style Set Alias during the initial Content Search Engine (Autonomy K2) installation, or make a backup copy of the original style set. If you enter a unique name for the style set during installation, ensure you use that name when you configure Content Engine for Content-Based Retrieval.
- Stop word files can be used to increase performance by about 30%. You can put a file named `style.stp` into the `stylefiles` directory to list words you do not want full-text indexed (for example, short words such as `a`, `the`, and `and`). However, using a stop word file also prevents searching on these words. See the K2 documentation for more details. To create a stop word file you can typically copy a file named `vd30.stp` from either the main K2 install directory or the foreign language locales package over to the main stylefile directory, and then rename it to `style.stp`. You must do this copy operation before you create collections.

Indexing is case-sensitive, so the `style.stp` file should include capitalized versions of words in the stop word list in addition to the lower-case version. For example, use `"the"`, `"The"` and `"THE"` if you think all of these would be encountered on a search.

Install Content Search Engine on Windows

Use this procedure to install and configure IBM FileNet P8 Content Search Engine, an optional component based on the Autonomy K2 product.

Install the Autonomy K2 software on each machine in your Content Search Engine configuration. You must complete a K2 Master Administration Server software installation before you can add any additional K2 Administration Server installations. The Master Administration Server's

dashboard is the central control point for configuring all additional Administration Servers that are part of the Content Search Engine configuration.

You must designate each installation as either a Master Administration Server software installation or an Administration Server software installation.

CAUTION Only one K2 Master Administration Server can be installed for each Content Engine Domain.

To install Autonomy K2 on Windows

1. Access the host machine and log on as `k2_os_user`. For details on required accounts and related permissions, see [“Accounts for Content Search Engine” on page 92](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

NOTE Ensure `k2_os_user` has administrator privileges on this machine.

2. Set the `JAVA_HOME` environment variable as follows:

- a. Open the System control panel.
- b. Click the **Advanced** tab.
- c. Click **Environment Variables**.
- d. Click **New** under System Variables.
- e. Set the variable information as follows:

Variable name: `JAVA_HOME`

Variable value: `Java (JDK) install path`

NOTE The installer will not allow you proceed with the installation until the `JAVA_HOME` environment variable is set.

3. Start the Content Search Engine installation, choosing either the interactive or silent steps below, For information on the Content Search Engine parameter values to specify in the installation, see “Installation and Upgrade Worksheet” in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Content Search Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "FileNet P8 Component" column header and select CSE (Windows).
- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header, and select CSE Installer.
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).

- To install interactively:
 - i. Access the IBM FileNet Content Search Engine installation package and execute the P8CSE-4.5.0-WIN.EXE file.
 - ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
JAVA_HOME Not Set	<p>This screen will appear only if you have not set the JAVA_HOME environment variable on the machine.</p> <p>Click Cancel to exit the installation program and set the required environment variable.</p> <p>NOTE The installer will not allow you to continue until you set the environment variable.</p> <p>Click Next to continue.</p>
JAVA_HOME for K2 Server	<p>Enter the path to the supported Java (JDK) installation and click Next to continue.</p>
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement.</p> <p>Click Next to continue.</p>
Specify Content Search Engine Installation Path	<p>Specify the directory in which you want to install Content Search Engine. The installation program will create any specified directories that do not already exist.</p> <p>Click Next to continue.</p>
Select Autonomy K2 Server Type	<p>Choose whether to install a Master Administration Server (required for first-time installation) or an Administration Server.</p> <p>Click Next to continue.</p>
Specify Administration Server Information	<p>This screen will appear only if you selected Administration Server on the Select Autonomy K2 Server Type screen.</p> <p>Enter the host name and port for the Administration Server.</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify Master Administration Server Information	Enter the host name and server port for the Master Administration Server. NOTE If you are installing a K2 Administration Server, the Master Administration Server must already be installed. Click Next to continue.
K2 Operating System User Account	Enter the <i>k2_os_user</i> login information and the name of the Verity domain on which this K2 server communicates with the Content Engine. Click Next to continue.
Review Pre-installation Summary	Verify your component selections, and click Install to start installing software.
Install Complete	Click Done to complete the installation.

- To install silently
 - i. Access the IBM FileNet Content Search Engine installation package and edit the `CSE_silent_install.txt` file to reflect the appropriate responses for your installation.
 - ii. Launch the Content Search Engine installer by executing the following command:

```
P8CSE-4.5.0-WIN.EXE -f CSE_silent_install.txt -i silent
```

NOTE The following two Autonomy K2 services will be installed and started on your machine after the installation is complete:

- Verity K2 6.2.1 Administration Server service.
 - Verity K2 Administration Web Server service (Tomcat server).
4. Review the following Content Search Engine log files for installation errors. The files are located in the verity directory of the install path:
 - `cse_install_path\verity\cse_install_log_4_5_0.txt`
 - `cse_install_path\verity\vconfig.log`
 5. Continue at [“Configure Content Search Engine” on page 460](#).

Install Content Search Engine on UNIX

You must install the K2 Master Administration Server software first. The Master Administration Server’s dashboard is the central control point for configuring Content Search Engine for single-server or multi-server installations.

You must designate each installation as either a Master Administration Server software installation or an Administration Server software installation.

CAUTION Only one K2 Master Administration Server can be installed for each Content Engine domain.

To install Content Search Engine on UNIX

NOTE Most processes for the Autonomy K2 software will run as *k2_os_user*. However, the *vspget* process must run as root. For details on required accounts and related permissions, see “Accounts for Content Search Engine” on page 92 in *Plan and Prepare Your Environment for IBM FileNet P8*.

1. Access the host machine and log on as a user with root privileges.
2. Enter the following commands to set the *vspget* program’s setuid bit such that the service runs as root:

```
chown root /verity install path/k2/_platform/bin/vspget
```

```
chmod u+s /verity install path/k2/_platform/bin/vspget
```

Replace *_platform* with the following directory, according to your environment:

Platform	Directory
HPUX	_hpux
AIX	_rs6k43
Solaris	_ssol26
Linux	_ilnx21

3. Log off the machine.
4. Log on to the machine as *k2_os_user*.
5. Set the following environment variable and place the entry in the *.profile* file for *k2_os_user*.

```
JAVA_HOME=java_(JDK)_install_path/jdkversion
```

```
export JAVA_HOME
```

6. Start the Content Search Engine installation using your Installation and Upgrade Worksheet. For information on the Content Search Engine parameter values, see “Installation and Upgrade Worksheet” in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), perform the following steps to quickly see only the installation properties you must specify for the Content Search Engine installer:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CSE Installer.

- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- To install interactively (X-Terminal must be installed):
 - i. Access the IBM FileNet Content Search Engine installation package and execute the appropriate installation program:

Platform	Command
HPUX	P8CSE-4.5.0-HPUX.BIN
AIX	P8CSE-4.5.0-AIX.BIN
Solaris	P8CSE-4.5.0-SOL.BIN
Linux	P8CSE-4.5.0-LINUX.BIN

- ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
JAVA_HOME Not Set	<p>This screen will appear only if you have not set the JAVA_HOME environment variable on the machine.</p> <p>Click Cancel to exit the installation program and set the required environment variable.</p> <p>NOTE The installer will not allow you to continue until you set the environment variable.</p>
JAVA_HOME for K2 Server	<p>Enter the path to the supported Java (JDK) installation and click Next to continue.</p>
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement.\</p> <p>Click Next to continue.</p>
Specify Content Search Engine Installation Path	<p>Specify the directory in which you want to install Content Search Engine. The installation program will create any specified directories that do not already exist.</p> <p>Click Next to continue.</p>
Select Autonomy K2 Server Type	<p>Choose whether to install a Master Administration Server (required for first-time installation) or an Administration Server.</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify Administration Server Information	This screen will appear only if you selected Administration Server on the Select Autonomy K2 Server Type screen. Enter the host name and server port for the Administration Server. Click Next to continue.
Specify Master Administration Server Information	Enter the host name and server port for the Master Administration Server. NOTE If you are installing a K2 Administration Server, the Master Administration Server must already be installed. Click Next to continue.
K2 Operating System User Account	Enter the <i>k2_os_user</i> log in information and click Next to continue.
Review Pre-installation Summary	Verify your component selections, and click Install to start installing software.
Install Complete	Click Done to complete the installation.

- To install silently
 - i. Access the IBM FileNet Content Search Engine installation package and edit the `CSE_silent_install.txt` file to reflect the appropriate responses for your installation.
 - ii. Execute one of the following commands, based on your operating system:

Platform	Command
HPUX	<code>P8CSE-4.5.0-HPUX.BIN -f CSE_silent_install.txt -i silent</code>
AIX	<code>P8CSE-4.5.0-AIX.BIN -f CSE_silent_install.txt -i silent</code>
Linux	<code>P8CSE-4.5.0-LINUX.BIN -f CSE_silent_install.txt -i silent</code>
Solaris	<code>P8CSE-4.5.0-SOL.BIN -f CSE_silent_install.txt -i silent</code>

NOTE The following two Autonomy K2 services will be installed and started on your machine after the installation is complete:

- Verity K2 6.2.1 Administration Server service.
- Verity K2 Administration Web Server service (Tomcat server).

7. Review the following Content Search Engine log files for installation errors. The files are located in the `verity` directory of the install path:
 - `cse_install_path/verity/cse_install_log_4_5_0.txt`
 - `cse_install_path/verity/vconfig.log`
8. Set the following environment variables and place the entries in the `.profile` file for `k2_os_user`.

HP-UX

```
PATH=$PATH:/verity_install_path/k2/_hpux/bin
export PATH
SHLIB_PATH=$SHLIB_PATH:/verity_install_path/k2/_hpux/bin
export SHLIB_PATH
```

AIX

```
PATH=$PATH:/verity_install_path/k2/_rs6k43/bin
export PATH
LIBPATH=$LIBPATH:/verity_install_path/k2/_rs6k43/bin
export LIBPATH
```

Solaris

```
PATH=$PATH:/verity_install_path/k2/_ssol26/bin
export PATH
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/verity_install_path/k2/_ssol26/bin
export LD_LIBRARY_PATH
```

Linux

```
PATH=$PATH:/verity_install_path/k2/_ilnx21/bin
export PATH
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/verity_install_path/k2/_ilnx21/bin
export LD_LIBRARY_PATH
```

To start or stop the Autonomy K2 Services on UNIX

To manually start or stop the Autonomy K2 services, use the following commands, according to your environment:

HP-UX

Start services:

```
nohup /verity_install_path/k2/_hpux/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_hpux/bin/k2adminstop
```

AIX

Start services:

```
nohup /verity_install_path/k2/_rs6k43/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_rs6k43/bin/k2adminstop
```

Solaris

Start services:

```
nohup /verity_install_path/k2/_ssol26/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_ssol26/bin/k2adminstop
```

Linux

Start services:

```
nohup /verity_install_path/k2/_ilnx21/bin/k2adminstart &
```

Stop services:

```
/verity_install_path/k2/_ilnx21/bin/k2adminstop
```

Configure Content Search Engine

Use this procedure to configure services required on the K2 Master Administration Server, and on additional Administration Servers you may install for IBM FileNet P8 Content Search Engine. All servers are configured through the Master Administration Server Dashboard.

NOTES

- When naming servers you create with this procedure, it is a best practice to indicate the type of server you've created. Otherwise, when you configure Content Engine through the Enterprise Manager, determining which server is which could be confusing. For example, use *server_name_broker* to indicate a Broker Server service.
- Ensure you carefully record the server names, ports and settings that you define. Much of the following information will be required later when you configure the IBM FileNet P8 Content Engine for Content-Based Retrieval later in this guide.
- A range of ports is recommended in the Verity K2 Dashboard for each service you create. You do not have to choose a port number from within that range.
- Repeat the related step in the procedure below to add additional services. Some guidelines must be adhered to when adding additional services:
 - Multiple brokers can be assigned, so that if one goes down the others will be used. However, each broker must have all K2 Servers (search servers) attached that are needed to access collections (index areas). The Content Engine Server will not call multiple brokers and merge the results.

- If you add additional Index Servers and K2 Servers (search servers), they will not be activated until you enable them through Enterprise Manager. See [“Configure Content Engine for content-based retrieval” on page 165](#) for details.
- Each K2 Administration Server must contain a Ticket Server for Content Engine.
- For good stability and performance, Broker Servers must be attached to local Ticket Servers for security on each machine.

To configure Content Search Engine

1. Configure the Autonomy K2 Dashboard to use SSL security. The Autonomy K2 Dashboard web application, by default, uses a non-SSL web site and sends username and password information in plain text. For information on how to modify your Tomcat web applications to use SSL, access the following address:

`http://tomcat.apache.org/tomcat-5.5-doc/ssl-howto.html`

2. Access the K2 Dashboard by launching your browser and entering:

`http://Master Administration Server hostname:9990/verity_dashboard/main.jsp`

Use the appropriate values from your installation and upgrade worksheet for the procedures that follow. For more information, see [“Installation and upgrade worksheet” on page 229](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (p8_worksheet.xls), perform the following steps to quickly see only the required properties:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select "K2 Dashboard".
 - Optional: click the **AutoFilter** drop-down arrow in the "FileNet P8 Component" column header and select "CSE (UNIX)" or "CSE (Windows)", depending on your operating system type.
 - Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
3. Create a K2 Index Server, as follows:
 - a. Click **K2 Index Servers** under System View.
 - b. Click **Add a K2 Index Server** on the K2 Index Server Summary page.
 - c. Enter the following information on the Configure basic settings for the new K2 Index Server page:
 - Service Alias: *K2 Index Server Alias*
 - Port: 9960 - 9979 (suggested range)
 - d. Click **Next** to continue with the installation.

- e. Enter the following information on the Configure threads for the K2 Index Server page:
 - Synchronous Threads: 25
 - Asynchronous Threads: 3
 - Access Type: **Authorized Administrator**
 - f. Click **Finish** to continue with the installation.
4. Set the Index Server logging properties:
 - a. Click the Index Server, Under System View, that you want to adjust.
 - b. Click **Edit Properties** under Actions.
 - c. Click the **Logging** tab.
 - d. For Status Log Nominal Size, enter the following value:
9000 kilobytes
 - e. Click **Modify**.
 5. Create a K2 Broker Server:
 - a. Click **K2 Brokers** under System View.
 - b. Click **Add a K2 Broker** on the K2 Broker Summary page.
 - c. Enter the following information on the Configure basic settings for the new K2 Broker page:
 - Service Alias: *K2 Broker Server Alias*
 - Port: 9900 - 9909 (suggested range)
 - d. Click **Finish**.
 6. Create a K2 Server (search server) and attach the Broker:
 - a. Click **K2 Servers** under System View.
 - b. Click **Add a K2 Server** under Actions on the K2 Server Summary page.
 - c. Enter the following information on the Configure basic settings for the new K2 Server page:
 - Service Alias: *K2 Server (search server) Alias*
 - Port: 9920 - 9949 (suggested range)
 - d. Click **Next**.
 - e. Click **Next** on the *Set security options for this service* page.
 - f. Enter the following information on the Attach to K2 Brokers page:
 - Select the K2 Brokers that will provide access to this service: Select the K2 Broker you created in step 3 from the drop-down menu, *server_name_broker*.
 - g. Click **Finish**.
 7. Import the IBM FileNet Styleset.

- a. Click **Collections** under System View.
- b. Click **Manage Style Sets** under Actions on the Collection Summary page.
- c. Click **Import** on the Manage Style Sets page (top right).
- d. Enter the following information on the Import page:
 - Style Set Alias: `FileNet_FileSystem_PushAPI`
 - Gateway Type: `--Auto-detect--`
 - Source Administration Server. If multiple servers are installed, choose the server to which you will import the Styleset.
 - Source Path:

Windows

`install_path\verity\data\stylesets\FileNet_FileSystem_PushAPI`

UNIX

`install_path/verity/data/stylesets/FileNet_FileSystem_PushAPI`

- e. Click **Import**.

NOTE The K2 Dashboard displays a notification that the StyleSet Editor web application cannot be accessed. This message can be ignored as it relates to a function that is not used by IBM FileNet Content Search Engine.

8. Create a K2 Ticket Server.
 - a. Click **K2 Ticket Servers** under System View.
 - b. Click **Add a K2 Ticket Server** under Actions on the K2 Ticket Server Summary page.
 - c. Enter the following information on the Configure basic settings for the new K2 Ticket Server page:
 - Service Alias: *K2 Ticket Server Alias*
 - Port: 9910 - 9919 (recommended range)
 - d. Click **Next**.
 - e. Enter the following information on the Configure the login module to use with this K2 Ticket Server page:
 - Select which Login Module type to use with this K2 Ticket Server:

NOTE LDAP Ticket Servers are not currently supported.

 - Windows
 - UNIX
 - Default Domain (Windows only): Enter the domain on which this K2 Server is authenticated.
 - f. Click **Next**.

- g. Enter the following information on the Configure the persistent store module to use with this K2 Ticket Server page:
 - Select the Persistent Store Module type to use with this K2 Ticket Server: Choose File and Memory.
 - h. Click **Finish**.
 - i. (Windows only) Specify local login settings:
 - i. Click **Edit Properties**.
 - ii. Click Windows Login Module.
 - iii. Check **Use Local Credentials**.
 - iv. Check Enable Built-in Groups.
 - v. Click **Modify**.
9. Set Autonomy K2 Administration Security.
- a. Click the K2 Ticket Server you created.
 - b. Click **Manage Administration Security** under Actions.
 - c. Enter the following information on the Manage Administration Security page:
 - Select a K2 Ticket Server to configure for administration security: From the drop-down menu, select the K2 Ticket Server you just created.
 - User Name: Enter the *k2_os_user*. For UNIX installs, this is the user you logged in as to run the installation. For details on required accounts and related permissions, see [“Accounts for Content Search Engine” on page 92](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.
 - Password: Enter the authentication password.
 - Default Domain (Windows only): Enter the domain on which this user and K2 Server are authenticated.
 - d. Click **Modify**.
- The K2 software will authenticate the user based on the information you entered. If the check fails, an error message will indicate what failed and request that you re-enter the information.
- If administrator access is successful, Autonomy K2 will close the Dashboard and require that you log on again as the Dashboard Administrator to complete the configuration.
10. Launch the K2 Dashboard and log on.

11. Restart K2 services:

- a. Under *Notifications* on the K2 Dashboard Home page, a number of servers are listed as requiring a restart. Click **Start/Stop this Service** to access the settings page and follow the instructions listed there. You must perform either a **Quick Restart** or a **Full Restart**.
- b. Click Home in the top-left corner of the page after each restart to view the remaining notifications. Repeat the process until there are no notifications remaining.

12. Enable additional K2 Admin Users (optional).

- a. From the K2 Dashboard home page, click **Administration Servers**.
- b. Click **Manage K2 Administrative Users**.
- c. Click **Add User** on the Manage K2 Administrative Users page.
- d. Enter the name of an authenticated user on the directory service that you want to make a K2 Administrator and click **Add**.

13. Enable security on the K2 services you have created.

- a. From the K2 Dashboard home page, click **K2 Ticket Servers**.
- b. Click your ticket server *server_name_ticket_server*.
- c. Click **Manage K2 Broker/K2 Server Security** in the Services Secured by this K2 Ticket Server section of the page (bottom right).
- d. Click the **K2 Servers** button on the Manage K2 Broker/K2 Server Security page.
- e. Click the service you just created which is listed in the window on the right to enable security.

CAUTION If you have a multi-server configuration, numerous services, installed on other machines, will be listed also. Select only the service to which you want to attach a broker. Brokers must be attached to local ticket servers for Content Search Engine.

- f. Click the **K2 Brokers** button on the Manage K2 Broker/K2 Server Security page.
- g. Click the Broker in the window on the right that you want to attach to the local K2 ticket server you selected above.
- h. Click **Modify** to save your changes.

14. Restart K2 services, as follows:

- a. Click **Home** in the top left corner of the page.
- b. Under *Notifications* on the Verity K2 Dashboard Home page, a number of servers are listed as requiring a restart. Click **Start/Stop this Service** to access the settings page and follow the instructions listed there. You must perform either a **Quick Restart** or a **Full Restart**.

Click **Home** in the top left corner of the page after each restart to view the remaining notifications. Repeat the process until there are no notifications remaining.

To configure services on Administration Servers

Use this procedure to create and configure services on specific Content Search Engine machines (Administration Servers), other than the Master Administration Server. Services for all machines in your Content Search Engine configuration are configured through the Master Administration Server Dashboard.

1. Click **Administration Servers** under System View.
2. Click the Administration Server to which you want to add services.
3. Click **Add a Service** under K2 Services on this Administration Server.
4. Select the service you want to add.
5. Follow the instructions and guidelines for the appropriate service in the *To configure Content Search Engine* procedure above to complete the service addition.

Configure Autonomy K2 to upgrade 3.5.x indexes

To create a collections directory

For performance reasons, it is recommended that you create one collections directory for each index area you create in IBM FileNet P8 Content Engine. Each collections directory you create must be set to provide proper security access. The path to both the collections directory and collections temp directory must be entered in the index area properties when you create them.

Security and communication between Autonomy K2, Content Engine, and the collections directory is handled through the user accounts and permissions provided to those accounts. For details on required accounts and related permissions, see [“Accounts for Content Search Engine” on page 92](#) and the related worksheet. For detailed information on security, see the IBM FileNet P8 help topic [FileNet P8 Administration > Enterprise-wide Administration > FileNet P8 Security > Authorization > Security for integrated components and third-party products > Autonomy K2 Server > Security for Autonomy K2 Server](#).

Collections directory requirements for Content Search Engine

CAUTION Contrary to information outlined in the Autonomy-supplied documentation set, remote collections are not supported for use with IBM FileNet Content Search Engine. Collections must be written locally to the Autonomy K2 server. Using a remote-mounted disk that is accessed via the network (NFS, PCNFS, or CIFS) will cause stability problems under load and corrupt your collections. Any existing configurations that contain non-local collections directories must be re-configured.

To create a collections directory

1. Create a directory in which you will store collections (VerityIndexArea.RootDirectoryPath). This directory must be located on a disk that is local to the Verity server. Set permissions to allow access to the `k2_os_user`.

NOTE This path must be local to the index server that will be assigned to write collections.

2. Create a temp directory (VerityIndexArea.TempDirectoryPath) which will be used by the K2 Index Server and Content Engine Server during operations.

NOTE This path must be visible to both the Content Engine and the Autonomy K2 servers. This means that if the K2 Administration Server and Content Engine are not installed on the same machine, they both must be on a network mounted file system.

3. Provide read/write access to the collections directory for Autonomy K2 by entering the full path to the location and record the temp collections path.

Windows

- a. Open the following K2 configuration file in a text editor (default path shown):

```
C:\Program Files\filenet\contentengine\verity\k2\common\verity.cfg
```

- b. Modify the next available alias settings by adding the collections path, where new collections will be written. For example, change alias6, mapping6, and dirmode6 to the following:

```
alias6=path1
mapping6=C:\Collections_Directory
dirmode6=wr
```

- c. Modify the next available alias settings by adding an entry for each 3.5.x collections path, expressed as UNC, that you want to upgrade. For example, change alias7, mapping7, and dirmode7 to the following:

```
alias7=path2
mapping7=\\CE35_File_storage_share\FS_object_store\index\fs0
dirmode7=wr
```

Your 3.5.x collections path might point to a file store index or a database index in the object store *FS_object_store*. If you have additional file store indexes or database indexes, you will add similar entries for alias8, mapping8, and dirmode8, alias 9, mapping9, and dirmode9, and so on.

UNIX

- a. Open the following K2 configuration file in a text editor (default path shown):

```
/opt/verity/k2/common/verity.cfg
```

- b. Modify the next available alias settings by adding the collections path. For example, change alias6, mapping6, and dirmode6 to the following:

```
alias6=path1
mapping6=/Collections_Directory_Path
dirmode6=wr
```

NOTE The *Collections_Directory_Path* must be a local path and not a mount point.

4. Set file store access. Each file store that will be full text indexed must be accessible by the Autonomy K2 server that will perform the full text indexing. Permissions on the file store must be set the same as the permissions on the collections directories, allowing both the Content Engine

Operating System User and the Verity Operating System User to access them. The names of the file store directories must also be the same on each server that access the directories.

NOTE Although we are mapping remote collections, which are not supported, indexing will not be run on these indexes. The mapping is used to close the collections.

Windows-specific options

You can configure a read-only Autonomy K2 Administration server which will remotely read collections (note that you cannot have a second K2 Administration server that writes the collections). To do this, you must map a drive on the read-only Administration server to the file system on the Autonomy K2 machine that writes collections.

To do this, share the Autonomy K2 machine's collections drive (for example, D:\) as some name other than D\$, because you can't set permissions on D\$. For example, set it as DDrive.

Map the D:\ drive on the read-only Autonomy K2 machine to \\servername\DDrive.

Now D:\collections on the read-only Autonomy K2 machine references the same file system as the D:\ drive on the Autonomy K2 machine that writes the collections.

By default, the k2admin.exe program on the read-only Autonomy K2 machine runs as a Windows service. This is a problem because Windows services can not mount mapped drives.

One solution to this problem is to run the k2admin.exe program from a command line instead, so that it doesn't run as a Windows service. To launch the service manually from a command line on a default installation, execute the following command:

```
C:\Program Files\verity\k2_61\k2\_nti40\bin\k2admin.exe" -cfg "C:\Program Files\verity\k2_61\k2\common\verity.cfg
```

NOTE Only the Verity K2 6.1.1 Administration Server service (k2admin.exe) must be started this way. The Verity Administration Web Server may be left as a Windows service.

Another solution is to use a tool like the svrany.exe program (supplied as part of the Windows Resource kit) to run a .cmd file that first maps the drives, and then issues the command above to start the k2admin.exe service. The command to map drives, using the above example, is:

```
net use D: \\servername\DDrive
```

There are also third-party products available that function the same as the svrany.exe program.

Although the svrany.exe program will start the service correctly, it cannot stop the service. You must use the Autonomy rcadmin command line tool to stop the service, or use Task Manager and stop all the processes that start with the prefix k2.

To use the Autonomy rcadmin program from a command line:

1. Access a command line and type the following command:

```
rcadmin
```

2. Enter the following command to log on:

```
login k2_os_user
```

3. Enter the following command to initiate the shutdown:

```
adminsignal
```

4. Enter one of the following responses to the Type of Signal query:
 - 2 - Shutdown
 - 3 - WS Refresh
 - 4 - Restart all servers

Completing the upgrade

The remaining steps required to complete an upgrade of Content Search Engine must be completed as part of the overall Content Engine upgrade and are outlined at the appropriate locations later in this guide.

Task 16b: Upgrade Content Search Engine software from 4.0.x

This task describes how to upgrade the IBM FileNet Content Search Engine software and related data from 4.0.x to 4.5.x.

If you used the full-text search feature (CBR) in 4.0.x, to upgrade you must export your current K2 server configurations on each machine, uninstall Autonomy K2, install the new version of Content Search Engine (Autonomy K2) software and then import your saved configuration.

Production environment upgrades

Upgrading of Content Search Engine and related Content Engine data must occur as an in-place upgrade. As such, the data is migrated to 4.5.x and is no longer usable in the previous version of the P8 Platform.

The 4.0.x index areas are upgraded at the same time as the Content Engine data is upgraded, through the Content Engine upgrader tool.

To perform an upgrade in a migration scenario, create a duplicate of your P8 system by performing a backup and then a restore. Using the restored system, complete the migration from 4.0.x to 4.5.x. This will leave the original production environment untouched while testing is performed on the new system.

When you're ready to migrate the production environment to the current version, back up the system and then perform the in-place upgrade process on the production environment.

Content Search Engine Upgrade

To upgrade Autonomy K2 Server software on Windows

To upgrade Content Search Engine, perform the following upgrade procedure on all machines running Autonomy K2 software. Upgrade the K2 Master Administration Server first, before upgrading the K2 Administration Servers.

NOTE If you have a multi-server configuration, do not start any K2 services until after all machines have been upgraded.

1. Access the Autonomy K2 machine and log on as *k2_os_user*.
2. Access Windows Component Services and stop the two Verity K2 services.
3. Copy the IBM FileNet Content Search Engine installation package to the Autonomy K2 machine.
4. (Master Administration Server only) Open a command window and change directory to the location of the IBM FileNet Content Search Engine installation package. Execute the following command:

```
backup_k2.bat "verity_install_path" "temporary_location_path"
```

Replace "verity_install_path" with the path to the verity folder in the current installation path.

Replace "*temporary_location_path*" with the location in which you want to temporarily back up your Autonomy K2 configuration files, outside of the current installation path. Files from this backup will be used to restore your existing configuration after you complete the software upgrade.

For example: `backup k2.bat "C:\Program Files\FileNet\contentengine\verity" "C:\temp"`

5. Access the Windows control panel and run, in reverse order of installation, the uninstall for each Autonomy-related entry that is listed in the Add or Remove Programs control panel. Ensure each has been executed before continuing.

CAUTION Order of uninstall is crucial. Some of the entries do not contain any obvious version identification and you must click the **Change/Remove** button and wait for the Autonomy uninstaller to launch in order to identify the version number.

NOTE This will remove only the added Patch, Service Pack and Fix Pack updates and will not uninstall the base IBM FileNet Content Search Engine software.

6. Complete the manual uninstall procedure for IBM FileNet Content Search Engine 4.0.x as follows:

- a. Remove the K2 Dashboard service:

- i. From a command window, access the following directory:

```
C:\Program Files\FileNet\ContentEngine\verity\appserver\bin
```

- ii. Enter the following command:

```
service remove k2
```

- b. Remove the Autonomy K2 installation:

- i. From a command window, access the following directory:

```
C:\Program Files\FileNet\ContentEngine\Verity
```

- ii. Enter the following command:

```
k2\_nti40\bin\vconfig -cfg "C:\Program Files\filenet\contentengine\verity\config.vcnf" -dir "C:\Program Files\filenet\contentengine\verity" -verbose -log log.txt -uninstall
```

The Autonomy K2 Administration Server service and Tomcat application server will be uninstalled at the completion of the vconfig command.

7. If collections are stored anywhere in the installation path, move the *collections directory* and the *temp directory* to a temporary location outside the installation path.
8. Delete the Autonomy K2 software installation directory.

9. Access the IBM FileNet Content Search Engine installation package and Install the Content Search Engine software, using the appropriate values from your worksheet:

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (p8_worksheet.xls), perform the following steps to quickly see only the installation properties you must specify for the Content Search Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE installer.
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the **AutoFilter** drop-down arrow in all other column headers and select (All).
- To install interactively:
 - i. Access the IBM FileNet Content Search Engine installation package and execute the P8CSE-4.5.0-WIN.EXE file.
 - ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
JAVA_HOME Not Set	<p>This screen will appear only if you have not set the JAVA_HOME environment variable on the machine.</p> <p>Click Cancel to exit the installation program and set the required environment variable.</p> <p>NOTE The installer will not allow you to continue until you set the environment variable.</p>
JAVA_HOME for K2 Server	<p>Enter the path to the supported Java (JDK) installation and click Next to continue.</p>
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement.</p> <p>Click Next to continue.</p>
Specify Content Search Engine Installation Path	<p>Specify the directory in which you want to install Content Search Engine. The installation program will create any specified directories that do not already exist.</p> <p>Click Next to continue.</p>
Select Autonomy K2 Server Type	<p>Choose whether to install a Master Administration Server (required for first-time installation) or an Administration Server.</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify Administration Server Information	<p>This screen will appear only if you selected Administration Server on the Select Autonomy K2 Server Type screen.</p> <p>Enter the host name and server port for the Administration Server.</p> <p>Click Next to continue.</p>
Specify Master Administration Server Information	<p>Enter the host name and server port for the Master Administration Server.</p> <p>NOTE If you are installing a K2 Administration Server, the Master Administration Server must already be installed.</p> <p>Click Next to continue.</p>
K2 Operating System User Account	<p>Enter the <i>k2_os_user</i> log in information and the name of the domain on which this K2 server communicates with the Content Engine.</p> <p>Click Next to continue.</p>
Review Pre-installation Summary	<p>Verify your component selections, and click Install to start installing software.</p>
Install Complete	<p>Click Done to complete the installation.</p>

- Silently
 - i. Access the IBM FileNet Content Search Engine installation package and edit the `CSE_silent_install.txt` file to reflect the appropriate responses for your installation. Refer to your installation worksheet.
 - ii. Launch the Autonomy K2 Master Administration server installer by executing the following command:

```
P8CSE-4.5.0-WIN.EXE -f CSE_silent_install.txt -i silent
```

CAUTION Ensure you install to the same path as your previous installation.

10. Review the following Content Search Engine log files for installation errors. The files are located in the `verity` directory of the install path:

- `cse_install_path\verity\cse_install_log_4_5_0.txt`
- `cse_install_path\verity\vconfig.log`

11. Access Windows Component Services and stop the two running Verity K2 services.

12. (Master Administration Server only) Open a command window and change directory to the location of the IBM FileNet Content Search Engine installation package. Execute the following command:

```
restore_k2.bat "temporary_location_path" "verity_install_path"
```

Replace "*temporary_location-path*" with the temporary path you entered earlier in this procedure when you ran `backup k2.bat`.

Replace "*verity_install_path*" with the path to the verity folder in the Autonomy K2 installation path. This action will restore your configuration from the backup files.

For example:

```
restore k2.bat "C:\temp" "C:\Program Files\FileNet\contentengine\verity"
```

13. If you moved collections in step 6 above, restore your *collections directory* and *temp directory* to their original locations.
14. For a single-machine configuration, Access Windows Component Services and start the two K2 services. For multi-machine configurations, don't start the services until all machines have been upgraded.
15. Access the K2 Dashboard and verify that the services from your previous installation are restored and running. For Master Administration Servers, delete the temporary directory of the backup you ran earlier ("*temporary_location_path*").

To upgrade Autonomy K2 Server software on UNIX

To upgrade Content Search Engine, perform the following upgrade procedure on all machines running Autonomy K2 software. Upgrade the K2 Master Administration Server first, before upgrading the K2 Administration Servers.

NOTE If you have a multi-server configuration, do not start any K2 services until after all machines have been upgraded.

1. Access the Autonomy K2 machine and log on as *k2_os_user*.
2. Stop the Autonomy K2 Administration Server service and the Tomcat application server. Use the following command, according to your environment:

HP-UX

```
/verity_install_directory/k2/_hpux/bin/k2adminstop
```

AIX

```
/verity_install_directory/k2/_rs6k43/bin/k2adminstop
```

Solaris

```
/verity_install_directory/k2/_ssol26/bin/k2adminstop
```

Linux

```
/verity_install_directory/k2/_ilnx21/bin/k2adminstop
```

3. Copy the IBM FileNet Content Search Engine installation package to the machine.

4. (Master Administration Server only) Change directory to the location of the IBM FileNet Content Search Engine installation package. Execute the following command:

```
backup_k2.sh "verity install path" "temporary location path"
```

Replace `"verity_install_path"` with the path to the verity folder in the current installation path.

Replace `"temporary_location_path"` with the location in which you want to temporarily back up your Autonomy K2 configuration files, outside of the current installation path. Files from this backup will be used to restore your existing configuration after you complete the software upgrade.

For example, `backup_k2.sh "/opt/verity" "/opt/temp"`.

5. Uninstall all Autonomy K2 Service Packs and Fix Packs.

a. Change directory to `verity install path/verity/patches`.

b. Execute the patch uninstaller.

- CLI

Execute the following command:

```
./K2TK_patchUninstall.bin -console
```

- Interactively (X terminal must be installed)

Launch the `K2TK_patchUninstall.bin` file and complete the uninstall screens.

NOTE This will remove only the added Patch, Service Pack and Fix Pack updates and will not uninstall the base IBM FileNet Content Search Engine software.

6. Complete the manual uninstall procedure for IBM FileNet Content Search Engine 4.0.x as follows:

a. Access the following folder:

```
verity_install_path/verity/
```

b. Enter the following command (default install path shown):

```
k2/platform/bin/vconfig -cfg "/opt/verity/config.vcnf" -dir "/opt/verity" -verbose -log log.txt -uninstall
```

Substitute one of the following for *platform*:

- `_ssol26` (Solaris 8.0, 9.0 or 10.0)
- `_hpux` (HP-UX 11i with -AA compiler flag)
- `_rs6k43` (AIX 5.2 and 5.3)
- `_ilnx21` (Red Hat Advanced Server 3.0 and 4.0, SUSE 8 and 9)

The Autonomy K2 Administration Server service and Tomcat will be uninstalled at the completion of the `vconfig` command.

7. If collections are stored anywhere in the installation path, move the *collections directory* and the *temp directory* to a temporary location outside the installation path.
8. Delete the install directory.
9. If *k2_os_user* does not have root privileges, log the user off the machine and then log on as a user with root privileges.
10. Enter the following commands to set the *vspget* program's setuid bit such that the service runs as root:

NOTE Most processes for the Autonomy K2 software will run as *k2_os_user*. However, the *vspget* process must run as root. For details on required accounts and related permissions, see [“Accounts for Content Search Engine” on page 92](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

```
chown root /verity install path/k2/_platform/bin/vspget
chmod u+s /verity install path/k2/_platform/bin/vspget
```

Replace *_platform* with the following directory, according to your environment:

Platform	Directory
HPUX	_hpux
AIX	_rs6k43
Solaris	_ssol26
Linux	_ilnx21

11. If necessary, log the user off the machine and log on again as *k2_os_user* to complete the installation.
12. Access the IBM FileNet Content Search Engine installation package and Install the Content Search Engine software, using the appropriate values from your worksheet:

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (*p8_worksheet.xls*), perform the following steps to quickly see only the installation properties you must specify for the Content Search Engine installer:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the **AutoFilter** drop-down arrow in all other column headers and select (All).

- To install interactively (X-Terminal must be installed)
 - i. Access the IBM FileNet Content Search Engine installation package and execute the appropriate installation program:

Platform	Command
AIX	P8CSE-4.5.0-AIX.BIN
HPUX	P8CSE-4.5.0-HPUX.BIN
Linux	P8CSE-4.5.0-LINUX.BIN
Solaris	P8CSE-4.5.0-SOL.BIN

- ii. Complete the installation program wizard using the following table:

In this screen...	Perform this action...
JAVA_HOME Not Set	<p>This screen will appear only if you have not set the JAVA_HOME environment variable on the machine.</p> <p>Click Cancel to exit the installation program and set the required environment variable.</p> <p>NOTE The installer will not allow you to continue until you set the environment variable.</p>
JAVA_HOME for K2 Server	<p>Enter the path to the supported Java (JDK) installation and click Next to continue.</p>
Welcome	<p>Click Next to proceed with the installation.</p> <p>NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.</p>
Software License Agreement	<p>Review and accept the license agreement.</p> <p>Click Next to continue.</p>
Specify Content Search Engine Installation Path	<p>Specify the directory where you want to install Content Search Engine. The installation program will create any specified directories that do not already exist.</p> <p>Click Next to continue.</p>
Select Autonomy K2 Server Type	<p>Choose whether to install a Master Administration Server (required for first-time installation) or an Administration Server.</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify Administration Server Information	This screen will appear only if you selected Administration Server on the Select Autonomy K2 Server Type screen. Enter the host name and server port for the Administration Server. Click Next to continue.
Specify Master Administration Server Information	Enter the host name and server port for the Master Administration Server. NOTE If you are installing a K2 Administration Server, the Master Administration Server must already be installed. Click Next to continue.
K2 Operating System User Account	Enter the <i>k2_os_user</i> log in information and click Next to continue.
Review Pre-installation Summary	Verify your component selections, and click Install to start installing software.
Install Complete	Click Done to complete the installation.

- Silently
 - i. Access the IBM FileNet Content Search Engine installation package and edit `CSE_silent_install.txt` to reflect the appropriate responses for your installation. Refer to your installation worksheet.
 - ii. Execute the following command:


```
./P8CSE-4.5.0-UNIX_type.BIN -f CSE_silent_install.txt -i silent
```

CAUTION Ensure you install to the same path as your previous installation.

13. Review the following Content Search Engine log files for installation errors. The files are located in the `verity` directory of the install path:
 - `cse_install_path/verity/cse_install_log_4_5_0.txt`
 - `cse_install_path/verity/vconfig.log`
14. Stop the Verity K2 Administration Server service and the Tomcat service which were automatically started by the installer. See step 2 above for instructions.
15. (Master Administration Server only) Change directory to the location of the IBM FileNet Content Search Engine installation package. Execute the following command:


```
restore_k2.sh "temporary_location_path" "verity_install_path"
```

Replace "*temporary_location_path*" with the temporary path you entered earlier in this procedure when you ran the `backup k2.sh` file.

Replace "*verity_install_path*" with the path to the verity folder in the Autonomy K2 installation path. This action will restore your configuration from the backup files.

For example, restore `k2.bat` `"/opt/temp"` `"/opt/verity"`.

16. If you moved collections in step 6 above, restore your *collections directory* and *temp directory* to their original locations.
17. For a single-machine configuration, start the K2 services. For multi-machine configurations, don't start the services until all machines have been upgraded.

To start the Verity K2 Administration Server service and the Tomcat service, use the following commands, according to your environment:

HP-UX

```
/verity_install_directory/k2/_hpux/bin/k2adminstart
```

AIX

```
/verity_install_directory/k2/_rs6k43/bin/k2adminstart
```

Solaris

```
/verity_install_directory/k2/_ssol26/bin/k2adminstart
```

Linux

```
/verity_install_directory/k2/_ilnx21/bin/k2adminstart
```

18. Access the K2 Dashboard and verify that the services from your previous installation are restored and running. Delete the temporary directory of the backup you ran earlier ("*temporary_location_path*").

NOTE The upgrade of Content Search Engine must be completed as part of the overall Content Engine upgrade. The steps are outlined at the appropriate locations later in this guide.

To complete the upgrade, you will enter Autonomy K2 Master Administration Server configuration and collections path details into the upgrader tool during the Content Engine upgrade.

Once the Content Engine upgrader tool has been run, the upgrade of Content Search Engine is complete.

Task 17: Upgrade Content Engine data

Upgrading Content Engine data from version 3.5.x or 4.0.x to 4.5 involves the following major steps (detailed later in this task topic), to be done in the order shown:

1. If you did not install Content Engine Upgrader when you upgraded the Content Engine software, install the Upgrader tool now. Run the Content Engine installer on a Windows machine, and select the **Tools** option in the Choose Components screen.

For more information on running the Content Engine installer, review the following procedures:

- [“To install or upgrade Content Engine” on page 333](#), for upgrades from 3.5.x
- [“To upgrade Content Engine software from 4.0.x” on page 337](#)

2. Upgrade Content Engine data.

- a. If you will run the Content Engine Upgrader tool on a computer that does not have Content Engine installed, copy the JDBC drivers for your database to the computer where the Upgrader tool is installed. See [“To install the JDBC drivers” on page 481](#).
- b. Edit the Upgrader tool utility file `CE450Upgrader.bat`. See [“To edit the upgrader utility file” on page 481](#).
- c. Run the Upgrader tool from a command line or a graphical interface to upgrade Content Engine 3.5.x or 4.0.x items (including the GCD, object stores, file storage areas, etc.) to version 4.5.

Even if you plan to run the Upgrader tool using the graphical user interface method, it is helpful to first read the command line interface method. Both methods involve the same basic steps:

- i. Create an XML upgrade status file.
- ii. Run the Upgrader tool, driving it from the XML upgrade status file.

See [“Command-line interface to the Upgrader tool” on page 489](#) or [“Graphical user interface to the Upgrader tool” on page 483](#).

3. (Upgrades from 3.5.x only) Complete post-upgrade Content Engine configuration.
 - a. Clear the read-only attribute for NTFS file storage areas.
 - b. (Optional) Move file storage areas and Content Search areas (collections) from Windows machines to UNIX machines.

NOTES

- You do not need to check in checked-out documents before running the Upgrader tool.
- The Upgrader tool must run on a Windows machine with at least 1.5 GB of available memory (as indicated by Windows Task Manager).
- If the maximum heap size of the JVM is 1 GB or more, do not run the Upgrader tool on the same machine where any other major application is running (such as the database used by Content Engine) unless the machine has at least 2 GB of RAM.

- To upgrade Content Engine 3.5.x or 4.0.x data—object stores, addons, file stores, fixed content devices (FCDs), etc.—to version 4.5, you will use the Upgrader tool, which you can run interactively, via a graphical user interface (GUI), or silently, via a command line interface (CLI). You can also switch between the two methods during the upgrade.
- If you are upgrading an IBM FileNet P8 environment containing a large number of object stores, use the following approach:
 - When using the Upgrader tool, upgrade at most 20 object stores at a time.
 - If the application server where version 4.5 of Content Engine is deployed is running on a 32-bit JVM, you should restrict each 4.5 FileNet P8 domain to no more than 50 object stores. If the 3.5.x or 4.0.x FileNet P8 domains contain more than 50 object stores, consider partitioning them into multiple 4.5 FileNet P8 domains during the upgrade process.
 - Ensure that 3.5.x and 4.0.x object stores having the same basic set of system objects (for file stores, fixed file stores, etc.) are upgraded into the same 4.5 FileNet P8 domain.
- Be aware that the time to upgrade object stores from version 3.5.x depends on the number of documents they contain, the database type, and the resources of the machine on which the database system runs. If you are upgrading version 3.5.x object stores that contain more than a million documents or a million custom objects, the Upgrader tool can take more than an hour to complete the upgrade.
- For non-English support relating to collections, refer to *IBM FileNet P8 Platform Installing Non-English Environments Technical Notice*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

To install the JDBC drivers

Perform this procedure only if you have installed the Upgrader tool on a computer that does not have Content Engine installed. For example, if you are upgrading a UNIX system, you must run the Upgrader tool on a Windows system to upgrade the Content Engine data. You can install the Upgrader tool on Windows without installing all of the Content Engine components.

1. Refer to the *IBM FileNet P8 Hardware and Software Requirements* for information on the JDBC driver file for the database type that you need for the GCD or object stores you will be upgrading. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).
2. Depending on your database types, copy the appropriate JDBC driver file to a directory on the system that has the Upgrader tool installed. For example, copy the file to the `C:\jars` directory.

CAUTION Do not copy the file to the `...WebSphere\AppServer\lib\ext` directory.

To edit the upgrader utility file

1. Edit the `ce_install_path/tools/upgrade/CE450Upgrader.bat` file to increase the minimum and maximum JVM heap sizes. The recommended minimum and maximum JVM heap sizes (`-Xms` and `-Xmx`) are 512 MB and 1024 MB. If you are upgrading a system that has only a few object stores that do not have many custom objects, you can skip this step and use

the default settings for the minimum and maximum heap size arguments in these commands (256 MB and 512 MB, respectively).

To increase the minimum and maximum JVM heap sizes, make one of the following edits:

Command line interface (CLI)

Change the line immediately after `CLI:` to the following (without carriage returns):

```
java -Xms512m -Xmx1024m -cp "%CLASSPATH%" %JAVA_OPTIONS% -Dwasp.location=".\\wasp"  
com.filenet.upgrader.ui.UpgradeUtility %*
```

Graphical user interface (GUI)

Change the line immediately after `GUI:` to the following (without carriage returns):

```
java -Xms512m -Xmx1024m -cp "%CLASSPATH%" %JAVA_OPTIONS% -Dwasp.location=".\\wasp"  
com.filenet.upgrader.ui.MainFrame
```

2. Edit the `ce_install_path/tools/upgrade/CE450Upgrader.bat` file to specify the database JDBC driver file settings.
 - a. Uncomment the `set JDBCSPATH` command for your database type by removing `rem` from the beginning of the statement line.
 - b. Change `YOURDRIVERPATH` to the full path where you installed the appropriate JDBC driver in the procedure [“To install the JDBC drivers” on page 481](#). For example, if `YOURDRIVERPATH` is `C:/jars`, use one of the following commands:

DB2 for Windows, Linux, or UNIX

```
set JDBCSPATH=c:/jars/db2jcc.jar;c:/jars/db2jcc_license_cu.jar
```

DB2 for z/OS

```
set JDBCSPATH=c:/jars/db2jcc.jar;c:/jars/db2jcc_license_cu.jar;c:/jars/  
db2jcc_license_cisuz.jar
```

Oracle

```
set JDBCSPATH=c:/jars/ojdbc14.jar
```

SQL Server

```
set JDBCSPATH=c:/jars/sqljdbc.jar
```

3. Continue at one of the following:
 - [“Graphical user interface to the Upgrader tool” on page 483](#)
 - [“Command-line interface to the Upgrader tool” on page 489](#)

Graphical user interface to the Upgrader tool

The GUI version of the Upgrader tool follows the same task sequence as the command-line interface (CLI) version described later in this task topic, but provides an interactive interface, in which each step is tied to the next, and in which you can check the accuracy of configuration parameters before attempting the actual upgrade.

To run the Upgrader tool

1. Log on to the machine where the Upgrader tool is installed as `ce_upgrader_tool_user`. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Double-click the icon for `CE450Upgrader.bat` to start the Upgrader tool.

The first time you run the Upgrader tool, it displays the screen that prompts you for the upgrade type (from Content Engine 3.5.2 or 4.0.1). On subsequent starts, the tool displays the last screen that you were using. Refer to your installation worksheet for the values for your site. For information, see “installation and upgrade worksheet” in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the CE Upgrader:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select "CE Upgrader."
- Click the AutoFilter drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade".
- Click the AutoFilter drop-down arrow in all the other column headers and select (All).

To create a new XML upgrade status file

1. Select the Upgrade type.
2. If you are upgrading from Content Engine 3.5.x, enter the full path to the GCD file `sysinit.dat`. The default version 3.5.x location is `ce_install_path\sysconfig\sysinit`. If needed, click **Browse** to locate the file.
3. Enter the XML Upgrade Status File full path and file name. If needed, click **Browse** to select the location.
4. Click **Begin**.

The XML upgrade status file is created in the location you specified, and the Provide Content Engine Authentication Information screen is displayed.

To configure authentication, FCD, and object store parameters

1. Specify the Content Engine authentication information:

- a. In the Specify Content Engine Authentication Information screen, specify the following values:
 - GCD Administrator user name
 - GCD Administrator password
 - Version 4.5 FileNet P8 domain name
 - Server URL. The default is `http://server_name:port_number/wsi/FNCEWS40DIME`.
- b. Click **Test** to verify the authentication information. A confirmation message is displayed. Perform one of the following:
 - If the Upgrader tool can connect using the values you supplied, a success message is displayed. Click **OK** to close the message box.
 - If the connection validation fails, an error message is displayed. Click **OK** to close the message box, and then edit the field values to correct the problem. Repeat [Step b](#) until the validation test passes.
- c. Click **Next**.

The Upgrader screen is displayed, with the Upgrade tab selected. The Upgrade tree in the left pane lists the items selected for upgrade. The status of each item is indicated with a colored ball. The Upgrade key legend at the bottom of the left pane shows the possible status states: Needs Info, Ready, Processing, Done, Failed, or Unsupported. You must supply data for each item that is in  Needs Info state before the upgrade can complete.

2. Specify the property values for any fixed content devices that are in Needs Info state.
 - a. In the Upgrader Tree pane, expand **Upgradeltems > CommonGCD > Fixed Content Devices**. Click the **device name** to select a fixed content device that is in Needs Info state. The properties and values for the FCD are displayed in the right pane in the FCS Settings tab.
 - b. Enter the values for the FCD settings properties. Values with an * (asterisk) are required values.

NOTES

- (CFS-IS) Leave the value of the CSMCache parameter blank. You can specify a value after the upgrade completes.

For descriptions of these parameters, refer to IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > FileNet P8 Domain > How to... > View/modify P8 domain properties > Fixed Content Devices \(General tab\)](#).

- For SnapLock Fixed Devices where CE 4.5 is on UNIX, ensure you have prepared the UNIX NFS mount to the SnapLock device as instructed in [“Configure storage devices for upgrades from 3.5.x” on page 424](#). The SnapLock share must be an NTFS share, must be mountable as an NFS device, requires proper user mapping. The Root Directory Path, SnapLock User Name, and Device Root Directory must reference UNIX information.
- For Centera devices and where CE 4.5 is installed on a UNIX Server, ensure that new Centera shared libraries have been properly installed on the CE 4.5 server as instructed in [“Install or update ECM Centera SDK library files” on page 416](#).

- c. Click **Save**.
 - d. Repeat [Step a](#) through [Step c](#) for each fixed content devices that is in Needs Info state.
3. Specify the property values for any object stores that are in Needs Info state.

- a. In the Upgrader Tree pane, expand **Upgradeltems > Object Stores**. Click the **object store name** to select an item that is in Needs Info state.

Each object store may have one or more items in Needs Info state. You must supply the required values for the Database, GCDOjectStore, P8CoreObjectStoreAddons, FileStores, FixedFileStores, and DBStorageArea as needed for each object store. FileStores, FixedFileStores, and DBStorageArea are displayed only for object stores that have these features enabled. If the object store has CBR (Content Based Retrieval) enabled, then selecting the DBStorageArea node presents a panel for entering CBR information.

- b. Specify the database properties for the selected object store.
 - i. Click **Database**. The Database Settings tab opens in the right pane.
 - ii. Specify the following values:
 - Database user name
 - Database password
 - Database type
 - Database class
 - Database URL

The following table shows examples of URLs for each database type:

Database Type	URL
DB2	<code>jdbc:db2://db_hostname:port/database_name</code> The default port is 50000.
MS SQL Server	<code>jdbc:sqlserver://db_hostname:port</code> The default port is 1433.
Oracle	<code>jdbc:oracle:thin:@db_hostname:port:Oracle_instance_SID</code> The default port is 1521.

- iii. Click **Test** to verify the connection to the database. A confirmation message is displayed. Perform one of the following:
 - If the Upgrader tool can connect using the values you supplied, a success message is displayed. Click **OK** to close the message box.

- If the connection validation fails, an error message is displayed. Click **OK** to close the message box, check that Content Engine is running, and then edit the field values to correct the problem. Repeat [Step iii](#) until the validation test passes.
- c. Specify the Java Naming and Directory Interface (JNDI) properties for the selected object store. Click **GCDOjectStore** to enter the Java naming and Directory Interface (JNDI) properties for the selected object store. Specify the following values:
 - Local JNDI name (the non-XA value)
 - Global JNDI name (the XA value)
 - d. Specify the File store settings for the selected object store. Click **FileStores** to expand the list of file stores.
 - i. Click the **name** of a file store that is in Needs Info state. The File Store Path tab opens in the right pane.
 - ii. Set the Root path to its UNIX equivalent. For example, */opt/CE_35_filestore_mount/FS_One.*
 - iii. Click **Save** if you made any changes.
 - iv. Repeat [Step i](#) through [Step iii](#) for each file store.
 - e. Specify the DBStorageArea content-based retrieval properties for the selected object store.
 - i. Click **DBStorageArea**. The Autonomy K2 tab opens in the right pane.
 - ii. Specify the following values:
 - K2 security user
 - K2 security user password
 - Style set alias
 - Index server names
 - K2 brokers
 - User domain
 - User group
 - Server host name for the K2 master administration server
 - Server port for the K2 master administration server
 - K2 server names

NOTE To specify multiple Index Server names, K2 Broker Server names, or K2 Server names, press **Enter** after typing each value to bring the cursor to a new line. Do not use any other delimiters (such as commas or spaces) to separate your values.

- iii. Click **Test** to verify the connection to the K2 server. A confirmation message is displayed. Perform one of the following:
 - If the Upgrader tool can connect using the path you supplied, a success message is displayed. Click **OK** to close the message box.
 - If the connection validation fails, an error message is displayed. Click **OK** to close the message box, and then edit the field values to correct the problem. Repeat [Step iii](#) until the validation test passes.
- f. If an object store is not yet ready to upgrade, clear the check box for that object store. The selected object store must be in Ready state to be upgraded.
- g. Take all object stores selected to upgrade offline. In the right pane, select the **Description/Online/Offline** tab, and click **Take Offline**.
- h. Repeat [Step 3](#) as needed until all desired object stores are either in Ready state or disabled for the upgrade.

Perform the upgrade

For an item to be qualified for upgrading, two conditions must be met:

- The check box for the corresponding node in the Upgrade Tree pane must be selected.
- The item must be in Ready state.

Each selected check box maps to a yes value of `SelectedForUpgrade` within the XML upgrade status file for the corresponding item.

When you click **Start** to initiate an upgrade, the icon next to each item in the Upgrade Tree pane changes color as its state changes. The color code for these states is indicated in the Upgrade Key at the bottom of the Upgrade Tree pane. The icon for any item whose upgrade fails turns red.

As the item upgrade proceeds, its corresponding Status value in the XML upgrade status file changes to reflect the current state of the upgrade. The contents of the Log pane also show how the upgrade progresses.

If you click **Stop**, the upgrade will stop after completing the current step for the item being upgraded. If an error happens during the upgrade, the corresponding node will be in UpgradeFailed state. Before trying again to upgrade an item whose previous upgrade attempt failed, perform the following:

1. Fix the error in the item before retrying the upgrade.
2. With the item node selected, click **Reset** to reset the Status value of the item to ReadyToUpgrade.

You can also click **Stop** if the log indicates a condition that makes it pointless to try to upgrade any more of the items selected for upgrade.

To upgrade items

1. In the Upgrade Tree pane, select the check boxes for all the object stores to be upgraded.
2. Click **Start** to initiate the upgrade and wait until the log or the color of the icon indicates that the upgrade is complete.
3. In the Upgrade Tree pane, select any other object stores to be upgraded, and clear the check boxes for all those object stores already upgraded.
4. Click **Start** to initiate the upgrade. A confirmation message is displayed. Click **Yes** to proceed with the upgrade, or click **No** to cancel.

As the upgrade proceeds, the success or failure of each item being upgraded is captured in a viewable report, which you can view in the **Report** tab.

This report is the same as that generated by running the command-line version of the Upgrader tool.

NOTE (DB2 only) If a Transaction Log Full exception (SQL ErrorCode -964) occurs during the upgrade, it is recommended that you increase LOGSECOND (the maximum number of secondary log files) for the database and then repeat this step.

To change LOGSECOND, run the following command:

```
UPDATE DATABASE CONFIGURATION FOR db_name USING LOGSECOND n
```

where *n* is the new value of LOGSECOND.

If you encounter the exception after the log file counts have been doubled, contact your IBM service representative.

5. To view the upgrade report, click the **Report** tab near the top left of the screen. To save the report as an HTML file, click **Save** in the Report pane.
6. To view the log, click the Log tab near the top left of the screen. To copy the log data to the clipboard, click **Copy**. To clear the log data, click **Clear**.
7. If the Upgrader tool successfully upgrades every item continue at [“Complete Content Search Engine upgrade from 3.5.x” on page 494](#). Otherwise, complete the following steps:
 - a. Use the information (exception code and stack trace) in the command-line output or the `log4j` file to correct the error.
 - b. Select the failed item and click **Reset** on the Description tab, which will change the status of the item from UpgradeFailed to ReadyToUpgrade.

- c. If the object store add-on upgrade takes longer than 10 minutes and the upgrade fails with exceptions displayed in the upgrade console or log, you need to increase your application server timeout settings. Complete the following steps:
- i. Increase your application server transaction timeout value. Make a note of your existing values before you make changes. Depending on your hardware, you may need to increase the timeout value to as much as 6000 seconds.

WebSphere - Navigate to **Application Servers > servername > Transaction Services > Runtime**, and increase the values for *Total transaction lifetime timeout* and *Maximum transaction timeout*.

WebLogic - Increase the value for **Domain > Services > JTA > Timeout Seconds** and the value for **Servers > CESServerInstanceName > Configuration > Tuning > Stuck Thread Max Time**. Use the same value for both settings.

JBoss - Edit the `jboss-service.xml` file to set the value for `<attribute name="TransactionTimeout">`.
 - ii. Restart the application server.
 - iii. Restart the upgrade for the object store add-ons.
 - iv. Once the upgrade completes successfully, you can reset the application server timeout settings to the previous values.
- d. Return to [Step 1](#).

Command-line interface to the Upgrader tool

In this section you will create an XML upgrade status file and run the Upgrader tool using the command-line interface (CLI) method.

To create an XML upgrade status file

This procedure interrogates the GCD of the Content Engine 3.5.x installation to produce an XML file containing representations of the items that can be upgraded.

The XML file contains placeholders, which you will need to manually edit, for system settings that cannot be derived from the GCD, such as authentication settings. Each placeholder is indicated by the character string '###'.

1. Log on to the machine where the Upgrader tool is installed as `ce_upgrader_tool_user`. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Navigate to the `ce_install_path\tools\upgrade` directory, which contains `CE450Upgrader.bat`.
3. Note the path `GCD_Path` to the GCD file `sysinit.dat` on the Content Engine server machine.
4. Designate a path `XML_Path` for the XML upgrade status file to be generated in [Step 5](#).
5. Run the following command to create the XML upgrade status file `upgrade.xml`:

```
CE450Upgrader.bat -i"GCD_Path/sysinit.dat" -o"upgrade.xml"
```

6. Manually edit upgrade.xml as required for your site, as follows:

- Replace each occurrence of the string '###' with information that is appropriate for your site.
- The passwords you specify must be in plain text. The Upgrader tool will encrypt these passwords, as well as any other sensitive data, such as passwords in fixed content device parameters.
- A 'yes' value of SelectedForUpgrade means you want to upgrade the item; a 'no' value means you do not want the item to be considered for upgrade.
- The Status attribute values have the meanings shown in the following table:

Status Value	Description
NeedsInfo	Additional configuration information is needed. Set this field value to ReadyToUpgrade only after you have supplied the required information.
ReadyToUpgrade	The item will be upgraded if its SelectedForUpgrade value is yes.
UpgradeStarted	The Upgrader tool has started upgrading the item.
UpgradeFinished	The Upgrader tool has successfully upgraded the item.
UpgradeFailed	The Upgrader tool has failed to upgrade the item.
Unsupported	Devices (FCDs only) not supported by the Upgrader tool

- An item will be upgraded only if its SelectedForUpgrade value is 'yes' and its Status value is 'ReadyToUpgrade'.
 - If you do not want to include Content Search Engine as part of your Content Engine upgrade, you need to first unconfigure CBR from the 3.5.x object store using the CE 3.5.x Enterprise Manager Administration, and then re-run the Upgrader tool.
7. If no file store or FCD contains full-text (CBR) indexes (Verity collections) to upgrade, then its preparation is complete; otherwise continue at [Step 8](#).
8. Enter the information below for the K2 variables in the XML file. Autonomy K2 security account information is required.

Parameter	Description
UserName	K2 Security User
UserPassword	K2 Security User password
UserDomain	Domain on which the K2 services run
UserGroup	K2 Security Group
AdminServerHost Name	Name of the host on which the K2 Master Administration server is installed

Parameter	Description
AdminServerPort	K2 Master Administration Server port
StyleSetAlias	FileNet_FileSystem_PushAPIFileNet_FileSystem_PushAPI
K2ServerNames	K2 Server names
IndexServerNames	K2 Index Server names
Brokers	K2 Broker Server names

To specify multiple Index Server names, K2 Server names, or K2 Broker Server names, press **Enter** after typing each value to bring the cursor to a new line. Do not use any other delimiters (such as commas or spaces) to separate your values.

9. Locate the directories containing collections and set permissions to allow access to the following users:
 - Content Engine Operating System User
 - K2 Operating System User
10. For each directory containing 3.5.x content-search indexes (Verity collections) that you want to upgrade to 4.5 index areas (K2 collections), make collections readable by Verity by opening the `Verity.cfg` file and entering the following information:
 - alias: Path number that increments for each path you list.
 - mapping: full path to the collections directory.
 - dirmode: permission value that you must set to `wr` (write and read).

- a. Open the following Verity configuration file in a text editor:

```
C:\ProgramFiles\filenet\contentengine\verity\k2\common\verity.cfg
```

- b. Modify the next available alias settings by entering the information listed above for each collections directory you will upgrade.

For example, if the next available settings are number 6 and you want to upgrade collections on *myserver*, located in *FileStores\myfilestore\index*, you would change `alias6`, `mapping6`, and `dirmode6` to the following:

```
alias6=path1
mapping6=\\myserver\FileStores\myfilestore\index
dirmode6=wr
```

To add another directory, *myotherserver\collections\index* for example, you would modify settings for number 7 as follows:

```
alias7=path2
mapping7=\\myotherserver\collections\index
dirmode7=wr
```

NOTE If the upgraded 4.5 Content Engine will be on UNIX, be sure to specify the UNIX mount to the 3.5.x content-search indexes. For example,

```
mapping6=/opt/CE_35_filestore_mount/index
```

11. Continue at [“To run the Upgrader tool using the CLI” on page 492](#).

To run the Upgrader tool using the CLI

You will now run the Upgrader tool, `CE450Upgrader.bat`, with the file `upgrade.xml` you generated in [“To create an XML upgrade status file” on page 489](#) as input to drive the actual upgrade.

Before upgrading an object store, the Upgrader tool takes the object store offline. After upgrading an object store, the Upgrader tool updates the corresponding Status value in `upgrade.xml`.

1. Log on to the machine where the Upgrader tool is installed as *ce_upgrader_tool_user*. For details on required accounts and related permissions, see [“Accounts for Content Engine upgrade” on page 193](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Navigate to the `ce_install_path\tools\upgrade` directory, which contains `CE450Upgrader.bat`.
3. (Optional) To see the available options, run the Upgrader tool from a command line, as follows:

```
CE450Upgrader -h
```

Notice from the command output that the Upgrader tool supports the following:

- Specify the amount of time (in seconds) for it to wait after taking an object store offline before upgrading it (using the `-d` option).
 - Generate an HTML report of the upgrade (using the `-r` option).
4. Run the Upgrader tool, specifying options shown in [Step 3](#).
As it attempts to upgrade each item, the Upgrader tool sends a status message to the command line and to a log4j logging system. If it fails in upgrading an item, the Upgrader tool will halt.
 5. If the Upgrader tool successfully upgrades every item in [Step 4](#), then continue at [“Complete Content Search Engine upgrade from 3.5.x” on page 494](#). Otherwise, complete the following steps:
 - a. Use the information (exception code and stack trace) in the command-line output or the `log4j` file to correct the error.
 - b. Edit `upgrade.xml` by replacing any Status value of `UpgradeStarted` or `UpgradeFailed` to `ReadyToUpgrade`.
 - c. If the failure occurred due to an error *after* the database upgrade has completed, then restore your database from backup.

6. If the Upgrader tool successfully upgrades every item continue at [“Complete Content Search Engine upgrade from 3.5.x” on page 494](#). Otherwise, complete the following steps:
 - a. Use the information (exception code and stack trace) in the command-line output or the `log4j` file to correct the error.
 - b. Select the failed item and click **Reset** on the Description tab, which will change the status of the item from `UpgradeFailed` to `ReadyToUpgrade`.
 - c. If the object store add-on upgrade takes longer than 10 minutes and the upgrade fails with exceptions noted in the log, you need to increase your application server timeout settings.

Complete the following steps:

- i. Increase your application server transaction timeout value. Make a note of your existing values before you make changes. Depending on your hardware, you may need to increase the timeout value to as much as 6000 seconds.

WebSphere

Navigate to **Application Servers > *servername* > Transaction Services > Runtime**, and increase the values for *Total transaction lifetime timeout* and *Maximum transaction timeout*.

WebLogic

Increase the value for **Domain > Services > JTA > Timeout Seconds** and the value for **Servers > *CEServerInstanceName* > Configuration > Tuning > Stuck Thread Max Time**. Use the same value for both settings.

JBoss

Edit the `jboss-service.xml` file to set the value for `<attribute name="TransactionTimeout">`.

- ii. Restart the application server.
 - iii. Restart the upgrade for the object store add-ons.
 - iv. Once the upgrade completes successfully, you can reset the application server timeout settings to the previous values.
- d. Return to [Step 4](#).

Task 18: Complete Content Search Engine upgrade from 3.5.x

After upgrading Content Engine data and Content Search Engine data, you must create new collections and remove old index areas

This procedure covers the minimum setup and configuration steps to get CBR configured and running with Autonomy K2 for an upgrade from 3.5.x. For more detail on Content-Based Retrieval and Content Engine, see the IBM FileNet P8 help topic [Configure CBR](#) found at [FileNet P8 Administration > Content Engine Administration > Content-based retrieval > How to... > Configure CBR](#).

NOTE Where machine name variables are required, IP addresses will not validate. In these cases, you must enter the host name for the machine.

1. Launch Enterprise Manager and log on as the GCD Administrator.
2. Access each Index Area to be removed and set the status to **Closed**. For details, see the IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > Content-based retrieval > How to... > View/change index area status](#).

NOTE The Index Areas must be closed first and deleted later because they cannot be deleted until after a reindex has completed. Even though remote collections have been mapped, no indexing will be run on those Index Areas.

3. Create a new index area for 4.5 Content Search Engine collections. Launch the Create an Index Area wizard:
 - a. In the tree view, expand the **Object Stores** container.
 - b. Right-click the object store to which you want add an index area and select **New > Index Area**.
 - c. Complete the Create an Index Area wizard using the following table:

In this screen...	Perform this action...
Welcome	Click Next to proceed with the index area creation. NOTE Click Back at any time to make changes in previous screens. Click Cancel to exit the wizard.
Select Index Area Site	From the list of available sites, select the site to which the index area you are creating will be associated Click Next to continue.
Name and Describe the Index Area	Enter a name and description for the new index area. Click Next to continue.

In this screen...	Perform this action...
Enter Index Area Verity Directories	<p>Enter the following Content Search Engine information:</p> <ul style="list-style-type: none"> For Template Type, enter the following: FileNet_FileSystem_PushAPI Verity collections directory path, stated as local to the CSE machine on which it resides. For example: Windows C:\collections UNIX opt/collections Verity temp directory path, stated as local to the CSE machine on which it resides. For example: Windows C:\tempdir UNIX opt/tempdir <p>Click Next to continue.</p>
Select Verity Search Servers	<p>From the list of available search servers, select at least one server to be used for this index area.</p> <p>Click Next to continue.</p>
Select Verity Index Servers	<p>From the list of available index servers, select at least one server to be used for this index area.</p> <p>Click Next to continue.</p>
Completion Screen	<p>Review the entries you have selected for this index area and click Finish to complete the wizard and create the index area with the options you specified.</p>

For more information on creating indexes, see the IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > Content-based retrieval > How to... > Create Verity index area](#).

4. Enable CBR for class definitions by activating the CBR Enable flag of the class you want available for CBR, as follows:
 - a. Right-click the class you want to configure in the Enterprise Manager tree and click **Properties**.
 - b. Select CBR Enabled and click **OK**.
5. Enable CBR for the class properties you want available for CBR, as follows:
 - a. Right-click the class you want to configure and click **Properties**.
 - b. Click the **Property Definitions** tab.
 - c. Click the string property you want to enable for CBR indexing and click **Edit**.
 - d. Check **CBR Enabled** and click **OK**.

NOTE In the wizard, set the Template Type to FileNet_FileSystem_PushAPI.

6. Reindex to create new collections. For details, see the IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > Content-based retrieval > How to... > Reindex](#).
7. Delete the old index areas and reclaim the space. For details, see the IBM FileNet P8 help topic [FileNet P8 Administration > Content Engine Administration > Content-based retrieval > How to... > Remove Verity Index Area](#).
8. If you are not updating the Process Engine to version 4.5 at this time, ensure you install the latest Content Engine 4.5.x client files on the Process Engine server. See ["Upgrade the Content Engine Client files on Process Engine servers" on page 519](#).
9. If you're not updating Application Engine Servers to version 4.0.2 at this time, ensure you install the latest Content Engine 4.5. client files on the Application Engine server. See ["Install the latest Content Engine Client files on Application Engine servers" on page 564](#).

Upgrade and configure Process Engine

Perform the following tasks to upgrade your Process Engine installation:

1. [“Complete pre-upgrade Process Engine configuration” on page 498.](#)
2. Perform the Process Engine upgrade. See one of the following tasks:
 - [“Upgrade Process Engine interactively” on page 505](#)
 - [“Upgrade Process Engine silently” on page 512](#)
3. [“Upgrade the Content Engine Client files on Process Engine servers” on page 519](#)
4. [“Install the latest Process Engine Client files on other IBM FileNet P8 servers \(for staged upgrades\)” on page 525](#)
5. [“Complete post-upgrade Process Engine configuration” on page 526](#)
6. [“Install Process Engine software updates” on page 542](#)

Task 1: Complete pre-upgrade Process Engine configuration

A number of steps must be completed prior to installing the Process Engine software. The steps vary depending on what release you are upgrading from.

To execute pre-upgrade steps for upgrades from PE 3.5.x

NOTES

- Verify that you have reconciled the Process Engine user security information. See [“To prepare Process Engine for upgrade” on page 188](#) of *Plan and Prepare Your Environment for IBM FileNet P8*.
- If password complexity verification for Oracle databases has been enabled, it must be disabled to upgrade Process Engine but can be re-enabled after the upgrade is complete.
- Determine when to execute the upgrade SQL script for Oracle databases. This script must be run either:
 - manually, before running the Process Engine installation program.
 - or
 - automatically, from the Process Engine installation program, allowing the installation program to prompt for the sys password for Oracle in an xterm window.
 - or
 - automatically, from the Process Engine installation program, running silently using operating system authentication. Use operating system authentication only in a trusted environment or when configured with a local database.

See [“Process Engine SQL scripts” on page 255](#) of *Plan and Prepare Your Environment for IBM FileNet P8* for detailed information on the script and modes of execution.

- (UNIX only) Verify that the raw partitions used for the SEC database have been expanded to 64MB. If the partitions have been expanded, Process Engine installation will automatically update the SEC database to use the expanded partitions.
- Purge the event logs and statistic records in the Process Engine database. Clear the event logs and statistics records that are no longer required for Process Engine tracker items or workflow milestones. Clearing these items reduces the amount of time required to upgrade the Process Engine database.
- If you are using a production Process Analyzer, verify that all Process Engine events have been transmitted to Process Analyzer and that the Process Analyzer events have been published. If the events have not been transmitted and published, either before purging from the Process Engine database, or before the Process Engine database upgrade, they will not be available to the Process Analyzer.

WARNING Do not start the Process Task Manager until specifically told to do so. When you start Task Manager, the database is accessed, which should not be done until the database

has been upgraded using the procedures in [“Complete post-upgrade Process Engine configuration” on page 526](#).

To verify that all Process Engine 3.x events have been transmitted to Process Analyzer 3.x

The steps in this procedure apply only to customers who are using a production Process Analyzer, they are not necessary for a simulation Process Analyzer. If you are not using Process Analyzer, proceed to [“To purge event logs and statistics records” on page 503](#). If you are using Process Analyzer you must execute these procedures before proceeding to [“To purge event logs and statistics records” on page 503](#).

The Process Analyzer gets its data from the Process Engine database. All generated events must be transmitted from Process Engine to Process Analyzer before the upgrade. The following steps must be taken to verify that transmission is complete. Some of these steps must be taken on the Process Engine database, some on the Process Engine server using the vwtool utility, and some on the Process Analyzer VMAEDM database.

You will query the Process Analyzer VMAEDM database for a date/time value. Date/time values are stored in the Process Engine and Process Analyzer databases in different formats. When a value has been acquired from the Process Analyzer database, you will use vwtool to convert the value to the appropriate format for the Process Engine database. You will then execute a query on the Process Engine database using the converted date/time value as one parameter in the SQL query.

1. Stop Process Engine applications. These applications include any applications that are generating events or running workflows.
2. Keep both Process Engine and Process Analyzer running until all the events from Process Engine are transmitted to Process Analyzer.
3. Execute the following sub-steps to acquire a date/time value from the Process Analyzer database and convert it to an appropriate format for the Process Engine database.

- a. On the Process Analyzer VMAEDM database, execute the following SQL query:

```
select InstallDate from X_SchemaInfo
```

This returns a date and time string, such as 09/11/2006 16:23:59. This string must be converted.

- b. On the Process Engine server, start the vwtool utility to convert the Process Analyzer data/time string to Process Engine format.
- c. At the vwtool prompt, type `convert`, as in:

```
<vwtool:26>convert
```

Then press **Enter**. The following choice list displays:

- t - Time number to string
- s - String to time number
- e - Error tuple to three part
- p - Three part error to error tuple
- l - Log event type number to string

- i - User id to user name
- n - User name to user id

d. At the Choice? prompt, enter:

s

and press **Enter**. This converts a string to a time number and returns the following information to indicate what the current date/time mask is, as in:

Current System Mask: mm/dd.yyy hh:tt:ss

Time Mask (CR=system mask):

e. Press **Enter** to accept the default mask.

f. When prompted to enter the time string (CR="), type the value that was returned from the SQL query executed on Process Analyzer VMAEDM in step a. (for example, 09/11/2006 16:23:59). Your input must match the format of the current system mask from step d above. Then press **Enter**.

A string value is returned for the date/time entered, which you must make note of for the next set of queries. For example:

Time...[0x4505F00F].....**1158017039** => '09/11/2006 16:23:59'

g. Get a list of all regions on the disk by typing the following at a vwtool prompt:

regions

h. When prompted, respond by typing:

d

i. For every region, type the following at a vwtool prompt:

reg X

where X is the region number

j. Type the following at the vwtool prompt:

config

k. Locate and make note of the physical table name associated with every event log.

l. On the Process Engine database, execute a SQL query (such as the following example) to verify that no untransmitted events remain in the Process Engine database. You will query for the number of records in every physical table associated with event logs, using the names you acquired in the previous step. Following is an example of the query syntax:

```
Select count(*) from f_sw.physical table name where F_AEXmitStat = 1 and  
F_TimeStamp > PAInstallDate
```

where :

The *physical table name* was acquired in step k.

The *PAInstallDate* is the number returned in step f.

Note that the physical table name must be preceded by `f_sw.` in the query.

The query result must be 0. If the queries do not return 0, not all events have been collected, in which case Process Engine and Process Analyzer must keep running until all the events are transmitted and the queries return 0.

To verify that all Process Analyzer 3.5.x events have been published

Process Analyzer must publish all the events in its VMAEDM database. Verify that all events have been published through the Microsoft Query Analyzer. Query for the number of rows in the `F_Events` table in the VMAEDM database with `PAJobId = 0`.

The following is an example of the query on the Process Analyzer database.

Using VMAEDM:

```
Select count(*) from F_Events where PAJobId = 0
```

The above query should return 0. If the query returns anything other than 0, then not all events have been published. In that case, you must leave Process Analyzer running until the query returns 0.

To purge event logs and statistics records

Before you upgrade Process Engine, use the `vwlog` utility to reduce the number of event log and statistics records in the database. This step is optional, but eliminating some of these records can significantly reduce the amount of time necessary for the upgrade to complete. Note that purging these records can take a significant amount of time, so plan this activity accordingly.

Execute the command by logging on as a member of the PE Configuration group.

The following are some examples of `vwlog` syntax. Do not use the `-P` option when you purge logging records if you are using Process Analyzer.

```
vwlog -X -r region number (this command removes the statistics from the specified isolated)
```

The following command will remove all log records from the isolated region. Use this only if all workflows have terminated and you no longer need tracking or milestone information.

```
vwlog -L -r region number (this command removes all log records from the specified isolated region)
```

There are multiple optional parameters for the `vwlog` utility, allowing selection of log records for deletion meeting a number of conditions, such as log records for terminated workflows, for tracker related records, and more. See the IBM FileNet P8 help topics under [FileNet P8 Administration > Process Engine Administraton > Administrative tools > vwlog](#) for additional information.

NOTE If Process Analyzer is installed, you must complete the steps detailed in [“To verify that all Process Engine 3.x events have been transmitted to Process Analyzer 3.x” on page 499](#) and [“To verify that all Process Analyzer 3.5.x events have been published” on page 501](#) before you purge event logs.

To stop all Process Engine-related services and applications

1. Complete the following procedure:

UNIX

Log on as root.

Windows

Log on as fnsw.

2. Set the PPM and any routers to manual startup if they are currently configured to autostart.
3. Stop the following components if they are running:

- Process Simulator
- Process Analyzer
- Custom applications that require a router
- Component Manager
- Routers - for Application Engines, Content Engine and custom applications
- Content Engine
- Pooled Process Manager (PPM)
- Process Service
- Process Task Manager

4. Enter the following at a command prompt after the FileNet software is shut down.

Windows

```
killfnsw -D -y -S
```

UNIX

```
killfnsw -DAyS OR killfnsw -D -A -y -S
```

5. (AIX only) Execute the following:

```
slibclean
```

6. (UNIX only) Execute the following command to look for any java processes that are still running:

```
ps -ef | grep java | grep VW
```

Kill any P8-related running java processes.

Proceed to either [“Upgrade Process Engine interactively” on page 505](#) or [“Upgrade Process Engine silently” on page 512](#).

To execute pre-upgrade steps for upgrades from PE 4.0.x

- IBM recommends that you complete the upgrade of the entire P8 platform and verify functionality before upgrading database software.
- If password complexity verification for Oracle databases has been enabled, it must be disabled to upgrade Process Engine but can be re-enabled after the upgrade is complete.
- Determine when to execute the upgrade SQL script for Oracle databases. This script must be run in one of the following ways:
 - manually, before running the Process Engine installation program.
 - or
 - automatically, from the Process Engine installation program, allowing the installation program to prompt for the sys password for Oracle in an xterm window.
 - or
 - automatically, from the Process Engine installation program, running silently using operating system authentication. Use operating system authentication only in a trusted environment or when configured with a local database.

See [“Process Engine SQL scripts” on page 255](#) of *Plan and Prepare Your Environment for IBM FileNet P8* for detailed information on the script and modes of execution.

To purge event logs and statistics records

Before you upgrade Process Engine, use the vwlog utility to reduce the number of event log and statistics records in the database. This step is optional, but eliminating some of these records can significantly reduce the amount of time necessary for the upgrade to complete. Note that purging these records can take a significant amount of time, so plan this activity accordingly.

Execute the command by logging on as a member of the PE Configuration group.

The following are some examples of vwlog syntax. Do not use the -P option when you purge logging records if you are using Process Analyzer.

```
vwlog -X -r region number (this command removes the statistics from the specified isolated)
```

The following command will remove all log records from the isolated region. Use this only if all workflows have terminated and you no longer need tracking or milestone information.

```
vwlog -L -r region number (this command removes all log records from the specified isolated region)
```

There are multiple optional parameters for the vwlog utility, allowing selection of log records for deletion meeting a number of conditions, such as log records for terminated workflows, for tracker related records, and more. See the IBM FileNet P8 help topics under [FileNet P8 Administration > Process Engine Administration > Administrative tools > vwlog](#) for additional information.

To stop all Process Engine-related services and applications

1. Complete the following procedure:

UNIX

Log on as root.

Windows

Log on as fnsw.

2. Stop the following components if they are running:

- Process Simulator
- Process Analyzer
- Component Manager
- Content Engine
- Process Service
- Process Task Manager

3. Shut down any active windows displaying Process Engine log files.

4. Enter the following at a command prompt to stop the Process Engine software:

```
initfnsw -y stop
```

5. Enter the following at a command prompt after the FileNet software is shut down.

Windows

```
killfnsw -D -y -S
```

UNIX

```
killfnsw -DAyS OR killfnsw -D -A -y -S
```

6. (AIX only) Execute the following:

```
slibclean
```

7. (UNIX only) Execute the following command to look for any java processes that are still running:

```
ps -ef | grep java | grep VW
```

Kill any P8-related running java processes.

Proceed to either [“Upgrade Process Engine interactively” on page 505](#) or [“Upgrade Process Engine silently” on page 512](#).

Task 2a: Upgrade Process Engine interactively

Interactively upgrade Process Engine software by performing the procedures in this topic that are appropriate for your platform.

You will find references to logging on as the root and fnsu users within the following procedures. For all UNIX operating systems, the root user must run in the Bourne or Korn shell and the fnsu user must run in the Korn shell.

Several Process Engine upgrade screens will display only if the upgrade is from Process Engine version 3.5.x. Those screens are noted in the *Installation and Upgrade Worksheet*.

CAUTION Before starting the Process Engine installation, verify that you have completed the steps in the *To configure the /etc/hosts file* section in the *Plan and Prepare Your Environment for IBM FileNet P8* guide.

To verify the database connection

Use the procedures in this topic to verify the ability to connect to the database. Execute these steps on the database server or the client according to whether the database is local to or remote from Process Engine.

To verify the Process Engine database connection (Oracle)

Take the following steps to verify that the Oracle database instance used by Process Engine is accessible. How you log on to sqlplus will vary, depending upon how you will choose to execute the SQL scripts. This procedure will verify that you can connect to the Oracle database in the same way the Process Engine installation program will. Make whatever corrections are necessary before proceeding.

1. Execute the following at a command prompt:

```
su - oracle -c "sqlplus"
```

2. Enter one of the following commands at the SQLPlus prompt, as follows:

- If the Process Engine pre-installation SQL scripts will be run from the Process Engine installation program by prompting for the sys password, type the following command:

```
sys/password as sysdba
```

- If the SQL scripts will be run from the Process Engine installation program by using operating system authentication, type the following command:

```
/ as sysdba
```

3. At the prompt, enter the following SQL command:

```
SQL> select instance_name, host_name, version from v$instance;
```

The following represents an example of the information returned:

```
INSTANCE_NAME
-----
```

HOST_NAME

VERSION

p8dbshr
 HQVWBUCS
 10.2.0.2.0

where:

p8dbshr is the instance ORACLE_SID.

hqvwbuks is the database server name.

10.2.0.2 is the Oracle server version.

To verify the Process Engine database connection (DB2)

Verify the connection to the DB2 Process Engine database by executing the following commands to start a command line processor.

1. Log on to the DB2 Control Center tool, as follows:

Windows

At a command prompt, start the DB2 Command Line Processor by typing the following command:

```
db2cmd
```

and, at the subsequently displayed prompt, enter the following command:

```
db2
```

UNIX

Log on as the client instance owner and execute the following at a command prompt:

```
db2
```

2. At the DB2 prompt, enter the following command indicating either the database alias or the instance name:

```
connect to database_alias or instance_name user f_sw using f_sw password
```

where:

database_alias is the Process Engine DB2 for Linux, UNIX and Windows database alias for remote databases. For local databases, use the database name.

instance_name is the Process Engine DB2 for z/OS database name

f_sw is the Process Engine runtime user, either the default *f_sw* user or the assigned alias

f_sw password is the runtime user's password.

DB2 will display the database connection information.

The following example shows the database connection command and the information returned:

```
db2 => connect to pedbinst user f_sw using fswpassword
```

Database Connection Information

```
Database server      = DB2/AIX64 9.1.0
SQL authorization ID = F_SW
Local database alias = PEDBINST
```

In this example, the database alias is pedbinst, the user is f_sw, and the f_sw user password is fswpassword.

To verify the Process Engine database connection (SQL Server)

Take the following steps to verify that the SQL Server database instance used by Process Engine is accessible. You will need to know both the Process Engine database and filegroup names. Make whatever corrections are necessary before proceeding.

In this example, the database is VWdb and the filegroup name is vwdata_fg. Both the database name and filegroup name must match what was defined when the database MS SQL server was installed and configured.

1. Log on as a member of the local Administrators group or a user with equivalent permissions. The user you log on as must also be a database administrator. If the database is remote, the SQL connection must also be a trusted connection.
2. At a command prompt, enter:

```
osql -E -D DSN
```

where *DSN* is the ODBC data source name

This command puts Process Engine into osql interactive mode.

3. At the osql prompt, enter:

```
1> use VWdb
2> go
```

where *VWdb* is the Process Engine database name

This command verifies that the Process Engine database has been created. If you get another prompt with no error, you are attached to that database.

4. Verify that the correct Process Engine filegroup was created. At the osql prompt, enter:

```
1> select substring(groupname,1,20) from sysfilegroups where groupname = 'defined filegroup'
2> go
```

where *defined filegroup* is the default filegroup

A listing of the Process Engine filegroups will display, for example:

`vwdata_fg`

To upgrade the Process Engine software interactively (UNIX)

1. Log on to the server as the root user.

NOTE This user does not need to be a database administrator unless you will be executing the SQL scripts from the Process Engine installation program.

2. Access the Process Engine software package.
3. From the console, launch the appropriate `P8PE-4.5.0-platform.bin` installation program.
4. Wait for files to finish unpacking.
5. Complete the Process Engine installation screens using the appropriate information from your installation worksheet. Installation program screens may indicate this is an installation, although this is an upgrade.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Process Engine installer:

- a. Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select PE installer.
 - b. Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
 - c. Click the AutoFilter drop-down arrow in all other column headers and select (All).
6. Monitor `/fnsw/local/logs/wizard` to check the progress of the upgrade since the installation program will run for several minutes, and its progress, though displayed, might not visibly advance for an extended period of time.
 7. Reboot when prompted.
 8. A number of log files might be generated by the installation. Check for any .log files generated when the installation program executed. The files could be in any of the following locations, depending upon whether the installation was successful or had errors, and where the installation encountered errors. Correct any errors or failures indicated before proceeding to the next step.
 - `/fnsw/local/logs/PE` (if the install completes successfully)
 - `/fnsw/tmp_installer` (if the install has errors)
 - `/fnsw/local/logs/wizard` and other subdirectories under `/fnsw/local/logs`
 9. Log off as the root user and log on as `fnsw` (or the alias).
 10. Proceed to ["To set the f_maint and f_sw passwords" on page 510.](#)

To upgrade the Process Engine software interactively (Windows)

1. Log on as a member of the local Administrators group or a user with equivalent permissions. If you plan to run the SQL scripts from the Process Engine installation program, the user you log on as must also be a database administrator. See [“Specify IBM FileNet P8 accounts” on page 70](#) of *Plan and Prepare Your Environment for IBM FileNet P8* for information on requirements for logging on as a Windows domain user for Process Engine installation.
2. Access the Process Engine software package, and start the P8PE-4.5.0-Win.exe installation program.

NOTE To run the Process Engine installation from disk, you must copy the installation files to a disk volume where 8.3 name generation is enabled, or if 8.3 name generation is disabled, you must copy the installation to a path that uses only short (8.3) names.

When running from disk, either interactively or silently, be aware that the Process Engine installation program has a 64-character path limitation when the path is expressed in 8.3 format. This limitation applies to the IMSInst subdirectory. For example, the original path is:

```
\\server08\Software\InstallationDisks\FileNet\Release P8
4.5.0\ProcessEngine\Windows\IMSInst
```

When expressed in 8.3 format the path might be:

```
\\server08\Software\INSTAL~1\FileNet\RELEAS~1.0\PROCES~1\Windows\IMSInst
```

This compressed path is 73 characters long, exceeding the 64-character limit.

3. Complete the Process Engine installation screens using the appropriate information from your installation worksheet. Installation program screens may indicate this is an installation, although this is an upgrade.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (p8_worksheet.xls), perform the following steps to quickly see only the installation properties you must specify for the Process Engine installer:

- a. Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select PE installer.
 - b. Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
 - c. Click the AutoFilter drop-down arrow in all other column headers and select (All).
4. A number of log files might be generated by the installation. Check for an .log files generated when the installation program executed. The files could be in any of the following locations, depending upon whether the installation was successful or had errors, and where the installation encountered errors. Correct any errors or failures indicated before proceeding to the next step.
 - C:\Program Files\FileNet\PE\PE450_setup.log
 - C:\Program Files\FileNet\PE
 - C:\FNSW

- *Windir\mini_installer.log*, Windows Event logs, and log files under `\FNSW_LOC\logs`

5. Start the following services:

- IMS ControlService
- Process Engine Services Manager

To set the f_maint and f_sw passwords

For added security, Process Engine stores an encrypted version of the passwords for the f_sw and f_maint users, or their aliases, in a file called `rdbup.bin`. This is in addition to passwords for these users in the Oracle or SQL Server database, or on the operating system where DB2 is installed. The encrypted password and the database (Oracle or SQL Server) or operating system (DB2) user's passwords must match.

To verify that the passwords match, use the following procedure to start the Xdbconnect utility. Xdbconnect works only if the passwords in the encrypted file and the database match.

Use the following procedure to change the passwords for the f_maint and f_sw users after upgrading the Process Engine software. For Oracle and SQL Server databases, both the encrypted file and the database passwords will be updated. For DB2, only the encrypted file will be updated.

1. Start the Database Server Connect application by executing the following:

```
Xdbconnect -r
```

2. Log on as SysAdmin. The default password is SysAdmin.
3. Change the primary password for the users f_sw and f_maint (or their alias) to match the database password (Oracle and SQL Server) or operating system user's password (DB2).
4. Exit the application.

To re-enable Oracle Password Complexity Verification

- If, as directed earlier, you disabled the the Oracle Password Complexity Verification feature prior to upgrading Process Engine, you can re-enable it now.

To restore any custom modifications for root and fnsw users (UNIX)

- Process Engine installation creates new versions of a number of files. If the previous versions of these files contained any custom settings, edit the new files for the fnsw and root users accordingly. Saved files are in `.filename.old.nn`, where `nn` is a sequential number. The latest saved version will be in the highest numbered file. The following files are modified by the Process Engine installation program:

- `.Xdefaults`
- `.Xresources`
- `.dbxinit`
- `.dtprofile`

- .env
- .login
- .mwmrc
- .xinitrc
- .profile
- .cshrc

To edit the /etc/inittab file

- By default, the Process Engine software starts automatically when you restart the server and needs its database started beforehand. If the database is not automatically started on server restart, edit the /etc/inittab file on the Process Engine machine to comment out the autostart of Process Engine. The following are examples of changes to make.

AIX

Change:

```
rcfnsw:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

to read:

```
#rcfnsw:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

HP-UX

Change:

```
rcfn:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

to read:

```
#rcfn:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

Solaris

Change:

```
fn:3:wait:/bin/sh /etc/rc.initfnsw </dev/console >/dev/console 2>&1
```

to read:

```
#fn:3:wait:/bin/sh /etc/rc.initfnsw </dev/console >/dev/console 2>&1
```

To edit the pe_start file (HP-UX only)

- If the value for the maxdsiz kernel parameter is > 1GB, edit the pe_start file.

Change:

```
nohup /usr/ccs/lbin/dldd32 2>&1 >/dev/null
```

to read

```
nohup /usr/ccs/lbin/dldd32 +a 0x70000000 2>&1 >/dev/null
```

Proceed to [“Upgrade the Content Engine Client files on Process Engine servers”](#) on page 519.

Task 2b: Upgrade Process Engine silently

Silently upgrade Process Engine software by performing one of the following procedures.

CAUTION Before starting the Process Engine installation, verify that you have completed the steps in the *To configure the /etc/hosts file* section in the *Plan and Prepare Your Environment for IBM FileNet P8* guide.

To verify the database connection

Use the procedures in this topic to verify the ability to connect to the database. Execute these steps on the database server or the client according to whether the database is local to or remote from Process Engine.

To verify the Process Engine database connection (Oracle)

Take the following steps to verify that the Oracle database instance used by Process Engine is accessible. How you log on to sqlplus will vary, depending upon how you will choose to execute the SQL scripts. This procedure will verify that you can connect to the Oracle database in the same way the Process Engine installation program will. Make whatever corrections are necessary before proceeding.

1. Execute the following at a command prompt:

```
su - oracle -c "sqlplus"
```

2. Enter one of the following commands at the SQLPlus prompt, as follows:

- If the Process Engine pre-installation SQL scripts will be run from the Process Engine installation program by prompting for the sys password, type the following command:

```
sys/password as sysdba
```

- If the SQL scripts will be run from the Process Engine installation program by using operating system authentication, type the following command:

```
/ as sysdba
```

3. At the prompt, enter the following SQL command:

```
SQL> select instance_name, host_name, version from v$instance;
```

The following represents an example of the information returned:

```
INSTANCE_NAME
-----
HOST_NAME
-----
VERSION
```

```
-----  
p8dbshr  
HQVWBUCS  
10.2.0.2.0
```

where:

p8dbshr is the instance ORACLE_SID.

hqvwbuks is the database server name.

10.2.0.2 is the Oracle server version.

To verify the Process Engine database connection (DB2)

Verify the connection to the DB2 Process Engine database by executing the following commands to start a command line processor..

1. Log on to the DB2 Control Center tool, as follows:

Windows

At a command prompt, start the DB2 Command Line Processor by typing the following command:

```
db2cmd
```

and, at the subsequently displayed prompt, enter the following command:

```
db2
```

UNIX

Log on as the client instance owner and execute the following at a command prompt:

```
db2
```

2. At the DB2 prompt, enter the following command indicating either the database alias or the instance name:

```
connect to database_alias or instance_name user f_sw using f_sw password
```

where:

database_alias is the Process Engine DB2 for Linux, UNIX and Windows database alias for remote databases. For local databases, use the database name.

instance_name is the Process Engine DB2 for z/OS database name

f_sw is the Process Engine runtime user, either the default *f_sw* user or the assigned alias

f_sw password is the runtime user's password.

DB2 will display the database connection information.

The following example shows the database connection command and the information returned:

```
db2 => connect to pedbinst user f_sw using fswpassword
```

Database Connection Information

```
Database server      = DB2/AIX64 9.1.0
SQL authorization ID = F_SW
Local database alias = PEDBINST
```

In this example, the database alias is pedbinst, the user is f_sw, and the f_sw user password is fswpassword.

To verify the Process Engine database connection (SQL Server)

Take the following steps to verify that the SQL Server database instance used by Process Engine is accessible. You will need to know both the Process Engine database and filegroup names. Make whatever corrections are necessary before proceeding.

In this example, the database is VWdb and the filegroup name is vwdata_fg. Both the database name and filegroup name must match what was defined when the database MS SQL server was installed and configured.

1. Log on as a member of the local Administrators group or a user with equivalent permissions. The user you log on as must also be a database administrator. If the database is remote, the SQL connection must also be a trusted connection.

2. At a command prompt, enter:

```
osql -E -D DSN
```

where *DSN* is the ODBC data source name

This command puts Process Engine into osql interactive mode.

3. At the osql prompt, enter:

```
1> use VWdb
2> go
```

where *VWdb* is the Process Engine database name

This command verifies that the Process Engine database has been created. If you get another prompt with no error, you are attached to that database.

4. Verify that the correct Process Engine filegroup was created. At the osql prompt, enter:

```
1> select substring(groupname,1,20) from sysfilegroups where groupname = 'defined filegroup'
2> go
```

where *defined filegroup* is the default filegroup

A listing of the Process Engine filegroups will display, for example:

```
_____
vwdata_fg
```

To upgrade the Process Engine software silently (UNIX)

Take the following steps to silently upgrade Process Engine.

1. Access the Process Engine software package, and copy the contents to a local temporary directory on the local disk.
2. Edit the `PE_silent_install.txt` file to reflect the appropriate responses for your system. All passwords in the response file must be encrypted. See [“Encrypt passwords” on page 700](#) for information on use of the password encryption tool.
3. Save the edited response file to your temporary directory.
4. Log on as the root user in the Korn shell.
5. Navigate to the temporary directory on the local disk.
6. Open a command prompt and execute:

```
P8PE-4.5.0-platform -silent -options PE_silent_install.txt
```

7. Monitor `/fnsw/local/logs/wizard` to check the progress of the upgrade since installation will run for several minutes, and its progress, though displayed, might not visibly advance for an extended period of time.
8. A number of log files might be generated by the installation. Check for any .log files generated when the installation program executed. The files could be in any of the following locations, depending upon whether the installation was successful or had errors, and where the installation encountered errors. Correct any errors or failures indicated before proceeding to the next step.
 - `/fnsw/local/logs/PE` (if the install completes successfully)
 - `/fnsw/tmp_installer` (if the install has errors)
 - `/fnsw/local/logs/wizard` and other subdirectories under `/fnsw/local/logs`
9. Log off as the root user and log on as `fnsw` (or the alias).

To upgrade the Process Engine software silently (Windows)

1. Access the Process Engine software package, and copy its contents to a temporary directory on the local disk.
2. Edit the `PE_silent_install.txt` file to reflect the appropriate responses for your system. All passwords in the response file must be encrypted. See [“Encrypt passwords” on page 700](#) for information on use of the password encryption tool.
3. Save the edited response file to your temporary directory.
4. Log on as a member of the local Administrators group or a user with equivalent permissions. The user you log on as must also be a database administrator. See [“Specify IBM FileNet P8 accounts” on page 70](#) of *Plan and Prepare Your Environment for IBM FileNet P8* for information on requirements for logging on as a Windows domain user for Process Engine installation.

5. Open a command prompt and navigate to the temporary directory. Execute:

```
P8PE-4.5.0-Win.exe -silent -options PE_silent_install.txt
```

6. A number of log files might be generated by the installation. Check for any .log files generated when the installation program executed. The files could be in any of the following locations, depending upon whether the installation was successful or had errors, and where the installation encountered errors. Correct any errors or failures indicated before proceeding to the next step.

- C:\Program Files\FileNet\PE\PE450_setup.log
- C:\Program Files\FileNet\PE
- C:\FNSW
- Windir\mini_installer.log, Windows Event logs, and log files under \FNSW_LOC\logs

7. Start the following services:

- IMS ControlService
- Process Engine Services Manager

To set the f_maint and f_sw passwords

For added security, Process Engine stores an encrypted version of the passwords for the f_sw and f_maint users, or their aliases, in a file called `rdbup.bin`. This is in addition to passwords for these users in the Oracle or SQL Server database, or on the operating system where DB2 is installed. The encrypted password and the database (Oracle or SQL Server) or operating system (DB2) user's passwords must match.

To verify that the passwords match, use the following procedure to start the Xdbconnect utility. Xdbconnect works only if the passwords in the encrypted file and the database match.

Use the following procedure to change the passwords for the f_maint and f_sw users after upgrading the Process Engine software. For Oracle and SQL Server databases, both the encrypted file and the database passwords will be updated. For DB2, only the encrypted file will be updated.

1. Start the Database Server Connect application by executing the following:

```
Xdbconnect -r
```

2. Log on as SysAdmin. The default password is SysAdmin.
3. Change the primary password for the users f_sw and f_maint (or their alias) to match the database password (Oracle and SQL Server) or operating system user's password (DB2).
4. Exit the application.

To re-enable Oracle Password Complexity Verification

If, as directed earlier, you disabled the the Oracle Password Complexity Verification feature prior to upgrading Process Engine, you can re-enable it now.

To restore any custom modifications for root and fnsw users (UNIX)

- Process Engine installation creates a new versions of a number of files. If the previous versions of these files contained any custom settings, edit the new files for the fnsw and root users accordingly. Saved files are in `.filename.old.nn`, where `nn` is a sequential number. The latest saved version will be in the highest numbered file. The following files are modified by the Process Engine installation program:
 - `.Xdefaults`
 - `.Xresources`
 - `.dbxinit`
 - `.dtprofile`
 - `.env`
 - `.login`
 - `.mwmrc`
 - `.xinitrc`
 - `.profile`
 - `.cshrc`

To edit the `/etc/inittab` file

- By default, the Process Engine software starts automatically when you restart the server and needs its database started beforehand. If the database is not automatically started on server restart, edit the `/etc/inittab` file on the Process Engine machine to comment out the autostart of Process Engine. The following are examples of changes to make.

AIX

Change:

```
rcfnsw:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

to read:

```
#rcfnsw:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

HP-UX

Change:

```
rcfn:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

to read:

```
#rcfn:2:once:/etc/rc.initfnsw 2>&1 | alog -tboot > /dev/console 2>&1
```

Solaris

Change:

```
fn:3:wait:/bin/sh /etc/rc.initfnsw </dev/console >/dev/console 2>&1
```

to read:

```
#fn:3:wait:/bin/sh /etc/rc.initfnsw </dev/console >/dev/console 2>&1
```

To edit the pe_start file (HP-UX only)

- If the value for the maxdsiz kernel parameter is > 1 GB, edit the pe_start file.

Change:

```
nohup /usr/ccs/lbin/dldd32 2>&1 >/dev/null
```

to read:

```
nohup /usr/ccs/lbin/dldd32 +a 0x70000000 2>&1 >/dev/null
```

Proceed to [“Upgrade the Content Engine Client files on Process Engine servers”](#) on page 519.

Task 3: Upgrade the Content Engine Client files on Process Engine servers

To install the Content Engine Client files, perform the following steps on all servers where Process Engine Server has been upgraded.

IMPORTANT Your Content Engine Client version must match your Content Engine server version, unless otherwise noted in the *FileNet P8 Compatibility Matrix*. Install the latest 4.5 Content Engine Client files as documented in this topic only when you are ready to upgrade Content Engine servers to 4.5.

In a staged upgrade from 4.0, you might run upgraded Process Engine 4.5 servers with Content Engine 4.0 servers for some period of time. In this case, install the latest 4.0 Content Engine Client files. For detailed instructions, see the latest 4.0 version of the *IBM FileNet P8 Installation and Upgrade Guide* on the IBM Web site.

To stop Process Engine software

1. Log on as fnsf or the alias.
2. At a command prompt, enter the following:

Windows

```
killfnsf -D -y -S
```

UNIX

```
killfnsf -D -A -y -S
```

3. On AIX, execute:

```
slibclean
```

To uninstall Content Engine Client 4.0.x instances

Perform the following procedure to identify and uninstall all Content Engine Client version 4.0.x files on a Process Engine Server machine. Repeat the procedure for all other Process Engine Server machines.

Depending on the Content Engine Client fix pack versions that you have installed, you may have more than one instance of the Content Engine Client 4.0.x installed. Additionally, the version 4.0.x Content Engine Client installer supported installing multiple instance of the Content Engine Client on the same server. You need to uninstall all instances before upgrading to the 4.5 version of Content Engine Client.

1. Locate and uninstall all instances of the Content Engine Client on the Process Engine server.

Windows

- a. Select **Start > Settings > Control Panel > Add/Remove Programs**.
- b. Select **Content Engine Client Updater** or **IBM FileNet Content Engine Client Installer**, depending on the fix pack version of Content Engine Client that is installed.

Prior to fix pack P8CE-4.0.1-006: The Content Engine Client is named Content Engine Client Updater.

As of fix pack P8CE-4.0.1-006: The Content Engine Client is named IBM FileNet Content Engine Client Installer.

- c. Click **Change/Remove** to start the uninstaller.
- d. In the Uninstall IBM FileNet Client Installer screen, click **Next**.
- e. In the Select Components screen, select Complete Uninstall. Click **Next**.
- f. In the Uninstall Complete screen, click **Done**.
- g. Repeat [Step b](#) through [Step f](#) for each additional instance of **Content Engine Client Updater** or **IBM FileNet Content Engine Client Installer** listed in Add/Remove Programs.

UNIX

- a. Run one of the following commands, depending on the fix pack version of Content Engine Client that is installed.

```
/ce_client_install_path/ClientUpdater/_uninst/uninstaller.bin
```

```
/ce_client_install_path/CEClient/_CEClientuninst/uninstaller
```

Prior to fix pack P8CE-4.0.1-006: The Content Engine Client files are in a directory called ClientUpdater, and the uninstallation program is .../ClientUpdater/_uninst/uninstaller.bin.

As of fix pack P8CE-4.0.1-006: The Content Engine Client files are in a directory called Content Engine Client and the uninstallation program is .../CEClient/_CEClientuninst/uninstaller.

- b. In the Uninstall IBM FileNet Client Installer screen, click **Next**.
- c. In the Select Components screen, select Complete Uninstall. Click **Next**.
- d. In the Uninstall Complete screen, click **Done**.
- e. Repeat [Step a](#) through [Step d](#) for each installed instance of Content Engine Client on this server.

To install the Content Engine Client files

Refer to the appropriate information from your installation worksheet while performing the following steps. For information on the Content Engine parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE Client installer (UNIX) or CE Client installer (Windows).
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."

- Click the AutoFilter drop-down arrow in all other column headers and select (All).
1. To download the latest software updates, and to determine which of these updates may be required for use with other components and expansion products, contact your service representative.
 2. Log on to the server where Process Engine is installed as fns with these permissions:
 - Read and write permission to a temporary directory, such as `temp` (Windows) or `tmp` (UNIX), on the machine where Process Engine is installed
 - Execute permission on the Content Engine Client install software
 3. Verify that there is a current backup of Process Engine.
 4. Copy the Content Engine Client install software from the Content Engine installation software to the temporary directory, and unzip the software package. The version of the installation software must match the version of Content Engine.
 - To install the Content Engine client interactively:
 - i. Access the IBM FileNet Content Engine client update software.
 - ii. Run one of the commands in the table below, *CE_version* is the version of Content Engine you intend to run, for example, 4.5.0..

Operating System	Install Program
AIX	P8CE-CLIENT-CE_version-AIX.BIN
HPUX	P8CE-CLIENT-CE_version-HPUX.BIN
HPUXi	P8CE-CLIENT-CE_version-HPUXI.BIN
Linux	P8CE-CLIENT-CE_version-LINUX.BIN
Solaris	P8CE-CLIENT-CE_version-SOL.BIN
Windows	P8CE-CLIENT-CE_version-WIN.EXE
zLinux	P8CE-CLIENT-CE_version-ZLINUX.BIN

- iii. Complete the installation program wizard, using the following table.

In this screen...	Perform this action...
Welcome	Click Next to proceed with the Content Engine Client installation. NOTE Click Back at any time while running the Content Engine Client installer to make changes in any previous screens. Click Cancel to exit the Content Engine Client installer.

In this screen...	Perform this action...
Specify Content Engine Client Installation Path	<p>Specify the complete path where you want the Content Engine Client program files installed. The defaults are as follows:</p> <p>UNIX</p> <p>/opt/FileNet/Content Engine</p> <p>Windows</p> <p>C:\Program Files\FileNet\CEClient</p> <p>Click Next to continue.</p>
Select FileNet P8 Applications	<p>Select Process Engine, and click Next to continue.</p>
Process Engine Installation Path	<p>Enter the full path to the Process Engine installation location. The defaults are as follows:</p> <p>UNIX</p> <p>/FNSW</p> <p>Windows</p> <p>C:\FNSW</p> <p>Click Next to continue.</p>
Content Engine Application Server	<p>Select the Content Engine application server type from the list. Valid choices are:</p> <ul style="list-style-type: none"> • WebSphere • WebLogic • JBoss <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify URLs for EJB Transport (This screen will not display during an upgrade.)	Specify the URLs for the Content Engine Enterprise Java Bean (EJB) API. <ul style="list-style-type: none"> Content Engine Client Software URL The URL for the Content Engine Web Services client API. This URL will contain the WcmApiConfig.properties file, which is required for applications to communicate with Content Engine Server, regardless of whether they use the EJB or Web Services transport method. The default is: cemp:iiop//CEServer:2809/FileNet/Engine Content Engine upload URL The upload URL is used for internal processes during EJB transport activities. The default is: cemp:iiop//CEServer:2809/FileNet/Engine Content Engine download URL The download URL is used for internal processes during EJB transport activities. The default is: cemp:iiop//CEServer:2809/FileNet/Engine Click Next to continue.
Specify URL for WSI Transport	The URL for the Content Engine Web Services client API. The API contains the WcmApiConfig.properties file, which is required for applications to communicate with Content Engine Server, regardless of whether they use the EJB or Web Services transport method. The default is: cemp:http://CEServer:9080/wsi/FNCEWS40DIME/ Click Next to continue.
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing Content Engine Client.

- To install the Content Engine client files silently:
 - Make a back up copy of the CEClient_silent_install.txt input file.
 - Open the silent input file in a text editor. Follow the instructions in the silent input file to edit the file to reflect the appropriate responses for your update.

- iii. Navigate to the path containing the Content Engine Client installation program, and run one of the commands in the following table to perform the silent install, where:

CE_version is the version of Content Engine you intend to run, for example, 4.5.0.

path is the path that contains the installation program.

Operating System	Install Program
AIX	P8CE-CLIENT- <i>CE_version</i> -AIX.BIN -f <i>path</i> /CECLIENT.AIX/ CEClient_silent_install.txt -i silent
HPUX	P8CE-CLIENT- <i>CE_version</i> -HPUX.BIN -f <i>path</i> /CEClient.HPUX/ CEClient_silent_install.txt -i silent
HPUXi	P8CE-CLIENT- <i>CE_version</i> -HPUXI.BIN -f <i>path</i> /CEClient.HPUXI/ CEClient_silent_install.txt -i silent
Linux	P8CE-CLIENT- <i>CE_version</i> -LINUX.BIN -f <i>path</i> /CEClient.Linux/ CEClient_silent_install.txt -i silent
Solaris	P8CE-CLIENT- <i>CE_version</i> -SOL.BIN -f <i>path</i> /CEClient.Solaris/ CEClient_silent_install.txt -i silent
Windows	P8CE-CLIENT- <i>CE_version</i> -WIN.EXE -f <i>path</i> \CEClient.Windows\ CEClient_silent_install.txt -i silent
zLinux	P8CE-CLIENT- <i>CE_version</i> -ZLINUX.BIN -f <i>path</i> /CEClient.zLinux/ CEClient_silent_install.txt -i silent

5.

Task 4: Install the latest Process Engine Client files on other IBM FileNet P8 servers (for staged upgrades)

When you upgrade Process Engine server software, you must also upgrade the associated Process Engine Client files installed on other machines running IBM FileNet P8 components, for example, on Content Engine and Application Engine servers. In a standard upgrade of your IBM FileNet P8 system, you would install these client files in the course of upgrading each respective component.

However, if you are staging your IBM FileNet P8 upgrade over a period of time and not upgrading one or more of the other IBM FileNet P8 components at this time, you must still perform the Process Engine Client install on the other component machines. In this case, use the following topics in the sections for the other components:

- [“Install the latest Process Engine Client files on Content Engine servers” on page 391](#)
- [“Install the Latest Process Engine Client files on Application Engine servers” on page 571](#)

NOTES

- You will have this same client-installation requirement for any expansion products that use Process Engine Client files, such as:
 - Workplace XT
 - Records Manager
 - Business Process Framework
- You must redeploy any components that are web-application-server based, such as Content Engine, Application Engine, Workplace XT, and Records Manager after you upgrade the Content Engine Client files on the associated machines.

Task 5: Complete post-upgrade Process Engine configuration

You must perform the following additional procedures to complete the upgrade of all Process Engine data and objects. Perform the procedures in one of the following two subtopics, depending on the starting point of your upgrade:

[“Complete the upgrade from Process Engine 3.5.x” on page 526](#)

[“Complete the upgrade from Process Engine 4.0.2-001, 4.0.3, or higher” on page 538](#)

Complete the upgrade from Process Engine 3.5.x

The format of the event log files changed in the 4.0 release. As a part of this upgrade, several SQL scripts must be executed for SQL Server and DB2 databases only.

CAUTION Throughout this procedure there are multiple software restarts. Execute all restarts as documented. Do not start or restart Process Task Manager or other IBM FileNet software unless specifically told to do so. When you restart Process Task Manager it accesses the database, which should not be done until the database has been upgraded.

To execute steps on a UNIX operating system, the terminal must support X Windows and the DISPLAY environment variable must be set.

SQL Server Client software is required on the Process Engine server to execute a number of SQL scripts documented in this topic if the database is a remote SQL Server. The SQL Server Client software can be removed from the Process Engine server after the Process Engine database has been successfully upgraded to the 4.5 release.

To update the Process Engine database objects

After you have updated the Process Engine software, you must update the Process Engine database objects.

1. UNIX

Log on as fnsf.

Windows

Log on as a local administrator.

2. (Windows only) Ensure that the Process Engine services are started:
 - IMS ControlService
 - Process Engine Services Manager
3. (Windows only) Enable the redirection of log messages to the Image Services error log. This redirection logs messages to the Image Services error log as well as to the default Windows Event Log. When you enable this redirection, you can monitor the progress of the database object upgrade in a command window.

To enable the redirection, change the LogToFiles value from 0 to 1 for the following registry key.

HKEY_LOCAL_MACHINE > SOFTWARE > FileNET > IMS > CurrentVersion

4. Restart the Process Engine software by entering the following at a Windows command prompt or UNIX command line.

```
initfnsw -y restart
```

5. If you are using a SQL Server database, proceed to [Step 6](#). If you are using a DB2 database, proceed to [Step 7](#). If you are using an Oracle database, proceed to [Step 8](#).
6. (SQL Server only) Edit and run the `\fnsw\mssql\vwssql35to40_pre1.bat` file. Database schema changes will be made to `vwnotify` and `vwpending` database tables.

- a. Save the file to the same directory as `vwssql35to40_pre1a.bat`.
- b. Change the values in the file as appropriate for your system. The content of the `vwssql35to40_pre1.bat` file looks like this:

```
osql /U sa /P /n /d VWdb /h-1 /i vwssql35to40_pre1.sql
```

Change the values for your system to:

```
osql /D DSN /U sa /P sa /n /d VWdb /h-1 /i vwssql35to40_pre1.sql
/o pre1a.log
```

where:

`/D` indicates the following variable is your ODBC data source name (DSN).

`/U` indicates the following variable is the administrator user name in the Process Engine database.

`/P` indicates the following variable is the administrator user's password in the Process Engine database.

`/d` indicates the following variable is the Process Engine database name.

Optionally, you can add an output file `/o pre1a.log`. Otherwise, all output goes only to the screen.

- c. Run the `vwssql35to40_pre1a.bat` file.
- d. Proceed to [Step 8](#).
7. (DB2 only) Edit and run the `\fnsw\DB2\vwdb2_35to40_pre1.bat` file on Windows or `\fnsw\DB2\vwdb2_35to40_pre1.sh` on UNIX platforms. Database schema changes will be made to `vwnotify` and `vwpending` database tables.
 - a. Copy the file to the same directory as `vwdb2_35to40_pre1a.bat` or `vwdb2_35to40_pre1a.sh`.
 - b. Change the values in the file as appropriate for your system to:

```
db2 connect to database_name user PE runtime user using password
```

where:

database_name is your Process Engine DB2 database name

PE runtime user is the Process Engine runtime user (f_sw)

password is the Process Engine runtime user password in the Process Engine database

- c. Run the `vwdb2_35to40_pre1a.bat` under from the DB2 command line processor on Windows, or run `vwdb2_35to40_pre1a.sh` from a command prompt on UNIX.
 - d. Proceed to [Step 8](#).
8. Initiate the database Process Engine schema changes by executing the following command:

```
vwtool
```

and then complete the following substeps:

- a. Choose Yes when a message is presented indicating that an upgrade is required.
- b. Turn on tracking for database access and transfer when prompted as to whether you want to initiate tracking to capture the changes make to a trace file.

NOTE A number of messages will scroll to the window. Do not choose X in response to the prompt as this will terminate the current `vwtool` command and return an error.

- c. Type `exit` to end `vwtool` when the upgrade is complete.

When `vwtool` starts, it automatically checks the Process Engine database level, updates the schema accordingly, and creates two additional scripts.

SQL Server

```
fns\mssql\vwssql35to40_post1.sql
```

```
fns\mssql\vwssql35to40_post2.sql
```

DB2

```
fns\DB2\vwdb2_35to40_post1.sql
```

```
fns\DB2\vwddb2_35to40_post2.sql
```

CAUTION If the upgrade fails at this point, you must restore the Process Engine database backup.

See the Image Services error log to monitor the progress of the updates and ensure that no errors occur.

Check the logs to verify that messages similar to the following are captured:

```
2006/10/17 16:23:43.261 <fns> VW/Process (14952) ... [INFO]
VW: Database upgrade successful to version 46, please follow instructions to perform
the next step.
```

```
2006/10/17 16:23:43.303 <fns> VW/Process (14952) ... [INFO]
VW: Must restart software to complete upgrade procedure
```

Please follow the upgrade documentation to continue with the upgrade procedures.

You must:

1. Restart the Process Engine software.
2. Configure the Process Engine connection to the Content Engine.
3. Run `vwtool` to continue the upgrade procedure.

Ignore messages designated as **SERIOUS** if they are in combination with a successful message for that upgrade, especially if all process IDs are the same for all the errors and **INFO** messages.

9. Exit `vwtool` when you get a message that the procedure is complete.
10. Do a backup of the Process Engine database. This backup can serve as a checkpoint, should an error occur later that requires a database restore.
11. Restart the Process Engine software. At a Windows command prompt, or UNIX command line, type the following:

```
initfnsw -y restart
```

To update the Process Engine security

Before updating the Process Engine security, ensure the following is true:

- Your directory server is running and correctly configured.
- Content Engine 4.0 or 4.5 is running.

NOTE When the Process Task Manager starts, a message will be presented indicating that routers must be migrated. Routers will be migrated in [“To migrate routers and update isolated regions” on page 531](#) as a part of completing Process Engine configuration changes. The message can be ignored now.

1. Update the information on the Process Task Manager Security / General tab, as follows:
 - a. Start Process Task Manager as follows, depending on your operating system:

Windows

Select **Start > Programs > FileNet P8 Platform > Process Engine > Process Task Manager**.

UNIX

Enter the following command on the command line:

```
vwtaskman
```

- b. Verify that Process Engine is running. To start it, right-click your Process Engine server in the feature pane and choose **Start** from the Action menu.
- c. Select the Process Engine in the feature pane and select the **Security** tab to configure the General settings.

Provide the `pe_service_user` and password, the `pe_admin_group` and the optional `pe_config_group`. See the IBM FileNet P8 help topic [FileNet P8 Administration > Enterprise-wide Administration > Process Task Manager > Process Engine > Configure the Process Engine > Security](#) for details on the user and groups.

NOTE The service user name should be entered as a short name, not a distinguished name.

- d. Click **Apply**.

NOTE If you get an error applying security settings, click **Close** on the message, correct the problem if noted, and repeat [Step 1 on page 529](#).

Additional information is available in:

Windows

```
\fnsw_loc\logs\TM_daemon\PEDirectoryServerConnectionDebug.txt
```

UNIX

```
/fnsw/local/logs/TM_daemon/PEDirectoryServerConnectionDebug.txt
```

- e. Click **OK** to close the dialog box indicating that you must run vwtool.
- f. Exit Process Task Manager.
2. Run vwtool and choose **Yes** when a message is presented indicating that an upgrade is required.

This step moves all existing user environment records from the 3.5.x format to the 4.5 format.

- a. Turn on tracing when prompted.
- b. Choose No in response to the question to override until you have carefully evaluated all users who's environment records did not migrate properly. If you are certain that all unmigrated users are no longer valid Process Engine users, that is, they have no Process Engine work, then you can override these errors and complete this part of the upgrade. Once you choose to override these errors, there is no way to recover the user environment records for any users not migrated to 4.5. Any Process Engine work for unmigrated users is lost. Choose Yes to ignore errors and force the completion of the upgrade only after you have resolved any outstanding problems.

As user environment records are moved, information is logged to the Image Services error log. When vwtool finishes, it will display messages on the screen indicating whether or not the migration was successful, how many users were migrated, and how many users were not migrated.

If all users did not successfully migrate to the 4.5 format, you will need to look at the messages in the error log and resolve the problems. Examples of the types of resolution required could include the need to fix a problem with the configuration of the Content Engine and its application server's access to the directory server or the need to create users in the underlying directory server itself.

- c. Address any errors that occurred execute vwtool again. You might be prompted to ignore issues related to the user environment record upgrades.

NOTE If vwtool fails with a shared memory error, follow [Step 3 through Step 6](#) in "(Windows only) To configure contiguous free memory for Process Engine" on [page 538](#) to set a hardcoded shared memory address, setting the address to 0x122300000. After setting and verifying the address, execute [Step 2](#) again.

3. Check the error log to verify that the database version number has been updated to 52. This update will happen only after either successful migration of all environment records or all errors have been intentionally overridden.
4. At a Windows command prompt, or UNIX command line, type the following to restart the Process Engine software:

```
initfnsw -y restart
```

To migrate routers and update isolated regions

Use the following required sub-procedures to convert all routers to connection points, and assign passwords to any existing isolated regions:

To remove existing routers in Process Task Manager

1. On the Process Engine and Application Engine servers, use Process Task Manager to view, and make note of, the general properties of each Process Router:
 - Process Router name
 - Process Engine
 - Isolated region
2. Delete each Process Router, as follows.

NOTE You can do this immediately or wait until the corresponding connection points are created. The Process Routers displayed in Process Task Manager are not used and have no effect on the system other than to cause a warning message on Process Task Manager startup. Once all Process Routers have been deleted and Process Task Manager has been restarted, the Process Router node no longer appears.

- a. Select the Process Router you want to delete.
- b. Select Delete from the Action menu.
- c. Repeat [Step a](#) and [Step b](#) until you have deleted all Process Routers.

To configure new regions in Enterprise Manager

1. Start Enterprise Manager 4.5.
2. Right-click **PE Region ids > New PE Region ids**.
3. Specify an isolated region for each unique Process Engine / isolated region combination. (If you have more than one Process Router pointing to the same Process Engine / isolated region combination, you will identify only one Process Engine Region ID.)

For this Process Engine Region ID property...	Use the value from this Process Router property...
DNS name or IP address of the Process Engine	Process Engine
Region number	Isolated region

4. Assign a password for each region as you create it. Make note of the password you assign. You will need to enter that password in the steps that follow for assigning the password to regions in Process Task Manager. The passwords must match.
5. Navigate to the PE Connection Points node, start the wizard, and create new connection points for each region.
6. Close Enterprise Manager.

To configure new regions in Process Task Manager

1. Start Process Task Manager on the Process Engine server as follows, depending on your operating system:

Windows

Select **Start > Programs > FileNet P8 Platform > Process Engine > Process Task Manager**.

UNIX

Enter the following command on the command line:

```
vwtaskman
```

The terminal must support X Windows and the DISPLAY environment variable must be set.

2. Select Process Engine in the feature pane.
3. Right-click on the **Regions** folder, select New to create a new region.
4. Select the **Security Settings** sub-tab to set a region password.

NOTE The password must match the password that you entered when creating a Process Engine Region in [Step 4 on page 532](#) (in the previous procedure).

After you have entered all parameters, click **Apply** and restart the Process Service when prompted. If errors are returned, additional information is available in the following file:

Windows

```
\fnsw_loc\logs\TM_daemon\PEDirectoryServerConnectionDebug.txt
```

UNIX

```
/fnsw/local/logs/TM_daemon/PEDirectoryServerConnectionDebug.txt
```

To update email notification

If you're using email notification, do the following to enable email notification:

1. Add a language pack for the Default Authoring Locale.

See the IBM FileNet P8 help topic [FileNet P8 Administration > Process Engine Administration > Workflow administration tasks > Coordinating workflow design > Enable Email notification](#) for information on adding a language pack for the Default Authoring Locale.

NOTE Process Engine supports localized email notification. For details on configuring this, see the *IBM FileNet P8 Non-English Support Guide*. To download this document from the IBM

FileNet support Web site, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

2. Verify that the Default Authoring Locale is correct (it has defaulted to the operating system's locale).

To update all isolated regions

Use the following procedure to update isolated regions, namely to perform a transfer of the `upgrade.cdl` file.

1. Restart the Process Engine software by typing the following at a command line:

```
initfnsw -y restart
```

2. Change directories to the following location of the `upgrade.cdl` file, depending on your operating system:

Windows

```
\fnsw_loc\sd
```

UNIX

```
/fnsw/local/sd
```

3. Initiate a transfer on all working isolated regions by entering the following command:

```
vwtfwr -o upgrade.cdl -r All
```

where:

-r All indicates all regions and All is case sensitive

At the prompt, log on as a user who is a member of the PEAdministrators group.

(SQL Server and DB2 only) To run post-upgrade scripts

If your Process Engine database is either SQL Server and DB2, use the following sub-procedures to run two post-upgrade scripts. For each database type, the first script copies records from archived event-log tables to the new 4.5 version of the tables, and the second script deletes the archived log tables, thereby saving database space.

Because no such scripts are available for Oracle databases, skip to the procedure [“To back up the database and restart software” on page 535](#), which applies to all database types.

(SQL Server)To run post-upgrade scripts

1. Edit and run the `\fnsw\mssql\vwssql35to40_post1.bat` file, as follows:
 - a. Save the `vwssql35to40_post1.bat` file to the same directory as `vwssql35to40_post1a.bat`.
 - b. Change the values in the `vwssql35to40_post1a.sql` file as appropriate for your system. The contents of the file look like this:

```
osql /U sa /P /n /d VWdb /h-1 /i vwssql35to40_post1.sql
```

Change the values for your system to:

```
osql /D DSN /U sa /P sa /n /d VWdb /h-1 /i vwmssql35to40_post1.sql /o post1a.log
```

where:

/D indicates the following variable is your ODBC data source name (DSN).

/U indicates the following variable is the administrator user name in the Process Engine database.

/P indicates the following variable is the administrator user's password in the Process Engine database.

/d indicates the following variable is the Process Engine database name.

/o indicates the following variable is the optional `post1a.log` output file. If you choose to eliminate this entry, output displays to the screen only.

c. Run the `vwmssql35to40_post1a.bat` file.

2. Delete archived event log tables by editing and running `vwmql35to40_post2.bat`.

a. Change the values in the `vwmssql35to40_post2a.sql` file as appropriate for your system. The contents of the file looks like this:

```
osql /U sa /P /n /d VWdb /h-1 /i vwmssql35to40_post2.sql
```

Change the values for your system to:

```
osql /D DSN /U sa /P sa /n /d VWdb /h-1 /i vwmssql35to40_post2.sql /o post2a.log
```

where:

/D indicates the following variable is your ODBC data source name (DSN).

/U indicates the following variable is the administrator user name in the Process Engine database.

/P indicates the following variable is the administrator user's password in the Process Engine database.

/d indicates the following variable is the Process Engine database name.

/o indicates the following variable is the optional `post2a.log` output file. If you choose to eliminate this entry, output displays to the screen only.

b. Run the `vwmssql35to40_post2a.bat` file.

c. Proceed to the procedure ["To back up the database and restart software"](#) on page 535.

(DB2) To run post-upgrade scripts

1. Connect to the DB2 database and run the `\fnsw\DB2\vwdb2_35to40_post1.sql` file.

a. Start the DB2 command line processor and log on to the Process Engine database with the Process Engine runtime user (`f_sw`).

b. Enter the following command in that window:

```
db2 connect to database_name user PE runtime user using password
```

where:

database_name is your Process Engine DB2 database name.

PE runtime user is the Process Engine runtime user (f_sw).

password is the Process Engine runtime user password in the Process Engine database.

- c. Run the `vwdb2_35to40_post1.sql` file by executing the following in the DB2 command line processor:

```
db2 -tvf vwdb2_35to40_post1.sql
```

2. Connect to the DB2 database and run the `\fnsw\DB2\vwmdb2_35to40_post2.sql` file, as follows:

- a. Start the DB2 command-line processor and log on to the Process Engine database with the Process Engine runtime user (f_sw),
- b. Enter the following command in that window:

```
db2 connect to database_name user PE runtime user using password
```

where:

database_name is your Process Engine DB2 database name.

PE runtime user is the Process Engine runtime user (f_sw).

password is the Process Engine runtime user password in the Process Engine database.

- c. Run the `vwmdb2_35to40_post2.sql` file by executing the following in the DB2 command-line processor:

```
db2 -tvf vwdb2_35to40_post2.sql
```

- d. Proceed to the procedure [“To back up the database and restart software”](#) on page 535.

To back up the database and restart software

1. Back up the Process Engine database. While this backup is not required, it is a best practice. It provides a checkpoint that can be used later if a restore is needed in the context of this upgrade.

2. (Windows only) Start the following services and set them back to automatic startup.
 - IMS ControlService
 - Process Engine Services Manager
3. (Windows only) Disable the redirection of log messages to the Windows Event Log by changing the LogToFiles value from 1 to 0 for the following registry key:

HKEY_LOCAL_MACHINE > SOFTWARE > FileNET > IMS > CurrentVersion

4. Restart the Process Engine software, as follows:

At a Windows command prompt, or UNIX command line, type the following:

```
initfnsw -y restart
```

(Windows only) To configure contiguous free memory for Process Engine

Use the following procedure to configure the largest available contiguous free memory block. If you fail to perform this procedure, the system will not allocate shared memory at some point during normal execution and will cease to function correctly.

If you have already created the registry key, reset the value based on the information acquired here.

1. Start vwtool at a command prompt, and log on using the *pe_service_user*.
2. Use the processmap command to find the largest contiguous free memory area, as in:

```
<vwtool:1>processmap
```

This command returns the following output:

```
Process Id (CR=this vwtool process):
```

Press **Return** (CR) to get the process map for this process, as in the following example, where the process ID is 2592:

```
C:\FNSW\BIN\vwtool.exe (ID:2592)
```

Address	Attrib	Size	Owner
=====	=====	=====	=====
00000000	Free	65536	
00010000	Private	12288	
00013000	Free	53248	
00020000	Private	4096	

(pages of memory addresses omitted here)

7FFDE000	Private	4096	
7FFDF000	Private	4096	
7FFE0000	Private	65536	

```
C:\FNSW\BIN\vwtool.exe (ID:2592)
```

```
Largest FREE block found: 453873664 bytes at address 0x4B577000  
Rounded up to a 64K boundary, free block address 0x4B580000
```

In this example, 0x4B580000 is the address you will need in the next step. In some cases you might see only the line referencing the largest free block because the value is already at a 64K boundary.

3. Start regedit from the Windows **Start > Run** command and perform the following steps to create a DWORD value for IS StartShmAddress, using the address noted in step 2 as follows:

- a. Navigate to the following regedit key:

```
HKEY_Local_Machine\Software\FileNet\IMS\CurrentVersion\
```

- b. Create a new DWORD value named:

```
StartShmAddress
```

- c. Enter or verify the following in the Edit DWORD Value Screen:

```
Value name = StartShmAddress
```

```
Value data = address of largest free memory block
```

From the example above the value will be 4B580000.

Base is hexadecimal.

- d. Click **OK**.

- e. Exit from regedit.

4. Restart the Process Engine software.

5. Verify the setting you just applied for the shared memory address by executing the following at a command prompt:

```
ipc_tool -A
```

The following is an example of the information that is returned.

```
Image Services software shared memory segment limit: 129 segments
Current configured segment size: 0x01000000 bytes (16 MB)
Before allocating shared memory for Image Services, the SysV library
performs a test to determine the system shared memory limit. This test
can be used as a reference for performance tuning. The test results vary
depending on the amount of memory in use by other processes. The actual
amount of shared memory available during operation may be less. The test
results are:
```

```
Successfully attached to 27 segments
Successfully obtained 432 MB of shared memory
```

The following table displays the number of shared memory segments currently in use by Image Services. Segment #0 (called the address manager) is small. The other segment(s) contain the actual Image Services data. Note that running ipc_tool will force the creation of segments #0 and #1 even when no other Image Services process is up.

Shared Memory Address Manager Information

Address	Shm id	Creator
---------	--------	---------

Enter <space> to continue, 'q' to quit:

```
0 0x4b580000 FNSHM_464d0000 Shared address manager
1 0x4c580000 FNSHM_464a0000 FileNet server software
Total Image Services shared memory allocated: 16 MB
(This does not include segment #0)
```

NOTE The First shared memory address above 0x4B580000 is the value you would check for this example.

6. Exit `ipc_tool`. If the shared memory address is correct, proceed to the next installation task. If the value is not correct, verify [Step 1](#) through [Step 4](#) above before proceeding.

Complete the upgrade from Process Engine 4.0.2-001, 4.0.3, or higher

Perform the following steps to update a Process Engine database to version 4.5. A database update will take place automatically by restarting the software.

To update the database to version 4.5

1. Run the following command to restart the Process Engine:

```
initfnsw -y restart
```

2. Check the Image Services error logs to verify that messages similar to the following are captured:

```
2008/04/17 16:23:43.261 fnsW VW/Process (14952) ... [INFO]
```

```
VW: Database upgrade successful to version 52 please follow instructions to perform the next step
```

```
2008/04/17 16:23:43.303 fnsW VW/Process (14952) ... [INFO]
```

```
VW: Must restart software to complete upgrade procedure
```

Ignore messages designated as **SERIOUS** if they are in combination with a message indicating a successful upgrade, especially if all process IDs are the same for all errors and **INFO** messages.

3. Proceed to [“\(Windows only\) To configure contiguous free memory for Process Engine”](#) on page 538.

(Windows only) To configure contiguous free memory for Process Engine

Use the following procedure to configure the largest available contiguous free memory block. If you fail to perform this procedure, the system will not allocate shared memory at some point during normal execution and will cease to function correctly.

If you have already created the registry key, reset the value based on the information acquired here.

1. Start `vwtool` at a command prompt, and log on using the `pe_service_user`.
2. Use the `processmap` command to find the largest contiguous free memory area, as in:

```
<vwtool:1>processmap
```

This command returns the following output:

Process Id (CR=this vwtool process):

Press **Return (CR)** to get the process map for this process, as in the following example, where the process ID is 2592:

C:\FNSW\BIN\vwtool.exe (ID:2592)

Address	Attrib	Size	Owner
=====	=====	=====	=====
00000000	Free	65536	
00010000	Private	12288	
00013000	Free	53248	
00020000	Private	4096	

(pages of memory addresses omitted here)

7FFDE000	Private	4096	
7FFDF000	Private	4096	
7FFE0000	Private	65536	

C:\FNSW\BIN\vwtool.exe (ID:2592)

Largest FREE block found: 453873664 bytes at address 0x4B577000
Rounded up to a 64K boundary, free block address 0x4B580000

In this example, 0x4B580000 is the address you will need in the next step. In some cases you might see only the line referencing the largest free block because the value is already at the 64 Kb boundary.

3. Start regedit from the Windows **Start > Run** command and perform the following steps to create a DWORD value for IS StartShmAddress, using the address noted in step 2 as follows:
 - a. Navigate to the following regedit key:


```
HKEY_Local_Machine\Software\FileNet\IMS\CurrentVersion\
```
 - b. Create a new DWORD value named:


```
StartShmAddress
```
 - c. Enter or verify the following in the Edit DWORD Value Screen:


```
Value name = StartShmAddress
```

Value data = *address of largest free memory block*

From the example above the value will be 4B580000.

Base is hexadecimal.
 - d. Click **OK**.
 - e. Exit from regedit.
4. Restart the Process Engine software.

5. Verify the setting you just applied for the shared memory address by executing the following at a command prompt:

```
ipc_tool -A
```

The following is an example of the information that is returned.

```
Image Services software shared memory segment limit: 129 segments
Current configured segment size: 0x01000000 bytes (16 MB)
Before allocating shared memory for Image Services, the SysV library
performs a test to determine the system shared memory limit. This test
can be used as a reference for performance tuning. The test results vary
depending on the amount of memory in use by other processes. The actual
amount of shared memory available during operation may be less. The test
results are:
```

```
    Successfully attached to 27 segments
    Successfully obtained 432 MB of shared memory
```

The following table displays the number of shared memory segments currently in use by Image Services. Segment #0 (called the address manager) is small. The other segment(s) contain the actual Image Services data. Note that running `ipc_tool` will force the creation of segments #0 and #1 even when no other Image Services process is up.

Shared Memory Address Manager Information

Address	Shm id	Creator
Enter <space> to continue, 'q' to quit:		
0 0x4b580000	FNSHM_464d0000	Shared address manager
1 0x4c580000	FNSHM_464a0000	FileNet server software

Total Image Services shared memory allocated: 16 MB

(This does not include segment #0)

NOTE The First shared memory address above 0x4B580000 is the value you would check for this example.

6. Exit `ipc_tool`. If the shared memory address is correct, proceed to the next installation task. If the value is not correct, verify [Step 1](#) through [Step 4](#) above before proceeding.

To update all isolated regions

Use the following procedure to update all isolated regions, namely to perform a transfer of the `upgrade.cd1` file.

1. Restart the Process Engine software by typing the following at a command line:

```
initfnsw -y restart
```

2. Change directories to the following location of the `upgrade.cd1` file, depending on your operating system:

Windows

```
\fnsw_loc\sd
```

UNIX

/fnsw/local/sd

3. Initiate a transfer on all working isolated regions by entering the following command:

```
vwtfcr -o upgrade.cdl -r All -Y
```

where -r All indicates all regions

At the prompt, log on as a user who is a member of the PEAdministrators group.

Task 6: Install Process Engine software updates

Perform the procedure in this topic for the Process Engine to install software updates (fix pack or interim fix).

To install the Content Engine software updates

1. To obtain the latest Process Engine software updates, and to determine whether additional interim fixes are needed, contact your service representative.
2. Open the readmes for the Process Engine software updates and perform the installation procedures in the readmes on the Process Engine.

Upgrade and configure Application Engine

The tasks for upgrading Application Engine vary depending on whether you start from version 3.5.x or version 4.0.x. You must perform some tasks regardless of your upgrade starting point, as indicated in the following steps.

For upgrades from 3.5.x

1. Prepare for the Application Engine upgrade. Perform [Task 1 on page 544](#).
2. Upgrade Application Engine. Perform [Task 2a on page 548](#).
3. Install Application Engine software updates. Perform [Task 3 on page 563](#).
4. Install the Content Engine Client updates. Perform [Task 4 on page 564](#).
5. Install the Process Engine Client updates. Perform [Task 5 on page 571](#).
6. Configure Application Engine according to your application server type:
 - Configure for Websphere: [Task 6a on page 576](#)
 - Configure for WebLogic: [Task 6b on page 585](#)
 - Configure for JBoss: [Task 6c on page 591](#)
7. Manually copy custom Application Engine data. Perform [Task 7 on page 594](#).
8. Deploy Application Engine according to your application server type:
 - Deploy on Websphere: [Task 8a on page 595](#)
 - Deploy on WebLogic: [Task 8b on page 598](#)
 - Deploy on JBoss: [Task 8c on page 600](#)
9. Complete post-upgrade Application Engine configuration. Perform [Task 9 on page 602](#).

For upgrades from 4.0x

1. Prepare for the Application Engine upgrade. Perform [Task 1 on page 544](#).
2. Upgrade Application Engine. Perform [Task 2b on page 559](#).
3. Install Application Engine software updates. Perform [Task 3 on page 563](#).
4. Install the Content Engine Client updates. Perform [Task 4 on page 564](#).
5. Install the Process Engine Client updates. Perform [Task 5 on page 571](#).
6. Manually copy custom Application Engine data. Perform [Task 7 on page 594](#).
7. Deploy Application Engine according to your application server type:
 - Deploy on Websphere: [Task 8a on page 595](#)
 - Deploy on WebLogic: [Task 8b on page 598](#)
 - Deploy on JBoss: [Task 8c on page 600](#)
8. Complete post-upgrade Application Engine configuration. Perform [Task 9 on page 602](#).

Task 1: Prepare for Application Engine upgrade

This task includes Application Engine upgrade preparation instructions for WebSphere, WebLogic, and JBoss (UNIX and Windows). It applies to Application Engine upgrades from both 3.5.x and 4.0.x versions.

Before you upgrade Application Engine

- (Upgrades from 3.5.x only) Verify that Content Engine and Process Engine have been upgraded.
- Review the Application Engine details of the guide *Plan and Prepare Your Environment for IBM FileNet P8 Platform*.
- Review the steps needed to retain the AE 3.5.x or 4.0.1 configuration. You will need this information if, for any reason, you want to back out of this installation.
- Verify that you have recorded *all necessary settings*.

(Best practices for backup) If you want to retain your existing Application Engine settings you must record all necessary settings before you start the upgrade installation.

- As part of the upgrade you will create backup copies of all important 3.5.x or 4.0.1 configuration files in “[Backup, undeploy, and remove the Workplace web application from the J2EE application server.](#)” on page 545.
- During the upgrade, a number of existing configuration files will be moved to the newly created `AE_install_path\Config\AE` directory. See Table 1, “Configuration files that will be moved,” on page 547.
- As part of the upgrade, the installation program automatically creates a backup of your existing AE 3.5.x or 4.0.1 configuration files, appending the suffix `.old` to the file names. See Table 2, “Configuration files that will be backed up,” on page 547.
- The existing version 3.5.x or 4.0.1 `Actions.xml` and `web.xml` files will be merged with the 4.0.2 versions during the upgrade installation.
- In addition, all comments added to the `Actions.xml` file will be lost during the merge.
- If you have the IBM FileNet P8 eForms expansion product installed, uninstall it.
See the “Removing Software” topic in the *IBM FileNet P8 eForms Installation Guide*. To download this guide from the IBM support page, see “[Access IBM FileNet documentation, compatibility matrices, and fix packs](#)” on page 20.

To prepare for the Application Engine upgrade

1. Log on to the Application Engine server:

UNIX

Log on as root.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions.

2. (Upgrades from 3.5.x only) Verify that the Process Router is stopped.

NOTE Although the Application Engine router has been deleted as part of the Process Engine upgrade, a local, disconnected instance might be running on your server.

- a. Launch the Process Task Manager from `AE_install_path/Router`:

UNIX

```
./routercmd.sh
```

Windows

```
routercmd.bat
```

- b. Stop the router, if running.

NOTE This is the router configured and started as part of the FileNet P8 Platform 3.5.x installation. For more information, see the *FileNet P8 Platform 3.5.x Installation and Upgrade Guide* task “Start the Process Router.” To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)

- c. Exit the Process Task Manager.

3. (Windows only) Using the Windows Task Manager, verify that no `javaw.exe` processes are running. If the applications in the preceding steps stopped correctly, no Application Engine related `javaw.exe` processes should be running.
 - a. Use Windows Services to stop the Process Application Engine Services Manager Service. Select **Start > Programs > Administrative Tools > Services**. If the Process Application Engine Services Manager status is started, then right-click the item and select **Stop**.
 - b. If there are still `javaw.exe` processes running after stopping the Process Application Engine Services Manager, use the Windows Task Manager to stop any Application Engine related `javaw.exe` processes.

4. Backup, undeploy, and remove the Workplace web application from the J2EE application server.

During this step you will create a backup copy of the deployed web application containing all customized files and all configuration files stored in the `WEB-INF` directory.

NOTE Even though the installer automatically creates a backup of your existing AE 3.5.x or 4.0.1 configuration files IBM recommends backing up the directories below to get a complete backup of your deployed system. You might need to use these files in later steps, such as when you copy modified files to the installed Workplace directory and perform the upgrade and configuration of Application Engine, to retain your 3.5.x or 4.0.1 settings.

WebSphere

- a. Make a backup copy of the deployed Workplace directory (`deploy_backup`):

```
WAS_HOME/profiles/default/installedApps/node_name/app_engine_war.ear/  
app_engine.war
```

NOTE Your path may vary if you created a new profile or renamed your WAR file.

- b. Stop the Workplace application from the WebSphere administrative console.
- c. Uninstall the Workplace application from **Enterprise Applications**.
- d. Save the changes and stop the WebSphere server.
- e. Delete the temp Workplace directory (default: `app_engine_war`) from:

`WAS_HOME/profiles/default/temp/node_name/instance/app_engine.war`

WebLogic

- a. From the WebLogic Administration Console, stop the Workplace web application module.
- b. Make a backup copy of the Workplace folder (`deploy_backup`):

`AE_install_path/Workplace`

- c. Delete the Workplace Web Application Module.
- d. Stop the WebLogic server.

JBoss

- a. Stop the JBoss server.
- b. Make a backup copy of the deployed Workplace directory (`deploy_backup`):

`JBoss_HOME/server/default/deploy/Workplace.war`

- c. Delete the deployed Workplace directory:

`JBoss_HOME/server/default/deploy/Workplace.war`

- d. Delete the temporary Workplace directory for JBoss:

`JBoss_HOME\server\default\work\jboss.web\localhost\Workplace`

5. Copy modified files to the installed Workplace directory.

During the upgrade, the configuration files listed in [Table 1 on page 547](#) will be moved from the following directory:

`AE_install_path/Workplace/WEB-INF`

to

`AE_install_path/Config/AE`

NOTE If you have made modifications to any of these files directly in the deployed Workplace directory (`app_engine.war` for WebSphere or `Workplace.war` for JBoss) in your FileNet P8 3.5.x or 4.0.1 environment you must copy modified version of these files from the

deploy_backup directory to the installed directory *AE_install_path/Workplace/WEB-INF* before you run the installer. :

Table 1: Configuration files that will be moved

- | | |
|--------------------------------|-----------------------------|
| • actions.xml | • icons.properties |
| • bootstrap.properties | • InfoPages.xml |
| • ClassFilter.xml | • PagingConfiguration.xml |
| • ConfigurableLabels.xml | • PolicyProcessors.xml |
| • containericons.properties | • PrimaryViews.xml |
| • content_redir.properties | • PropertiesPages.xml |
| • customobjecticons.properties | • SimpleSearch.xml |
| • download_redir.properties | • SystemsPropertiesView.xml |
| • fnsoap.xml | |

NOTE As part of the upgrade the installation program automatically creates a backup of your existing AE 3.5.x or 4.0.1 configuration files, appending the suffix *.old* to the file names.

Table 2: Configuration files that will be backed up

- | | |
|---------------------------------|--------------------------------------|
| • actions.xml.old | • UpdateActions.xml.old |
| • ClassFilter.xml.old | • UpdateClassFilter.xml.old |
| • ConfigurableLabels.xml.old | • UpdateConfigurableLabels.xml.old |
| • containericons.properties.old | • UpdateProps.xml.old |
| • content_redir.properties.old | • UpdateSystemPropertiesView.xml.old |
| • icons.properties.old | • UpdateWeb.xml.old |
| • SystemsPropertiesView.xml.old | • web.xml.old |

The backed up files are located in:

AE_install_path/backup-4_0_2

- Upgrade and configure the Application Engine software. See [“Upgrade Application Engine from 3.5.x” on page 548](#).

Task 2a: Upgrade Application Engine from 3.5.x

This topic includes Application Engine installation instructions for all supported application servers and operating systems.

NOTES

- If you plan to install and use the IBM FileNet Workplace XT product, you do not need to install Application Engine.
- Before installing Application Engine, check the latest version of the *IBM FileNet P8 4.5 Release Notes* for known issues that might impact this software installation. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- Make sure your installation location meets the requirements specific for Application Engine outlined in the *IBM FileNet P8 Hardware and Software Requirements*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- Consider whether changing your deployment type is likely.

As a best practice, choose to install Application Engine as if you intend to deploy an EAR file, rather than a WAR file, because this choice will produce both an EAR and a WAR file. If you decide to change your deployment type from EAR to WAR later, you will be able to use the WAR file from the original installation, rather than having to uninstall and reinstall Application Engine.

- (Highly Available installations) To install Application Engine in a web farm or clustered environment, follow the instructions in the *IBM FileNet P8 Platform High Availability Technical Notice*. That document outlines the required HA install procedure and references this guide for detailed installation and deployment instructions. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- To ensure proper functionality and performance install only one instance of Application Engine per application server (or virtual machine or WebSphere LPAR). You can, however, deploy multiple instances of a single Application Engine version per application server. For details, see [“Deploy multiple Application Engine instances” on page 295.](#)
- Before logging on to Workplace for the first time, at least one object store must exist on the Content Engine to hold the site preferences. See [“Create the initial object store” on page 133](#) for more information.
- If you run the installer to upgrade Application Engine, the installer verifies that the currently installed version of Application Engine can be upgraded. See [“Prepare for Application Engine upgrade” on page 544](#) for more information.
- You can install a new Application Engine 4.0.2 server within an existing 4.0.x FileNet P8 environment if your Content Engine is at version 401.006 or later and your Process Engine is at 403-000.001 or later. The Content Engine and Process Engine client files you install on the Application Engine must match the version of your Content Engine and Process Engine.

To install the Application Engine software

1. Log on to the application server, as appropriate for your operating system:

UNIX

Log on as a user with read, write, and execute access to the directory where you plan to install Application Engine.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions.

2. Start the installation process.
 - To install Application Engine interactively:
 - i. Access the IBM FileNet Application Engine 4.0.2 installation software.
 - ii. Launch the appropriate setup program as specified in the following table, and continue with [Step 3 on page 550](#).

Platform	Command
AIX	P8AE-4.0.2.0-AIX.bin
HPUX	P8AE-4.0.2.0-HPUX.bin
HPUXi	P8AE-4.0.2.0-HPUX64.bin
Linux	P8AE-4.0.2.0-LINUX.bin
Solaris	P8AE-4.0.2.0-SOL.bin
Windows	P8AE-4.0.2.0-WIN.exe
zLinux	P8AE-4.0.2.0-ZLINUX.bin

- To install Application Engine silently:
 - i. Locate the IBM FileNet Application Engine 4.0.2 installation software package, and copy the appropriate `AE_silent_input.txt` file to a local directory.
 - ii. Follow the instructions in the silent input file to edit the file to reflect the appropriate responses for your installation.

For information on parameter values, see [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the Data > Filter > AutoFilter command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the Application Engine installation program:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select AE Installer.

- Click the AutoFilter drop-down arrow in all other column headers and select (All).

IMPORTANT If you are modifying the silent input file to perform an upgrade from AE 3.5.x to AE 4.0.2 you must modify all instances of *AE_install_path* in the script as follows:

UNIX

Change `../FileNet/AE` to `../FileNet`

Windows

Change `..\FileNet\AE` to `..\FileNet`

Change `..\FileNet\AE` to `..\FileNet`

- From a command prompt, navigate to and run the installer:

UNIX

```
./P8AE-4.0.2.0-operating system.bin -options path_to_edited_input_file/  
AE_silent_input.txt -silent
```

Windows

```
P8AE-4.0.2.0-Win.exe -options path_to_edited_input_file\AE_silent_input.txt -  
silent
```

NOTE When installing Application Engine remotely on UNIX, run the installer with the standard input stream redirected from `/dev/console`, for example:

```
rsh remote-machine -n P8AE-4.0.2.0-AIX.bin -options AESilentScriptUNIX.txt -  
silent < /dev/console
```

If you do not add the redirect, the silent intaller will fail with a "process not attached to terminal" message and the usage message for the "who" command.

- Continue with [Step 4](#).
- Complete the Application Engine Installer screens. For information on parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the Data > Filter > AutoFilter command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the Application Engine installation program:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select AE Installer.
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

Use the parameters from your installation preparation tasks to complete the installer screens, as follows:

In the screen for...	Perform this action...
<p>Reading the license agreement</p> <p>NOTE This screen does not appear during a re-install or an upgrade.</p>	<p>Review and accept the license agreement.</p>
<p>Specifying the installation path</p>	<p>For the Installation path field, enter or browse to the location where you want to install the Application Engine software <i>AE_install_path</i>, or accept the default location:</p> <p>UNIX</p> <pre data-bbox="605 793 862 825">/opt/FileNet/AE/</pre> <p>Windows</p> <pre data-bbox="605 898 1052 930">C:\Program Files\FileNet\AE\</pre> <p>The installation program installs the Application Engine software in this path.</p> <p>NOTES</p> <ul data-bbox="605 1077 1373 1339" style="list-style-type: none"> • The installer will use the <i>AE_install_path</i> to place a number of other files in default locations. See: <ul data-bbox="654 1161 1373 1287" style="list-style-type: none"> – “Specifying the configuration directory path” on page 555 – “Specifying the log file location” on page 556. – “Configuring user token security” on page 557 • On an upgrade the default <i>AE_install_path</i> will be: <p>UNIX</p> <pre data-bbox="605 1413 862 1444">/opt/FileNet/</pre> <p>Windows</p> <pre data-bbox="605 1518 1052 1549">C:\Program Files\FileNet\</pre> <ul data-bbox="605 1560 1414 1654" style="list-style-type: none"> • If you select a custom install path, follow the same directory structure as seen in a typical install and retain the <i>/FileNet/AE</i> part of the path.

In the screen for...	Perform this action...
Verifying upgrade NOTE This screen appears only during an upgrade.	The Setup program detects supported older versions of Application Engine. If the installer reports that no supported version of Application Engine exists on your server or if you don't want to upgrade your Application Engine at this time, click Cancel to exit Setup.
Choosing an application server	Select the application server and version from the drop-down lists. These choices must match your Content Engine application server.
Configuring Content Engine API settings	Configure the Content Engine API settings, as follows: <ol style="list-style-type: none"> <li data-bbox="656 720 1435 835"> a. Transport method Select EJB (Enterprise Java Beans) from the drop down list. <li data-bbox="656 856 1435 1140"> b. Content Engine Client software URL: Replace the sample server name and port number (<i>CEserver:2809</i>) with the Content Engine server name and port number for your Content Engine server. NOTE To verify the correct port to use, navigate to the ports section on the application server where Content Engine is deployed and check the <code>BOOTSTRAP_ADDRESS</code> port. NOTE To change the Content Engine name later, or to connect to a different Content Engine, edit the <code>WcmApiConfig.properties</code> file. For information, see the IBM FileNet P8 help topic FileNet P8 Administration > Application Engine Administration > Key configuration files and logs. <li data-bbox="656 1371 1435 1549"> c. Content Engine upload URL Replace the sample server name and port number (<i>CEserver:2809</i>) with the Content Engine server name and port number to use when uploading document content to the Content Engine server. <li data-bbox="656 1570 1435 1740"> d. Content Engine download URL Replace the sample server name and port number (<i>CEserver:2809</i>) with the Content Engine server name and port number for your Content Engine server from which to download document content.

In the screen for...	Perform this action...
Choosing deployment file type and creation time	<p>Choose to have the wizard create the WAR or EAR file during the installation process, or to wait until later.</p> <ul style="list-style-type: none"> Choose Generate a .ear file for deployment if your server can deploy an EAR file. Specify an application name for the EAR file deployment. The default is Workplace. Choose Generate a .war file for deployment if your server can deploy a WAR file. Choose Do not generate a deployment file at this time if you have additional installation and configuration to perform (such as installing Content Engine and Process Engine client files and configuring the application server) that will require another generation of the WAR or EAR file. <p>NOTE If you decide to deploy Application Engine as a WAR file and later decide to redeploy as an EAR file you must uninstall Application Engine and then reinstall the application, selecting EAR file deployment. For information, see “Consider whether changing your deployment type is likely.” on page 548.</p>
Choosing the authentication method	<p>Select the authentication method for use at your site.</p> <ul style="list-style-type: none"> Application-managed authentication uses authentication specific to the application and does not share credentials. Container-managed authentication provides the ability to use single sign-on (SSO) capabilities to share credentials between Application Engine and custom applications. <p>When you select Container-Managed Authentication, Setup installs a sample log-in application, and modifies the <code>web.xml</code> file to support SSO. You will need to perform additional configuration for SSO after Setup is finished.</p>

In the screen for...	Perform this action...
Specifying the documentation URL	<p>Enter the documentation server URL, which is where the IBM FileNet P8 Platform Documentation is installed.</p> <p>Your entry must be in the following format:</p> <pre>http://docserver:port#/ecm_help/</pre> <p>where:</p> <p><i>docserver</i> is the name of the Java application server.</p> <p><i>port#</i> is the port number.</p> <p><i>ecm_help</i> is the root folder of the documentation website. You can use multi-part root folders (for example, /docs/ecm_help) if your application server supports them.</p> <p>See "Install IBM FileNet P8 Platform documentation (All)" on page 23 for more information.</p> <p>NOTE For information on how to reconfigure the documentation URL after installation is completed, see the IBM FileNet P8 help topic FileNet P8 Administration > Application Engine Administration > Key configuration files and logs > Bootstrap properties.</p>

In the screen for...	Perform this action...
Specifying the configuration directory path	<p>Accept the default location or browse to the location where you want to store the configuration files.</p> <p>The default location for the configuration files is in a separate <code>Config</code> directory one level up from the <code>AE_install_path</code> directory selected earlier.</p> <p>Default location of the configuration directory:</p> <p>UNIX</p> <pre>/opt/FileNet/Config/</pre> <p>Windows</p> <pre>C:\Program Files\FileNet\Config\</pre> <p>CAUTION A UNC admin share (for example, <code>\\server\C\$</code>) for a shared location is not supported. You can use an ordinary file share.</p> <p>NOTES</p> <ul style="list-style-type: none"> • If you select a custom install location, follow the same directory structure as seen in a typical install and retain the <code>/FileNet/Config/AE</code> part of the path. • The configuration files for an EAR file deployment, a web farm, or a clustered environment must be located in a shared folder that is accessible by all copies of the Workplace application. For more information, see the <i>IBM FileNet P8 Platform High Availability Technical Notice</i>. To download this guide from the IBM support page, see “Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.
Specifying the upload location	<p>Provide the upload directory path.</p> <p>The upload directory is the directory used by Workplace to store temporary copies of files uploaded to Workplace.</p> <p>Accept the default option or browse for a directory to hold the temporary upload files.</p> <p>CAUTION A UNC admin share (for example, <code>\\server\C\$</code>) for a shared upload directory location is not supported. You can use an ordinary file share.</p>

In the screen for...	Perform this action...
Specifying the download location	<p>Provide the download directory path.</p> <p>The download directory is the directory used by Workplace to store temporary copies of files downloaded from Workplace.</p> <p>Accept the default option or browse for a directory to hold the temporary download files.</p> <p>CAUTION A UNC admin share (for example, <code>\\server\C\$</code>) for a shared download directory is not supported. You can use an ordinary file share.</p>
Specifying the log file location	<p>Provide the Log files directory path.</p> <p>The Log file path is the directory used by the installer to store the <code>app_engine_install_log_4_0_2.txt</code> log file.</p> <p>Accept the default option or browse for a directory.</p> <p>The default location for the log files is in a separate <code>Logs</code> directory one level up from the <code>AE_install_path</code> directory selected earlier.</p> <p>Default location of the logs directory:</p> <p>UNIX</p> <pre>/opt/FileNet/AE/Logs/</pre> <p>Windows</p> <pre>C:\Program Files\FileNet\AE\Logs\</pre> <p>NOTE If you select a custom install location, follow the same directory structure as seen in a typical install and retain the <code>/FileNet/Logs</code> part of the path.</p>

In the screen for...	Perform this action...
Configuring user token security	<p>Configure user token security.</p> <ol style="list-style-type: none"> If needed, select the check box to create maximum strength keys. By default the installer creates limited strength keys. Enter the number of keys to use, from 1-100. NOTE Security generally increases with the number of keys used. Make a note of the user token crypto key path. The <code>UTCryptoKeyFile.properties</code> file contains the user token cryptography key used by IBM FileNet P8 applications to launch into each other without the need for additional login. The default location for the User Token Crypto Key file is in a separate <code>Authentication</code> directory one level up from the <code>AE_install_path</code> directory selected earlier. Default location of the Authentication directory: UNIX <code>/opt/FileNet/Authentication/</code> Windows <code>C:\Program Files\FileNet\Authentication\</code> NOTE If you select a custom install location it is recommended to follow the same directory structure as seen in a typical install and retain the <code>/FileNet/Authentication</code> part of the path. CAUTION For multiple applications to pass user tokens to each other, each participating application must use the same encryption key file. Copy the <code>UTCryptoKeyFile.properties</code> file installed with Application Engine to all servers that are hosting a token-sharing application. For information, see the IBM FileNet P8 Developer Help topic Developer Help > Workplace Integration and Customization Introduction > User Tokens > Configuring Applications to Use Tokens.
Verifying your installation selections	Review the list of selections you have made. You may need to scroll to see all selections.
Starting the installation	Review the installation summary, and click Install .

In the screen for...	Perform this action...
Completing Application Engine setup	Click Finish to complete the installation.

4. View the `app_engine_install_log_4_0_2.txt` file located, located in `AE_install_path/AE/Logs`.

Verify that no errors or failures were logged. Look for the ERROR designation at the start of a line. Correct any errors before you proceed.

5. (Optional, UNIX only) Set the the `P8TASKMAN_HOME` system environment variable.

The Process Engine Client installer will set this variable for you. If you want to specify a different location for the client files, you can do so by setting the `P8TASKMAN_HOME` system variable. The default value set by the PE Client installer is:

```
P8TASKMAN_HOME=AE_install_path/CommonFiles
```

6. Continue with [“Install Application Engine software updates”](#) on page 563.

Task 2b: Upgrade Application Engine from 4.0.x

This topic includes Application Engine installation instructions for all supported application servers, for UNIX and Windows platforms.

NOTES

- If you plan to install and use the IBM FileNet Workplace XT product, installing Application Engine is not required.
- Before installing Application Engine, check the latest version of the IBM *FileNet P8 4.5 Release Notes* for known issues that might impact this software installation. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- Make sure your installation location meets the requirements specific for Application Engine outlined in the *IBM FileNet P8 Hardware and Software Requirements*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- The installer creates the folder structure and files needed for Application Engine.
- Switching from WAR file to EAR file deployment.

If a change of deployment type seems likely for your setup in the future, especially if you think you might switch from a WAR file to an EAR file deployment, it is easier if you always install Application Engine as if you intend to deploy an EAR file. This approach works best because it always creates both a WAR and an EAR file, meaning you have a ready WAR file for a switch.

Otherwise, if you deploy Application Engine initially as a WAR file and later decide to redeploy as an EAR file, you will have to uninstall Application Engine and then reinstall the application, selecting EAR file deployment, to add the required files to your setup.

- (Highly Available installations) To install Application Engine in a web farm or clustered environment, follow the instructions in the *IBM FileNet P8 Platform High Availability Technical Notice*. The document outlines the required HA install procedure and references this guide for detailed installation and deployment instructions. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)
- To ensure proper functionality and performance, only install one instance of Application Engine per application server (or virtual machine or WebSphere LPAR). You can, however, deploy multiple instances of a single Application Engine version per application server, see [“Deploy multiple Application Engine instances” on page 295.](#)
- Before logging on to Workplace for the first time, at least one object store must exist on the Content Engine to hold the site preferences. See [“Create the initial object store” on page 133](#) for more information.
- If you run the installer to upgrade Application Engine, the installer verifies that the currently installed version of Application Engine can be upgraded. See [“Prepare for Application Engine upgrade” on page 544](#) for more information.

To install the Application Engine software

1. Log on to the application server:

UNIX

Log on as a user with read, write, and execute access to the directory where you plan to install Application Engine.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions.

NOTE Although the installing user must have write access to the `/bin` directory, the Application Engine installer does not write to that directory.

2. Start the installation process.

- To install Application Engine interactively:
 - i. Access the IBM FileNet Application Engine 4.0.2 installation software.
 - ii. Launch the appropriate Setup program (`P8AE-4.0.2.0-operating_system.bin/.exe`) and continue with [Step 3 on page 561](#) below.
- To install Application Engine silently:
 - i. Access the IBM FileNet Application Engine 4.0.2 installation software package, and copy the `AE_silent_input.txt` file to a local directory.
 - ii. Follow the instructions in the silent input file to edit the file to reflect the appropriate responses for your installation.

CAUTION If you are modifying the silent input file to perform an upgrade from AE 3.5.x to AE 4.0.2 you must modify all instances of `AE_install_path` in the script as follows:

UNIX

Change `../FileNet/AE` to `../FileNet`

Windows

Change `..\FileNet\AE` to `..\FileNet`

Change `..\FileNet\AE` to `..\FileNet`

- iii. From a command prompt, navigate to, and execute the installer, then continue with [Step 4 “View the `app_engine_install_log_4_0_2.txt` file located, located in `AE_install_path/Logs`.” on page 561.](#)

UNIX

```
./P8AE-4.0.2.0-<operating system>.bin -options <path_to_edited_input_file>/
AE_silent_input.txt -silent
```

Windows

```
P8AE-4.0.2.0-Win.exe -options <path_to_edited_input_file>\AE_silent_input.txt
-silent
```

3. Complete the Application Engine Installer screens. For information on parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the Data > Filter > AutoFilter command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the Application Engine installation program:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select AE Installer.
- Click the AutoFilter drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Upgrade."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

In addition to the prompts for system-specific information, you will need to consider the following decisions:

- You can choose to deploy Application as a WAR file or an EAR file. If you decide to deploy Application Engine as a WAR file and later decide to redeploy as an EAR file you must uninstall Application Engine and then reinstall the application, selecting EAR file deployment. For information, see ["Switching from WAR file to EAR file deployment." on page 559](#).
 - Additional installation notes:
 - To change the Content Engine name later, or to connect to a different Content Engine, edit the `WcmApiConfig.properties` file. For information, see the IBM FileNet P8 help topic [FileNet P8 Administration > Application Engine Administration > Key configuration files and logs](#).
 - For information on how to reconfigure the Documentation URL after installation is completed, see the IBM FileNet P8 help topic [FileNet P8 Administration > Application Engine Administration > Key configuration files and logs > Bootstrap properties](#).
 - The `UTCryptoKeyFile.properties` file contains the user token cryptography key used by IBM FileNet P8 applications to launch into each other without the need for additional login.

CAUTION For multiple applications to pass user tokens to each other, each participating application **must** use the same encryption key file. Copy the `UTCryptoKeyFile.properties` file installed with Application Engine to all servers that are hosting a token-sharing application.

For information, see the IBM FileNet P8 Developer Help topic [Developer Help > Workplace Integration and Customization Introduction > User Tokens > Configuring Applications to Use Tokens](#).

4. View the `app_engine_install_log_4_0_2.txt` file located, located in `AE_install_path/Logs`.

Verify that no errors or failures were logged. Correct any errors before you proceed.

5. (Optional; UNIX only) Set the the P8TASKMAN_HOME system environment variable.

The Process Engine Client installer will set this variable for you. If you want to specify a different location for the client files, you can do so by setting the P8TASKMAN_HOME system variable. The default value set by the PE Client installer is:

```
P8TASKMAN_HOME=AE_install_path/CommonFiles
```

6. Continue with ["Install Application Engine software updates"](#) on page 563.

Task 3: Install Application Engine software updates

Install any fix packs and interim fixes required for Application Engine.

To install the Application Engine software updates

1. To download the latest software updates, and to determine which of these updates may be required for use with other components and expansion products, contact your support representative.
2. Open the readmes for any subsequent fix packs or interim fixes (typically optional) and perform the installation procedures provided.
3. Install the latest updates for the Content Engine Client and Process Engine Client files using the subsequent tasks.

Task 4: Install the latest Content Engine Client files on Application Engine servers

To install the Content Engine Client files, perform the following steps on all servers where Application Engine Server has been upgraded and is to be deployed.

IMPORTANT Your Content Engine Client version must match your Content Engine server version, unless otherwise noted in the *FileNet P8 Compatibility Matrix*. Install the latest 4.5 Content Engine Client files as documented in this topic only when you are ready to upgrade Content Engine servers to 4.5.

In a staged upgrade from 4.0, you might run upgraded Application Engine 4.0.2 servers with Content Engine 4.0 servers for some period of time. In this case, install the latest 4.0 Content Engine Client files. For detailed instructions, see the latest 4.0 version of the *IBM FileNet P8 Installation and Upgrade Guide* on the IBM Web site.

To uninstall CE Client 4.0.x instances

Perform the following procedure to identify and uninstall all Content Engine Client version 4.0.x files on an Application Engine Server machine. Repeat the procedure for all other Application Engine Server machines.

Depending on the CE Client fixpack versions that you have installed, you may have more than one instance of the CE Client 4.0.x installed. Additionally, the version 4.0.x CE Client installer supported installing multiple instance of the CE Client on the same server. You need to uninstall all instances before upgrading to the 4.5 version of CE Client.

- Locate and uninstall all instances of the CE Client on the Application Engine server.

Windows

- a. Select **Start > Settings > Control Panel > Add/Remove Programs**.
- b. Select **Content Engine Client Updater** or **IBM FileNet Content Engine Client Installer**, depending on the fixpack version of Content Engine Client that is installed.

Prior to fix pack P8CE-4.0.1-006: The Content Engine Client is named Content Engine Client Updater.

As of fix pack P8CE-4.0.1-006: The Content Engine Client is named IBM FileNet Content Engine Client Installer.

- c. Click **Change/Remove** to start the uninstaller.
- d. In the Uninstall IBM FileNet Client Installer screen, click **Next**.
- e. In the Select Components screen, select Complete Uninstall. Click **Next**.
- f. In the Uninstall Complete screen, click **Done**.
- g. Repeat [Step b](#) through [Step f](#) for each additional instance of **Content Engine Client Updater** or **IBM FileNet Content Engine Client Installer** listed in Add/Remove Programs.

UNIX

- a. Run one of the following commands, depending on the fixpack version of Content Engine Client that is installed.

```
/ce_client_install_path/ClientUpdater/_uninst/uninstaller.bin
```

```
/ce_client_install_path/CEClient/_CEClientuninst/uninstaller
```

Prior to fix pack P8CE-4.0.1-006: The Content Engine Client files are in a directory called ClientUpdater, and the uninstallation program is .../ClientUpdater/_uninst/uninstaller.bin.

As of fix pack P8CE-4.0.1-006: The Content Engine Client files are in a directory called CEClient and the uninstallation program is .../CEClient/_CEClientuninst/uninstaller.

- b. In the Uninstall IBM FileNet Client Installer screen, click **Next**.
- c. In the Select Components screen, select Complete Uninstall. Click **Next**.
- d. In the Uninstall Complete screen, click **Done**.
- e. Repeat [Step a](#) through [Step d](#) for each installed instance of CE Client on this server.

To install the 4.5 release or fix pack version Content Engine Client files, perform the following procedures on all Application Engine servers. Most steps apply to both new installations and updates. However, some noted steps apply only to updates of the Content Engine Client files to a previously configured Application Engine installation. Except where noted, these steps apply to WebSphere, WebLogic, and JBoss.

To install the Content Engine Client files

Refer to the appropriate information from your installation worksheet while performing the following steps. For information about the Content Engine parameter values, see ["Installation and upgrade worksheet"](#) on page 229 in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT Verify that the **Data > Filter > AutoFilter** command is enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`). Do the following steps to quickly see only the installation properties you must specify for the Content Engine installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select CE Client installer.
 - Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
1. To download the latest software updates, and to determine which of these updates might be required for use with other components and expansion products, contact your service representative.
 2. Log on to the server where Application Engine is installed as any user who has the following permissions:

- Read and write permission to a temporary directory, such as `temp` (Windows) or `tmp` (UNIX), on the machine where Application Engine is installed
 - Execute permission on the Content Engine Client install software
3. (For update installations only) Verify that there is a current backup of the Application Engine.
 4. Copy the Content Engine Client install software from the Content Engine installation software to the temporary directory. The version of the install software must match the version of Content Engine.
 5. Expand the (TAR or ZIP) Content Engine Client install software within the temporary directory.
 6. (For update installations only) Close all instances of Workplace and any other Application Engine client applications. From the application server administrative console, stop and undeploy Application Engine.

WebSphere

Stop and undeploy the FileNet Application Engine application.

WebLogic

Stop and undeploy the FileNet Application Engine application.

JBoss

Execute the shutdown command.

7. (WebLogic only) Manually delete the following application server cache directories, substituting your domain name in place of *mydomain*:

WebLogic UNIX

```
/opt/BEA/user_projects/domains/mydomain/servers/AdminServer/tmp/_WL_user/app_engine
```

```
/opt/BEA/user_projects/domains/mydomain/servers/.wlnotdelete
```

```
/opt/BEA/user_projects/domains/mydomain/servers/AdminServer/cache/EJBCompilerCache
```

WebLogic Windows

```
C:\BEA\user_projects\domains\mydomain\servers\AdminServer\tmp\_WL_user\app_engine
```

```
C:\BEA\user_projects\domains\mydomain\servers\.wlnotdelete
```

```
C:\BEA\user_projects\domains\mydomain\servers\AdminServer\cache\EJBCompilerCache
```

8. Start the Content Engine Client install process.
 - To install the Content Engine Client interactively:
 - i. Navigate to the IBM FileNet Content Engine Client software in the temporary directory.

- ii. Run one of the commands in the following table, where *CE_version* is the version of Content Engine you intend to run, for example, 4.5.0.

Operating System	Install Program
AIX	P8CE-CLIENT- <i>CE_version</i> -AIX.BIN
HPUX	P8CE-CLIENT- <i>CE_version</i> -HPUX.BIN
HPUXi	P8CE-CLIENT- <i>CE_version</i> -HPUXI.BIN
Linux	P8CE-CLIENT- <i>CE_version</i> -LINUX.BIN
Solaris	P8CE-CLIENT- <i>CE_version</i> -SOL.BIN
Windows	P8CE-CLIENT- <i>CE_version</i> -WIN.EXE
zLinux	P8CE-CLIENT- <i>CE_version</i> -ZLINUX.BIN

- iii. Complete the installation program wizard, using the following table.

In this screen...	Perform this action...
Welcome	<p>Click Next to proceed with the Content Engine Client installation.</p> <p>NOTE Click Back at any time while running the Content Engine Client installer to change any previous entries. Click Cancel to exit the Content Engine Client installer.</p>
Specify Content Engine Client Installation Path	<p>Specify the complete path where you want the Content Engine Client program files installed. The defaults are as follows:</p> <p>UNIX</p> <p>/opt/FileNet/CEClient</p> <p>Windows</p> <p>C:\Program Files\FileNet\CEClient</p> <p>Click Next to continue.</p>
Select FileNet P8 Applications	<p>Select Application Engine, and click Next to continue.</p>
Application Engine Installation Path	<p>Enter the full path to the Application Engine installation location. The defaults are as follows:</p> <p>UNIX</p> <p>/opt/FileNet/AE</p> <p>Windows</p> <p>C:\Program Files\FileNet\AE</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Content Engine Application Server	<p>Select the Content Engine application server type from the list. Valid choices are:</p> <ul style="list-style-type: none"> • WebSphere • WebLogic • JBoss <p>Click Next to continue.</p>
Specify URLs for EJB Transport	<p>Specify the URLs for the Content Engine Enterprise JavaBeans (EJB) API.</p> <ul style="list-style-type: none"> • Content Engine Client Software URL <p>The URL for the Content Engine Web Services client API. This URL contains the WcmApiConfig.properties file. Applications require this file to communicate with Content Engine Server through the EJB method or the Web Services transport method.</p> <p>The default is: cemp:iiop//CEServer:2809/FileNet/Engine</p> • Content Engine upload URL <p>The upload URL is used for internal processes during EJB transport activities.</p> <p>The default is: cemp:iiop//CEServer:2809/FileNet/Engine</p> • Content Engine download URL <p>The download URL is used for internal processes during EJB transport activities.</p> <p>The default is: cemp:iiop//CEServer:2809/FileNet/Engine</p> <p>Click Next to continue.</p>

In this screen...	Perform this action...
Specify URL for WSI Transport	<p>The URL for the Content Engine Web Services client API. The API contains the WcmApiConfig.properties file. Applications require this file to communicate with Content Engine Server, either with the EJB method or the Web Services transport method.</p> <p>The default is: cemp:http://CEServer:9080/wsi/FNCEWS40DIME/</p> <p>Click Next to continue.</p>
Create Deployment File	<p>Specify whether the installer creates the deployment file for your application. If you have additional configuration to perform, you can create the deployment file manually later on. Select one of the following choices:</p> <ul style="list-style-type: none"> • Have the installer create the file. • Create the file later. <p>Click Next to continue.</p>
Review Pre-Installation Summary	<p>Verify your component selections, and click Install to start installing Content Engine Client.</p>

- To install the Content Engine Client files silently:
 - Make a backup copy of the `CEClient_silent_install.txt` input file, located in the software directory.
 - Open `CEClient_silent_install.txt` in a text editor. Follow the instructions in the silent input file to edit the entries to reflect the appropriate responses for your install or update.

- iii. Navigate to the path containing the Content Engine Client installation program. From that directory, run one of the commands in the following table to perform the silent install, where:

CE_version is the version of Content Engine you intend to run, for example, 4.5.0.

path is the path that contains the installation program.

Operating System	Install Program
AIX	P8CE-CLIENT- <i>CE_version</i> -AIX.BIN -f <i>path</i> /CECLIENT.AIX/ CEClient_silent_install.txt -i silent
HPUX	P8CE-CLIENT- <i>CE_version</i> -HPUX.BIN -f <i>path</i> /CEClient.HPUX/ CEClient_silent_install.txt -i silent
HPUXi	P8CE-CLIENT- <i>CE_version</i> -HPUXI.BIN -f <i>path</i> /CEClient.HPUXI/ CEClient_silent_install.txt -i silent
Linux	P8CE-CLIENT- <i>CE_version</i> -LINUX.BIN -f <i>path</i> /CEClient.Linux/ CEClient_silent_install.txt -i silent
Solaris	P8CE-CLIENT- <i>CE_version</i> -SOL.BIN -f <i>path</i> /CEClient.Solaris/ CEClient_silent_install.txt -i silent
Windows	P8CE-CLIENT- <i>CE_version</i> -WIN.EXE -f <i>path</i> \CEClient.Windows\ CEClient_silent_install.txt -i silent
zLinux	P8CE-CLIENT- <i>CE_version</i> -ZLINUX.BIN -f <i>path</i> /CEClient.zLinux/ CEClient_silent_install.txt -i silent

9. Install Process Engine client updates on the Application Engine. Continue at [“Install the Latest Process Engine Client files on Application Engine servers” on page 571](#).

NOTE If you performed this CE Client install task during a staged upgrade of Content Engine, and have previously upgraded Application Engine to 4.0.2, your next step is to re-deploy the Workplace application. See one of the following topics:

- [“Deploy upgraded Application Engine instances \(WebSphere\)” on page 595](#)
- [“Deploy upgraded Application Engine instances \(WebLogic\)” on page 598](#)
- [“Deploy upgraded Application Engine instances \(JBoss\)” on page 600](#)

Task 5: Install the Latest Process Engine Client files on Application Engine servers

IMPORTANT Your Process Engine Client version must match your Process Engine server version, unless otherwise noted in the *FileNet P8 Compatibility Matrix*. Install the latest 4.5 Process Engine Client files as documented in this topic only when you are ready to upgrade Process Engine servers to 4.5.

In a staged upgrade from 4.0, you might run upgraded Application Engine 4.0.2 servers with Process Engine 4.0 servers for some period of time. In this case, install the latest 4.0 Process Engine Client files. For detailed instructions, see the latest 4.0 version of the *IBM FileNet P8 Installation and Upgrade Guide* on the IBM Web site.

To install the Process Engine Client files, perform the following steps on all Application Engine servers.

For both interactive and silent installs, refer to the appropriate information from your installation worksheet while performing the following steps. For information on the Process Engine parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the **Data > Filter > AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following steps to quickly see only the installation properties you must specify for the Process Engine client installation program:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select PE Client installer.
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
- Click the AutoFilter drop-down arrow in all other column headers and select (All).

To install the Process Engine client files

1. On the machine where Application Engine is to be deployed, log on as any user who has the following permissions:
 - Read and write permission to a temporary directory, such as `temp` (Windows) or `tmp` (UNIX), on the machine where Application Engine is installed
 - Execute permission on the Process Engine Client install software
2. Copy the Process Engine Client install software from the Process Engine installation software to the temporary directory. The version of the install software must match the version of Process Engine.
3. Expand the (TAR or ZIP) Process Engine Client install software within the temporary directory. The `jre.tar` file that is packaged with the Process Engine Client installer must be in the same directory as the Process Engine Client installer when the installer is run.

- The expanded install software contains the Process Engine Client install program specific to the operating system on the machine where Application Engine is deployed. Run the program either interactively (using the install wizard) or silently.

To run the program interactively, run one of the commands in the table below, follow the wizard instructions, and then continue at step 5:

Operating System	Install Program
AIX	P8PE-CLIENT-4.5.0-AIX.BIN
HPUX	P8PE-CLIENT-4.5.0-HPUX.BIN
HPUXi	P8PE-CLIENT-4.5.0-HPUXI.BIN
Linux	P8PE-CLIENT-4.5.0-LINUX.BIN
Solaris	P8PE-CLIENT-4.5.0-SOL.BIN
Windows	P8PE-CLIENT-4.5.0-WIN.EXE
zLinux	P8PE-CLIENT-4.5.0-ZLINUX.BIN

- Complete the Process Engine client installer screens, as follows:

In this screen...	Perform this action...
Welcome to Process Engine Client Installer	Click Next to proceed with the installation. NOTE Click Previous at any time to make changes in previous screens. Click Cancel to exit the program.
Specify Installation Location	Choose the destination directory for Process Engine Client log files and uninstallation files. Accept the default location or click Browse to change the location.
Select FileNet P8 Applications	Select Application Engine as the product for which you would like to install Process Engine Client files. Click Next to continue.
Application Engine Installation Path	Enter the full path to the Application Engine installation location. The defaults are as follows: UNIX /opt/FileNet/AE Windows C:\Program Files\FileNet\AE Click Next to continue.

In this screen...	Perform this action...
Specify the URL for the Component Manager	Enter the URL that the Component Manager uses to connect to the Content Engine using Web Services transport. The default is: <code>http://CEServer:port/wsi/FNCEWS40DIME/</code>
Specify the Documentation URL	Enter the URL where the IBM FileNet P8 Platform Documentation is installed. Use the following format: <code>http://docserver:port#/ecm_help</code> where: <i>docserver</i> is the name of the Java web server. <i>port#</i> is the port number. <i>ecm_help</i> is the root folder of the documentation web site. You can use multi-part root folders, for example, /docs/ecm_help, if your application server supports them.
Specify when to create the deployment file	Indicate whether to create the WAR or EAR deployment file now or later. If you have additional configuration to perform, you can create the deployment file manually later.
Stop running BPM software	If the installer detects running BPM software components, click Next to stop the software and continue with the installation.
Review Pre-Installation Summary	Verify your component selections, and click Install to start installing Process Engine Client.

To run the program silently, perform the following steps:

- a. In the expanded install software, open the file `PEClient_silent_install.txt` and edit it as follows:
 - i. Change the `Variable_CheckboxAE` line to the following:
`-V Variable_CheckboxAE="true"`
 - ii. Run one of the commands in the following table to perform the silent install:

Operating System	Install Program
AIX	<code>P8PE-CLIENT-4.5.0-AIX.BIN -silent -options "PEClient_silent_install.txt"</code>
HPUX	<code>P8PE-CLIENT-4.5.0-HPUX.BIN -silent -options "PEClient_silent_install.txt"</code>
HPUXi	<code>P8PE-CLIENT-4.5.0-HPUXI.BIN -silent -options "PEClient_silent_install.txt"</code>
Linux	<code>P8PE-CLIENT-4.5.0-LINUX.BIN -silent -options "PEClient_silent_install.txt"</code>

Operating System	Install Program
Solaris	P8PE-CLIENT-4.5.0-SOL.BIN -silent -options "PEClient_silent_install.txt"
Windows	P8PE-CLIENT-4.5.0-WIN.EXE -silent -options "PEClient_silent_install.txt"
zLinux	P8PE-CLIENT-4.5.0-ZLINUX.BIN -silent -options "PEClient_silent_install.txt"

6. (For Process Engine upgrades from PE 4.0.x to 4.5 only) Add required JAR files to the Component Manager library.

a. Launch the Process Task Manager by running one of the following command files from the *AE_install_path/FileNet/AE/Router* directory, depending on your operating system:

UNIX

`routercmd.sh`

Windows

`routercmd.bat`

b. In the Process Task Manager console, under Application Engine, Component Manager node, select your connection point.

c. Stop the connection point instance.

d. Click the Required libraries tab.

e. Click Add, and browse to `/Router/lib`.

f. Select the following files to add:

`ContentExtendedOps.jar`

`smtp.jar`

7. (For upgrades from 3.5.x only) Configure Application Engine.

Follow the instructions for your application server to configure Application Engine:

- [“Configure Application Engine upgrades from 3.5.x \(WebSphere\)” on page 576](#)
- [“Configure Application Engine upgrades from 3.5.x \(WebLogic\)” on page 585](#)
- [“Configure Application Engine upgrades from 3.5.x \(JBoss\)” on page 591](#)

8. (For upgrades from 4.0.x only) Continue with [“Manually copy custom data” on page 594](#).

NOTE If you performed this PE Client install task during a staged upgrade of Process Engine, and have previously upgraded Application Engine to 4.0.2, your next step is to re-deploy the Workplace application. See one of the following topics:

- [“Deploy upgraded Application Engine instances \(WebSphere\)” on page 595](#)
- [“Deploy upgraded Application Engine instances \(WebLogic\)” on page 598](#)
- [“Deploy upgraded Application Engine instances \(JBoss\)” on page 600](#)

Task 6a: Configure Application Engine upgrades from 3.5.x (WebSphere)

To use the Application Engine web application (Workplace), you must first configure the application to work with your application server. Use the following procedures to configure Workplace. Not all procedures apply to all installations. Do the procedures that apply to your installation in the order presented here.

To edit web.xml for container-managed authentication or SSO

NOTE Perform this procedure only if your site uses WebSphere with container-managed authentication or Single Sign-On (SSO). If you are using SSO, you must perform additional configuration steps as directed at the end of this procedure.

1. Make a back-up copy of web.xml.

```
AE_install_path/Workplace/WEB-INF/web.xml
```

2. Edit web.xml.

NOTE Text in **bold** in the following examples indicates changes made to the original web.xml file.

- a. Search for the parameter challengeProxyEnabled and set it to false.

```
<param-name>challengeProxyEnabled</param-name>  
<param-value>false</param-value>
```

- b. Search for the first instance of <web-resource-collection>, and uncomment the url-pattern as noted in the file comments.

```
<web-resource-collection>  
  <web-resource-name>action</web-resource-name>  
  <description>Define the container secured resource</description>  
  <url-pattern>/containerSecured/*</url-pattern>  
  
  <!--
```

```
      Uncomment this section if all resources that require credentials  
      must be secured in order to obtain a secured Thread. If using WebSphere,  
      this section must be  
      uncommented.
```

```
--> Move this commenting tag here from just before the </web-resource-  
collection> closing tag below.
```

```
<url-pattern>/containerSecured/*</url-pattern>  
<url-pattern>/</url-pattern>  
<url-pattern>/author/*</url-pattern>  
<url-pattern>/Browse.jsp</url-pattern>  
<url-pattern>/eprocess/*</url-pattern>  
<url-pattern>/Favorites.jsp</url-pattern>  
<url-pattern>/GetPortalSitePreferences.jsp</url-pattern>  
<url-pattern>/GetTokenSignIn.jsp</url-pattern>  
<url-pattern>/GetUserInformation.jsp</url-pattern>  
<url-pattern>/GetUserToken.jsp</url-pattern>  
<url-pattern>/HomePage.jsp</url-pattern>  
<url-pattern>/IntegrationWebBasedHelp.jsp</url-pattern>  
<url-pattern>/is/*</url-pattern>  
<url-pattern>/operations/*</url-pattern>
```

```

<url-pattern>/portlets/Author/edit.jsp</url-pattern>
<url-pattern>/portlets/Author/portlet.jsp</url-pattern>
<url-pattern>/portlets/Browse/edit.jsp</url-pattern>
<url-pattern>/portlets/Browse/portlet.jsp</url-pattern>
<url-pattern>/portlets/ExternalUrl/edit.jsp</url-pattern>
<url-pattern>/portlets/ExternalUrl/portlet.jsp</url-pattern>
<url-pattern>/portlets/GroupPageDesign.jsp</url-pattern>
<url-pattern>/portlets/GroupPageSettings.jsp</url-pattern>
<url-pattern>/portlets/Inbox/edit.jsp</url-pattern>
<url-pattern>/portlets/Inbox/portlet.jsp</url-pattern>
<url-pattern>/portlets/MultiPagesDesign.jsp</url-pattern>
<url-pattern>/portlets/OrganizePages.jsp</url-pattern>
<url-pattern>/portlets/PortalPageDesign.jsp</url-pattern>
<url-pattern>/portlets/PortalPageInfo.jsp</url-pattern>
<url-pattern>/portlets/PortletAlias.jsp</url-pattern>
<url-pattern>/portlets/PortletSettings.jsp</url-pattern>
<url-pattern>/portlets/PreviewAndSetup.jsp</url-pattern>
<url-pattern>/portlets/PublicQueue/edit.jsp</url-pattern>
<url-pattern>/portlets/PublicQueue/portlet.jsp</url-pattern>
<url-pattern>/portlets/QuickSearch/edit.jsp</url-pattern>
<url-pattern>/portlets/QuickSearch/portlet.jsp</url-pattern>
<url-pattern>/portlets/Workflows/edit.jsp</url-pattern>
<url-pattern>/portlets/Workflows/portlet.jsp</url-pattern>
<url-pattern>/properties/*</url-pattern>
<url-pattern>/redirect/*</url-pattern>
<url-pattern>/regions/*</url-pattern>
<url-pattern>/Search.jsp</url-pattern>
<url-pattern>/select/*</url-pattern>
<url-pattern>/SelectReturn.jsp</url-pattern>
<url-pattern>/Tasks.jsp</url-pattern>
<url-pattern>/UI-INF/*</url-pattern>
<url-pattern>/utils/*</url-pattern>
<url-pattern>/WcmAdmin.jsp</url-pattern>
<url-pattern>/WcmAuthor.jsp</url-pattern>
<url-pattern>/WcmBootstrap.jsp</url-pattern>
<url-pattern>/WcmCloseWindow.jsp</url-pattern>
<url-pattern>/WcmDefault.jsp</url-pattern>
<url-pattern>/WcmError.jsp</url-pattern>
<url-pattern>/WcmJavaViewer.jsp</url-pattern>
<url-pattern>/WcmObjectBookmark.jsp</url-pattern>
<url-pattern>/WcmPortletHelp.jsp</url-pattern>
<url-pattern>/WcmPortletSearch.jsp</url-pattern>
<url-pattern>/WcmQueueBookmark.jsp</url-pattern>
<url-pattern>/WcmSignIn.jsp</url-pattern>
<url-pattern>/WcmSitePreferences.jsp</url-pattern>
<url-pattern>/WcmUserPreferences.jsp</url-pattern>
<url-pattern>/WcmWorkflowsBookmark.jsp</url-pattern>
<url-pattern>/wizards/*</url-pattern>
<url-pattern>/Author/*</url-pattern>
<url-pattern>/axis/*.jws</url-pattern>
<url-pattern>/Browse/*</url-pattern>
<url-pattern>/ceTunnel</url-pattern>
<url-pattern>/CheckoutList/*</url-pattern>
<url-pattern>/downloadMultiTransferElement/*</url-pattern>
<url-pattern>/ExternalUrl/*</url-pattern>
<url-pattern>/findRecordTarget</url-pattern>
<url-pattern>/formCallback/*</url-pattern>
<url-pattern>/getAnnotSecurity/*</url-pattern>
<url-pattern>/getCEAnnotations/*</url-pattern>
<url-pattern>/getContent/*</url-pattern>
<url-pattern>/getForm/*</url-pattern>
<url-pattern>/getISAnnotations/*</url-pattern>
<url-pattern>/getISAnnotSecurity/*</url-pattern>
<url-pattern>/getISContent/*</url-pattern>
<url-pattern>/getMultiContent/*</url-pattern>
<url-pattern>/getPreview</url-pattern>
    
```

```

<url-pattern>/getProcessor/*</url-pattern>
<url-pattern>/getRealms/*</url-pattern>
<url-pattern>/getUsersGroups/*</url-pattern>
<url-pattern>/Inbox/*</url-pattern>
<url-pattern>/integrationCommandProxy</url-pattern>
<url-pattern>/integrationResponse</url-pattern>
<url-pattern>/integrationResponseProxy</url-pattern>
<url-pattern>/integrationWebBasedCommand</url-pattern>
<url-pattern>/keepAlive</url-pattern>
<url-pattern>/launch/*</url-pattern>
<url-pattern>/PublicQueue/*</url-pattern>
<url-pattern>/putContent/*</url-pattern>
<url-pattern>/QuickSearch/*</url-pattern>
<url-pattern>/signingServlet/*</url-pattern>
<url-pattern>/transport/*</url-pattern>
<url-pattern>/upload/*</url-pattern>
<url-pattern>/vwsimsoapservlet</url-pattern>
<url-pattern>/vwsoaprouter</url-pattern>
<url-pattern>/Workflows/*</url-pattern>
    Move the closing comment tag from
    here to the location indicated at the beginning of this example.
</web-resource-collection>
    
```

- c. Locate the section <auth-constraint>, comment the wildcard (*) role-name as noted in the file comments.

```

<auth-constraint>
  <!-- <role-name>*</role-name> -->
  <!-- For WebSphere 6, use the role-name line below instead of the wildcard role
  above.-->

  <role-name>All Authenticated</role-name>

  <!-- For WebSphere 6, add this security-role element below the login-config
  element (below).
  <security-role>
    <description>All Authenticated</description>
    <role-name>All Authenticated</role-name>
  </security-role>
  -->
</auth-constraint>
    
```

- d. Locate the end of the </login-config> element, and add the All Authenticated users role-element after the closing tag.

```

<security-role>
  <description>All Authenticated</description>
  <role-name>All Authenticated</role-name>
</security-role>
    
```

- e. Search for the first instance of a <security-constraint> tag, and add the following <security-constraint> tag before that tag.

IMPORTANT Enter the following information as single lines without line breaks.

```

<security-constraint>
  <web-resource-collection>
    <web-resource-name>action</web-resource-name>
    <description>Define the non-secured resource</description>
    <url-pattern>/P8BPMWSBroker/*</url-pattern>
  </web-resource-collection>
</security-constraint>
    
```

3. Save your changes to web.xml and close the file.

4. If your site uses SSO, continue on with “(SSO Only) To edit web.xml for SSO (optional)” on page 579. Otherwise continue with “To configure Application Engine (WebSphere)” on page 580.

(SSO Only) To edit web.xml for SSO (optional)

NOTE Perform this procedure only if your site uses SSO with a proxy server. You must use this procedure to modify web.xml to enable SSO.

1. Open web.xml for editing.
2. At the end of web.xml, comment out the <login-config> element, as follows:

```
<!--
<login-config>
  <auth-method>FORM</auth-method>
  <realm-name>AE Workplace</realm-name>
  <form-login-config>
    <form-login-page>/ContainerLogin.jsp</form-login-page>
    <form-error-page>/ContainerError.jsp</form-error-page>
  </form-login-config>
</login-config>
-->
```

3. As needed, set the ssoProxyContextPath, ssoProxyHost, ssoProxyPort, and ssoProxySSLPort.

These parameter values are used to modify one or more elements of the native URL that Workplace sees on a request. Wherever the value of an SSO proxy host element in the URL request is different from the equivalent information for the host where Workplace is deployed, you must set the corresponding sso<proxy host element> parameter for that element in the URL to the value for the SSO proxy host.

The default settings are (in **bold**):

```
<init-param>
  <param-name>ssoProxyContextPath</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxyHost</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxyPort</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxySSLPort</param-name>
  <param-value></param-value>
</init-param>
```

In general, the init parameters must be configured as follows:

- **ssoProxyContextPath**: Set the value to the context path of the SSO proxy host URL. This path is the path portion of the URL that appears after the server name. The path represents top-level access to the Workplace application.

For example, if the Workplace deployment host URL is `http://deploy_server:2809/Workplace` and the SSO proxy host URL is `http://sso_proxy_server.domain.com/fn/Workplace`, then use the following values:

```
<param-name>ssoProxyContextPath</param-name>
<param-value>/fn/Workplace</param-value>
```

- **ssoProxyHost:** Set the value to the SSO proxy host server name. Typically, this value is a full domain-qualified host name.

For example, if the host URL where Workplace is deployed is `http://deploy_server/Workplace` and the corresponding SSO proxy host URL is `http://sso_proxy_server/Workplace`, then use the following values:

```
<param-name>ssoProxyHost</param-name>
<param-value>sso_proxy_server</param-value>
```

- **ssoProxyPort:** Set the value to the http port on the SSO proxy host.

For example:

```
<param-name>ssoProxyPort</param-name>
<param-value>80</param-value>
```

- **ssoProxySSLPort:** Set the value to the https port on the SSO proxy host, if defined or used to access Workplace pages.

For example:

```
<param-name>ssoProxySSLPort</param-name>
<param-value>443</param-value>
```

4. Save your changes to `web.xml` and close the file.

To configure Application Engine (WebSphere)

1. In the administrative console, set JVM settings for JAAS login configuration and memory settings.
 - a. Navigate to Servers > Application Servers > *server_name* > Java & Process Management > Process Definition > Java Virtual Machine.

In the Java Virtual Machine settings, set the JAAS login entry in the Generic JVM argument field to the following (do not enter the line breaks):

```
-Djava.security.auth.login.config=AE_install_path\CE_API\config
\jaas.conf.WebSphere
```

where *AE_install_path* is your installation path. Your path might be slightly different depending on the version of your client installations, or whether you have chosen a custom path for installation. Verify the location of the file and specify the install path location before you enter the path.

IMPORTANT (Windows only) The path cannot contain a space. You must use 8.3-notation for the install path portion of the full JAAS login entry.

If your *AE_install_path* is:

```
C:\Program Files\FileNet\AE
```

use:

```
C:\Progra~1\FileNet\AE
```

IMPORTANT Do not copy and paste the text from this guide into the field in the console because hidden formatting can cause problems with the entry. Use a paste special option in a text editor to remove formatting first, or type the entry into the field.

- b. Set the Initial and Maximum Heap Size.

Refer to your application server vendor recommendation for Initial and Maximum heap size values. For IBM-specific recommendations, see the *IBM FileNet P8 Platform Performance Tuning Guide*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20.](#)

- c. Save your changes.

- 2. (For installations with Content Engine and Application Engine collocated on the WebSphere server, but in different WebSphere profiles) Create an additional JVM property for different WebSphere profiles.

Perform the following steps on *both* the Content Engine profile and the Application Engine profile:

- a. In the Java Virtual Machine settings, click **Custom Properties > New**.

- b. In the **Name** field, enter the following name:

`com.ibm.websphere.orb.uniqueServerName`

- c. Set the **Value** to true.

- d. Save your changes.

- 3. Verify that Application Integration installation is enabled.

- a. In the Environment area, in Virtual Hosts, navigate to **default_host** (or the host your application is deployed under).

- b. Click **MIME Types**.

- c. Verify that MIME type is set to application/octet-stream or use the following steps to set it.

- i. Click **New**.

- ii. In the **MIME Type** field, enter **application/octet-stream**.

- iii. In the **Extension(s)** field, enter **exe**. Click **OK**.

- iv. Click **Apply**, click **Save**.

- d. Save your changes.

- 4. Configure Lightweight Third Party Authentication (LTPA).

NOTE Skip this step if your Application Engine and Content Engine are located on the same application server.

- a. On the Content Engine application server, do the following:

NOTE If you are already using LTPA with your Content Engine application server, you only need to copy the key file to the Application Engine server. Skip to [Step xii](#).

- i. Log in to the administrative console.
- ii. Navigate to **Security > Secure administration, applications, and infrastructure**.
- iii. From the right side of the panel, select **Authentication Mechanisms and expiration**.
- iv. Enter a value for the timeout that is larger than the default.

For example, if the timeout value is set to 120 minutes, the LTPA key expires. Users will not be able to log in to Workplace after having been logged in for 2 hours.

- v. Save your changes.
- vi. In the box titled "Cross-cell single sign-on," enter a password to create the *LTPA password*.

NOTE For password restrictions, see the WebSphere documentation. If you have already configured Content Engine for LTPA, use the existing password for the Application Engine steps.

- vii. Enter a path for the Key File Name. For example, */opt/LTPA/ltpa_key_name*.

- viii. Click **Export Keys**. Verify that the following message is displayed: The keys were successfully exported to the file *ltpa_key_name*.

- ix. Click **Import Keys**.

- x. Click **OK**, and then click **Save changes to the Master Configuration**.

- xi. Stop and restart WebSphere.

- xii. Copy the key file from Content Engine server location you specified to a directory on the Application Engine server. For example, */opt/LTPA/ltpa_key_name*.

- b. On the Application Engine server WebSphere administrative console, do the following steps:

- i. Navigate to **Security > Secure administration, applications, and infrastructure**.
- ii. From the right side of the panel, select **Authentication Mechanisms and expiration**.
- iii. Enter a value for the timeout that is larger than the default.

For example, if the timeout value is set to 120 minutes, the LTPA key expires. Users will not be able to log in to Workplace after having been logged in for 2 hours. Save your changes.

- iv. In the box titled cross-cell single sign-on, enter the LTPA password you created for Content Engine. Confirm the password.
- v. Specify the path for the key file that you copied to the Application Engine server. For example, */opt/LTPA/ltpa_key_name*.
- vi. Click **Import Keys**. Verify that the following message is displayed: The keys were successfully imported from the file *ltpa_key_name*.
- vii. Save your changes.

5. Configure Lightweight Directory Access Protocol (LDAP).

NOTE Skip this step if your Application Engine and Content Engine are located on the same application server.

- a. Navigate to Security > Secure administration, applications, and infrastructure.
- b. Disable security using the following Security settings:
 - Turn off (clear) **Enable Administrative Security** flag.
 - Turn off (clear) **Enable application security** flag.
 - Turn off (clear) **Java 2 Security**.
- c. From the Active Authentication Mechanism drop down list, select **LTPA (Light weight Third Party Authentication)**.
- d. From the bottom of the panel, in the box titled "available realm definitions," select **Standalone LDAP registry** and click **Configure**.
- e. Configure the LDAP provider to exactly match the corresponding settings on the Content Engine application server.
 - Primary administrative user name
 - Select "Automatically generated server identity."
 - Type
 - Host
 - Port
 - Base distinguished name (DN)
 - Bind distinguished name (DN)
 - Bind password
- f. Configure the Advanced Lightweight Directory Access Protocol (LDAP) user registry settings to exactly match the corresponding settings from the Content Engine application server.
 - User filter
 - Group Filter
 - User ID map
 - Group member ID map
 - Certificate map mode
 - Certificate filter
- g. Save these settings.
- h. Next to "Available realm definitions," make sure "Standalone LDAP registry" is still selected, and click **Set as current**.
- i. Re-enable the following Security settings:

- Turn on (check) **Enable Administrative Security flag**.
- Turn on (check) **Enable application security flag**.
- Turn off (clear) **Java 2 Security**.

NOTE The IBM FileNet P8 Platform uses LDAP-based security, and does not support Java 2 security. Enabling Java 2 security can cause unexpected behavior.

- j. Save your changes to the master configuration.
 - k. Test the connection on the Standalone LDAP registry page. If the test fails, correct the error before proceeding. If it passes, click **OK** to return to the previous page.
6. If you do not plan to perform the procedure to configure the server ports, stop and restart WebSphere before continuing on to deploy Application Engine.
 7. Continue with [“To configure the server ports” on page 584](#).

To configure the server ports

This configuration is not required but is recommended.

1. Stop the WebSphere server.
2. Make a backup copy of `serverindex.xml` located in:

```
WAS_HOME\profiles\default\config\cells\machine_nameNode01Cell\nodes\
machine_nameNode01\
```

3. Edit the `serverindex.xml` file for each node. The file has the same endpoints for each node on the server, and you need to perform the edit for each node.

Locate the `<specialEndpoints>` section, and change the port numbers for the three SSL listener addresses to “0” as shown here:

```
<specialEndpoints xmi:id="NamedEndPoint_1155689929072"
endPointName="SAS_SSL_SERVERAUTH_LISTENER_ADDRESS">
  <endPoint xmi:id="EndPoint_1155689929072" host="host_name" port="0"/>
</specialEndpoints>
<specialEndpoints xmi:id="NamedEndPoint_1155689929073"
endPointName="CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS">
  <endPoint xmi:id="EndPoint_1155689929073" host="host_name" port="0"/>
</specialEndpoints>
<specialEndpoints xmi:id="NamedEndPoint_1155689929074"
endPointName="CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS">
  <endPoint xmi:id="EndPoint_1155689929074" host="host_name" port="0"/>
</specialEndpoints>
```

4. Save and close the `serverindex.xml` file.
 5. Restart WebSphere.
6. Continue with [“Manually copy custom data” on page 594](#).

Task 6b: Configure Application Engine upgrades from 3.5.x (WebLogic)

This topic covers the configuration of your Application Engine application (Workplace) on WebLogic. Perform the following high-level steps in the order listed, using the referenced detailed procedures for each step.

1. If you are using SSO, edit `web.xml`. See [“To edit web.xml for SSO \(optional\)” on page 585](#).
2. Modify the application server startup script. See [“To modify the application server startup script” on page 586](#).
3. Configure Application Engine. See [“To configure Application Engine \(WebLogic\)” on page 589](#).
4. Modify `config.xml` to support passing user credentials to clients such as Application Integration and WebDAV. See [“To enable passing user credentials to client applications \(WebLogic\)” on page 590](#).

To edit web.xml for SSO (optional)

NOTE Perform this procedure only if your site uses SSO with a proxy server. You must modify `web.xml` to enable SSO.

1. Make a backup copy of `web.xml`.
2. Edit `web.xml`.
 - a. Set the parameter `perimeterChallengeMode` to `true`, as in:

```
AE_install_path/Workplace/WEB-INF/web.xml
```

```
<init-param>
  <param-name>perimeterChallengeMode</param-name>
  <param-value>true</param-value>
</init-param>
```

- b. As needed, set the `ssoProxyContextPath`, `ssoProxyHost`, `ssoProxyPort`, and `ssoProxySSLPort`.

These parameter values are used to modify one or more elements of the native URL that Workplace sees on a request. Wherever the value of an SSO proxy host element in the URL request is different from the equivalent information for the host where Workplace is deployed, then you must set the corresponding `sso*` parameter for that element in the URL to the value for the SSO proxy host.

The default settings are (in **bold**):

```
<init-param>
  <param-name>ssoProxyContextPath</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxyHost</param-name>
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxyPort</param-name>
```

```
<param-value></param-value>
</init-param>
<init-param>
  <param-name>ssoProxySSLPort</param-name>
  <param-value></param-value>
</init-param>
```

In general, the init parameters above should be configured as follows:

- **ssoProxyContextPath:** Set the value to the context path of the SSO proxy host URL. This is the path portion of the URL that appears after the server name, and which represents top-level access to the Workplace application.

For example, if the Workplace deploy host URL is `http://deploy_server:2809/Workplace` and the SSO proxy host URL is `http://sso_proxy_server.domain.com/fn/Workplace`, then use the following:

```
<param-name>ssoProxyContextPath</param-name>
<param-value>/fn/Workplace</param-value>
```

- **ssoProxyHost:** Set the value to the SSO proxy host server name. Typically, this will be a full domain-qualified hostname.

For example, if the host URL where Workplace is deployed is `http://deploy_server/Workplace` and the corresponding SSO proxy host URL is `http://sso_proxy_server/Workplace`, then use the following:

```
<param-name>ssoProxyHost</param-name>
<param-value>sso_proxy_server</param-value>
```

- **ssoProxyPort:** Set the value to the http port on the SSO proxy host.

For example:

```
<param-name>ssoProxyPort</param-name>
<param-value>80</param-value>
```

- **ssoProxySSLPort:** Set the value to the https port on the SSO proxy host, if defined and/or used to access Workplace pages.

For example:

```
<param-name>ssoProxySSLPort</param-name>
<param-value>443</param-value>
```

3. Save your changes to `web.xml` and close the file.

To modify the application server startup script

1. Stop the WebLogic application server if running.
2. Make a backup copy of the application server startup script.

Back up `startWebLogic.cmd` for Windows or `startWebLogic.sh` for UNIX.

NOTE If you are not using a WebLogic domain, backup `startWLS.cmd` for Windows or `startWLS.sh` for UNIX.

- a. Edit the `MEM_ARGS` variable.

Adjusting this setting prevents the application server from running out of memory, a condition in which users would not be able to log in to Workplace.

NOTE If the MEM_ARGS variable doesn't exist, add it to the startup script.

- For all systems except those using JRockit JAVA.

Append the following to the MEM_ARGS variable:

```
-XX:MaxPermSize=sizem
```

where *size* is the value, in MB, of the MaxPermSize.

Refer to your application server vendor's recommendation for Initial and Maximum heap size values. For IBM specific recommendations, see the *IBM FileNet P8 Platform Performance Tuning Guide*. To download this guide from the IBM support page, see ["Access IBM FileNet documentation, compatibility matrices, and fix packs" on page 20](#).

- For systems using JRockit JAVA.

Append the following to the MEM_ARGS variable:

```
-Xgc:gencon
```

- If your application server uses the IBM JVM, edit the JAVA_OPTIONS variable (to improve performance).

UNIX

Immediately before the following line in `startWebLogic.sh`:

```
SAVE_JAVA_OPTIONS=$JAVA_OPTIONS
```

insert this line (without a carriage return):

```
JAVA_OPTIONS="$JAVA_OPTIONS -Dprogram.name=$PROGNAME  
-Dfilenet.pe.peorb.pool.min=2 -Dfilenet.pe.peorb.pool.max=5"
```

Windows

Immediately before the following line in `startWebLogic.cmd`:

```
set SAVE_JAVA_OPTIONS=%JAVA_OPTIONS%
```

insert this line (no carriage return):

```
set JAVA_OPTIONS=%JAVA_OPTIONS% -Dprogram.name=%PROGNAME%  
-Dfilenet.pe.peorb.pool.min=2 -Dfilenet.pe.peorb.pool.max=5
```

- Configure JAAS login.

Add one of the following right after the classpath entry for WebLogic.

CAUTION Enter the `jaas_login` entry (bold below) as a single line without line breaks. Do not copy and paste the text from this guide because hidden formatting can cause problems with the entry. Instead, type the entry into the script.

NOTE Your path may be slightly different depending on the version of your client installations, or whether you have chosen a custom path for installation. Verify the location of the file before you enter the path.

Windows

```
@REM Jaas Login configuration setting
set JAAS_LOGIN=%JAAS_LOGIN% -Djava.security.auth.login.config=
"AE_install_path\CE_API\config\jaas.conf.WebLogic"
```

UNIX

```
# Jaas Login configuration setting
JAAS_LOGIN="${JAAS_LOGIN}" -Djava.security.auth.login.config=
"AE_install_path/CE_API/config/jaas.conf.WebLogic"
```

AIX

```
# Jaas Login configuration setting
JAAS_LOGIN="${JAAS_LOGIN}" -Djava.security.auth.login.config=
"AE_install_path/CE_API/config/jaas.conf.WebLogic"
JAAS_LOGIN="${JAAS_LOGIN}" -
Dlogin.configuration.provider=com.ibm.security.auth.login.ConfigFile
```

- d. Add %JAAS_LOGIN% section as indicated in the examples below in **bold**.

Windows - in the WLS_REDIRECT_LOG settings

```
If "%WLS_REDIRECT_LOG%"==" " (
    echo Starting WLS with line:
    echo %JAVA_HOME%\bin\java %JAVA_VM% %MEM_ARGS% %JAVA_OPTIONS% %JAAS_LOGIN%
    -Dweblogic.Name=%SERVER_NAME% -
    Djava.security.policy=%WL_HOME%\server\lib\weblogic.policy %PROXY_SETTINGS%
    %SERVER_CLASS%
    %JAVA_HOME%\bin\java %JAVA_VM% %MEM_ARGS% %JAVA_OPTIONS% %JAAS_LOGIN% -
    Dweblogic.Name=%SERVER_NAME% -Dweblogic.management.username=%WLS_USER% -
    Dweblogic.management.password=%WLS_PW% -
    Djava.security.policy=%WL_HOME%\server\lib\weblogic.policy %PROXY_SETTINGS%
    %SERVER_CLASS%
) else (
    echo Redirecting output from WLS window to %WLS_REDIRECT_LOG%
    %JAVA_HOME%\bin\java %JAVA_VM% %MEM_ARGS% %JAVA_OPTIONS% %JAAS_LOGIN% -
    Dweblogic.Name=%SERVER_NAME% -Dweblogic.management.username=%WLS_USER% -
    Dweblogic.management.password=%WLS_PW% -
    Djava.security.policy=%WL_HOME%\server\lib\weblogic.policy %PROXY_SETTINGS%
    %SERVER_CLASS% >"%WLS_REDIRECT_LOG%" 2>&1
)
```

UNIX - in the WLS_REDIRECT_LOG settings

```
`${JAVA_HOME}/bin/java `${JAVA_VM} -version

if [ "${WLS_REDIRECT_LOG}" = " " ] ; then
    echo "Starting WLS with line:"
    echo "`${JAVA_HOME}/bin/java `${JAVA_VM} `${MEM_ARGS} `${JAVA_OPTIONS} -
    Dweblogic.Name=${SERVER_
    NAME} -Djava.security.policy=${WL_HOME}/server/lib/weblogic.policy
    ${PROXY_SETTINGS} `${SERVER_CLASS
    }"
    `${JAVA_HOME}/bin/java `${JAVA_VM} `${MEM_ARGS} `${JAVA_OPTIONS}
    `${JAAS_LOGIN} -Dweblogic.Name=${S
    ERVER_NAME} -Djava.security.policy=${WL_HOME}/server/lib/weblogic.policy
    ${PROXY_SETTINGS} `${SERVER_
    CLASS}
else
    echo "Redirecting output from WLS window to `${WLS_REDIRECT_LOG}"
    `${JAVA_HOME}/bin/java `${JAVA_VM} `${MEM_ARGS} `${JAVA_OPTIONS}
    `${JAAS_LOGIN} -Dweblogic.Name=${S
    ERVER_NAME} -Djava.security.policy=${WL_HOME}/server/lib/weblogic.policy
    ${PROXY_SETTINGS} `${SERVER_
```

```
CLASS} >"${WLS_REDIRECT_LOG}" 2>&1
fi
```

3. Save and close the server startup script.

To configure Application Engine (WebLogic)

1. (If you selected Container-Managed Authentication during the installation) Enable trust between WebLogic domains for the Content Engine domain and the Application Engine domain.

Do the following on both the Content Engine application server and the Application Engine application server.

- a. In the WebLogic Administration Console, in the security settings, enter a password for the domain. You must enter the same password for both the Content Engine domain and Application Engine domain.
 - b. Save your changes.
 - c. Restart the server if needed.
 - d. Repeat this procedure in each domain for which you want to enable trust.
2. (If you selected Container-Managed Authentication during the installation) Configure LDAP settings on Application Engine to exactly match the Content Engine settings.

- a. Refer to your Content Engine installation worksheet items and the WebLogic Administration Console settings for Compatibility Security > Realms for Authentication Provider, users, and groups on Content Engine.

Configure the LDAP provider to exactly match the settings from the Content Engine server.

- Group Base DN:
 - User Name Attribute:
 - Port:
 - User Base DN:
 - Principal:
 - Credential:
 - Confirm Credential:
 - Host:
 - User From Name Filter:
 - Group From Name Filter:
- b. Restart WebLogic.

3. Set permissions for the user running the application server.

If the user that will be running the application server is different from the user that installed Application Engine, you must give the user read/write permissions on the folder where you installed AE (*AE_install_path*).

4. Continue with [“To enable passing user credentials to client applications \(WebLogic\)” on page 590.](#)

To enable passing user credentials to client applications (WebLogic)

Perform this procedure to enable passing user credentials between Application Engine and its client applications such as WebDAV and Application Integration.

CAUTION If you do not make this change to `config.xml`, then end users will be prompted to enter their user name and password to complete any client operations, such as adding a document.

1. Stop the WebLogic server.
2. Make a backup copy of `config.xml` located in deployment directory.

For example:

```
BEA_home/BEA/user_projects/domains/domain_name/config/config.xml
```

3. Edit `config.xml`.

CAUTION The `enforce-valid-basic-auth-credentials` entry should be entered as a single line without line breaks.

- a. Locate the `<security-configuration>` section and add the following line to the end of the section, just before the `</security-configuration>` tag:

```
<enforce-valid-basic-auth-credentials>>false</enforce-valid-basic-auth-credentials>
```

- b. Save your changes to `config.xml` and close the file.

4. Restart WebLogic.
5. Continue with [“Manually copy custom data” on page 594.](#)

Task 6c: Configure Application Engine upgrades from 3.5.x (JBoss)

This topic covers the configuration of your Application Engine application (Workplace) on JBoss. Perform the following high-level steps in the order listed, using the referenced detailed procedures for each step.

To modify the application server startup script

1. Stop JBoss if it is running.
2. Make a backup copy of the application server startup script.

UNIX

```
run.sh
```

Windows

```
run.bat
```

3. Edit the application server startup script Java settings.
 - a. Add a line to specify the path to the JDK provided by JBoss, as shown in the following example (Windows):

```
set JAVA_HOME=C:\Program Files\Java\jdk1.5.0_06
```

NOTE If your JDK is different from version 1.5.0, substitute your version for the one listed above.

- b. Update the JAVA_OPTS memory settings.

Adjusting this setting prevents the application server from running out of memory, a condition in which users would not be able to log in to Workplace.

In the `JAVA_OPTS` line, change the `-Xms` and `-Xmx` values (**bold**) for your configuration.

Example (Windows):

```
set JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx512m
```

Refer to your application server vendor's recommendation for Initial and Maximum heap size values. For IBM specific recommendations, see the *IBM FileNet P8 Platform Performance Tuning Guide*. To download this guide from the IBM support page, see ["Access IBM FileNet documentation, compatibility matrices, and fix packs" on page 20](#).

- c. If your application server uses the IBM JVM, edit the `JAVA_OPTS` variable in the startup script immediately after the line in the previous sub-step. This `JAVA_OPTS` edit improves performance.

UNIX

Find the following line in `run.sh`:

```
JAVA_OPTS="$JAVA_OPTS -Dprogram.name=$PROGNAME"
```

and change it to this (without a carriage return):

```
JAVA_OPTS="$JAVA_OPTS -Dprogram.name=$PROGNAME
-Dfilenet.pe.peorb.pool.min=2 -Dfilenet.pe.peorb.pool.max=5"
```

Windows

Find the following line in run.bat:

```
set JAVA_OPTS=%JAVA_OPTS% -Dprogram.name=%PROGNAME%
```

and change it to this (without a carriage return):

```
set JAVA_OPTS=%JAVA_OPTS% -Dprogram.name=%PROGNAME%
-Dfilenet.pe.peorb.pool.min=2 -Dfilenet.pe.peorb.pool.max=5
```

d. Save your edits.

4. Configure JAAS login.

Add one of the following right after the "\$JAVA" \$JAVA_OPTS (UNIX) or "%JAVA%" %JAVA_OPTS (Windows) entry in the startup script.

CAUTION Enter the jaas_login entry (bold below) as a single line without line breaks. Do not copy and paste the text from this guide because hidden formatting can cause problems with the entry. Instead, type the entry into the script.

NOTE Your path may be slightly different depending on the version of your client installations, or whether you have chosen a custom path for installation. Verify the location of the file before you enter the path.

UNIX

```
"$JAVA" $JAVA_OPTS -Djava.security.auth.login.config="/opt/FileNet/AE/CE_API/
config/jaas.conf.JBoss" "-Djava.endorsed.dirs=$JBoss_ENDORSED_DIRS" -classpath
"$JBoss_CLASSPATH" org.jboss.Main $@
```

Windows

```
"%JAVA%" %JAVA_OPTS% "-Djava.security.auth.login.config=C:\Program
Files\FileNet\AE\CE_API\config\jaas.conf.JBoss" "-
Djava.endorsed.dirs=%JBoss_ENDORSED_DIRS%" -classpath "%JBoss_CLASSPATH%"
org.jboss.Main %*
```

5. Save and close the server startup script.

6. Configure LDAP settings on Application Engine to exactly match the Content Engine settings.

- a. On the Application Engine server, open login-config.xml, located in *JBoss_home/server/server_name/conf*, for editing.
- b. Set the <application-policy name="FileNet"> entry identical to the corresponding entry in the login-config.xml file on the Content Engine server.
- c. Set the <application-policy name="FileNetP8Engine"> entry identical to the corresponding entry in the login-config.xml file on the Content Engine server.
- d. Save changes to the login-config.xml file on the Application Engine server.
- e. Restart JBoss.

7. Set permissions for the user running the application server.

NOTE On Windows, the following is only required for NTFS formatted partitions

If the user that will be running the application server is different from the user that installed Application Engine, you must give the user read/write permissions on the folder where you installed Application Engine (*AE_install_path*).

8. (Optional) Disable JBoss logging.

In development mode, JBoss creates a large number of HTTP Access, "INFO", "DEBUG" and "TRACE" log messages. This can cause unexpected behavior in the deployed IBM FileNet software. Using the following procedure, you can limit this type of excessive JBoss logging.

NOTE When logging is disabled, error messages will still be displayed in the JBoss console.

- a. Edit the `log4j.xml` file (*JBoss_home/server/server_name/conf/log4j.xml*).
 - i. Change all threshold values and priority values from "INFO", "DEBUG", or "TRACE" to "ERROR".
 - ii. Delete or comment out the "Preserve messages in a local file" to turn off the server log.
- b. To turn off HTTP access logging, open `jboss-service.xml` with a text editor and delete or comment out the "Access logger" section.

Location of `jboss-service.xml`:

JBoss_Home/server/server_name/deploy/jbossweb-tomcat55.sar/META-INF

- c. Open `web.xml` and change the `logVerbosityLevel` to "FATAL".

Location of `web.xml`:

JBoss_Home/server/server_name/deploy/jbossweb-tomcat55.sar/conf

- d. Restart the JBoss server.

9. Continue with ["Manually copy custom data" on page 594](#).

Task 7: Manually copy custom data

If your custom data was *not* retained in the upgrade you must manually copy the data from the version 3.5.x or 4.0.1 backup files (*deploy_backup*) to the upgraded files.

NOTE You must also copy any data you want to retain if you have made any custom add-ons or modifications to the Application Engine installation being upgraded and chose not to keep these changes after the upgrade. You should manually copy any other custom data you want to retain to the upgraded files listed in [“Prepare for Application Engine upgrade” on page 544](#).

When you have completed the manual copy of your custom data, deploy the Workplace application using one of the following tasks:

- [“Deploy upgraded Application Engine instances \(WebSphere\)” on page 595](#)
- [“Deploy upgraded Application Engine instances \(WebLogic\)” on page 598](#)
- [“Deploy upgraded Application Engine instances \(JBoss\)” on page 600](#)

Task 8a: Deploy upgraded Application Engine instances (WebSphere)

This topic covers the deployment and start of your Application Engine application (Workplace) on WebSphere.

To recreate the WAR or EAR file

Any time that you make changes to files in the `/Workplace` directory, such as changes to `web.xml` for container-managed authentication, SSO support, or any other edits, you must recreate the WAR or EAR file and redeploy your changes.

NOTE Before recreating the EAR file, you must also recreate the WAR file.

- If you will be deploying from a WAR or an EAR file.
 - a. Verify that all modified `/Workplace` directory files have been saved.
 - b. Recreate the `app_engine.war` file by running `create_app_engine_war.sh` (UNIX) or `create_app_engine_war.bat` (Windows) from the following location:
- If you will be deploying from an EAR file.
 - a. Verify that a newly recreated `app_engine.war` file exists.
 - b. Recreate the `app_engine.ear` file by running `create_app_engine_ear.sh` (UNIX) or `create_app_engine_ear.bat` (Windows) from the following location:

```
AE_install_path/deploy/
```

```
AE_install_path/deploy/
```

To deploy Application Engine

1. Log on to the WebSphere administrative console.
2. Navigate to the dialog for installing a new application.

WebSphere 6.1

Expand Applications > Install New Application.

WebSphere 7.0

Expand Applications > New Application > New Enterprise Application.

3. Select the file to deploy.
 - (If the administrative console is running *locally*) Select **Local Path** and enter or browse to the location of the `app_engine.war` or `app_engine.ear` file created by the installation program (see below for the default path). Do not enter the machine name.
 - (If the administrative console is *remote*) Select **Server path** and enter the fully-qualified pathname to the `app_engine.war` or `app_engine.ear` file. Do not enter the machine name.

```
AE_install_path/deploy
```

4. (WebSphere 6.1) If you are deploying a WAR file, enter the context root.

Enter `Workplace` and click **Next** to proceed to deploying a new application.

NOTE The context root is the name of the application you log in to using the web interface, such as:

```
http://ApplicationEngineServerName:port#/Context_Root.
```

5. Complete the dialogs for installing a new application, using the following settings:

Application name: `Workplace`, or the name you chose to call the application.

WebServer: The server you are planning to use. Verify that your application name is selected and associated with the correct WebServer.

virtual host: Choose the `default_host`.

(WebSphere 7.0) context root: `Workplace`

6. Save your configuration.
7. Configure the Classloader settings and change the polling interval to a number appropriate for your environment.

Change Classloader order to have the classes loaded with parent classloader last.

NOTE Do this only for the specific web application. Do not change the similar settings for the entire application server.

8. In the Manage Modules area, configure the Web Module Classloader setting.

Change Classloader order to have the classes loaded with parent classloader last.

NOTE Do this only for the specific web application. Do not change the similar settings for the entire application server.

9. (WebSphere 6.1) If you are using container-managed authentication, navigate to Enterprise Applications > Workplace > Map security roles to users/groups, and verify that the **All Authenticated** column is checked for the “All Authenticated” role.
10. (WebSphere 7.0) If you are using container-managed authentication, navigate to Enterprise Applications > Workplace > Security roles to user/group mapping. Select the “All authenticated” role and map it to “All Authenticated in Applications realm”.
11. Set permissions for the user running the application server.

The user that will be running the application server must have read/write permissions on the following (default) folders:

```
WAS_HOME/profiles/default/installedApps/node_name/app_engine_war.ear/  
app_engine.war
```

```
AE_install_path
```

12. Save all your changes.

13. Stop and restart WebSphere.

NOTE To troubleshoot the deployment, check the following log:

```
WAS_install_path/AppServer/profiles/profile_name/logs/server_name/  
SystemOut.log
```

14. Continue with [Task 9 “Complete post-upgrade Application Engine configuration”](#) on page 602.

Task 8b: Deploy upgraded Application Engine instances (WebLogic)

This topic covers the deployment of your Application Engine application (Workplace) on WebLogic.

To recreate the WAR or EAR file

Any time that you make changes to files in the `/Workplace` directory, such as changes to `web.xml` for container-managed authentication, SSO support, or any other edits, you must recreate the WAR or EAR file and redeploy your changes.

NOTE Before recreating the EAR file, you must also recreate the WAR file.

- If you will be deploying from a WAR file.
 - a. Verify that all modified `/Workplace` directory files have been saved.
 - b. Recreate the `app_engine.war` file by running `create_app_engine_war.sh` (UNIX) or `create_app_engine_war.bat` (Windows) from the following location:
- If you will be deploying from an EAR file.
 - a. Verify that a newly recreated `app_engine.war` file exists.
 - b. Recreate the `app_engine.ear` file by running `create_app_engine_ear.sh` (UNIX) or `create_app_engine_ear.bat` (Windows) from the following location:

```
AE_install_path/deploy/
```

```
AE_install_path/deploy/
```

To deploy as “Workplace” or custom name using a WAR file

Perform this step only if you are using a WAR file for deployment, and you want to use “Workplace” or a custom name for the context root of the application. The context root is part of the URI that end users enter to access Workplace. By default, when you deploy from a WAR file, the context root is the first part of the WAR filename.

Rename the `app_engine.war` file to reflect the name you want to use using the format `Application Name.war`.

Example:

The default `app_engine.war` will generate the following context root:

```
http://server_name:port#/app_engine
```

Renaming the WAR file `Workplace.war` will generate the following context root:

```
http://server_name:port#/Workplace
```

CAUTION You must rename the WAR file every time you regenerate it. The `create_app_engine_war.sh/.bat` script will by default create a file with the name `app_engine.war`.

To deploy Application Engine

1. From the WebLogic Administration Console, navigate to the domain you initially created for the Application Engine.
2. Prepare the WebLogic Administration Console to deploy the application.
3. Choose whether to deploy from an exploded folder (*AE_install_path*) or from the WAR or EAR file (default: *app_engine.war* or *app_engine.ear* in *AE_install_path/deploy*).
4. Accept the defaults for the deployment, except for the name for the deployment. Use “Workplace” instead of “appengine”.
5. Finish the deployment, and save and activate your changes.

NOTE To verify that the deployment was successful, expand **Web Applications**. The web application Workplace will be listed.

NOTE To troubleshoot the deployment, check the following log:

```
WLS_install_path/user_projects/domains/domain_name/servers/server_name/  
logs/server_name.log
```

6. Continue with [Task 9 “Complete post-upgrade Application Engine configuration” on page 602](#).

Task 8c: Deploy upgraded Application Engine instances (JBoss)

This topic covers the deployment and start of your Application Engine application (Workplace) on JBoss.

To recreate the WAR or EAR file

Any time that you make changes to files in the `/Workplace` directory, such as changes to `web.xml`, you must recreate the WAR or EAR file and redeploy your changes.

NOTE Before recreating the EAR file, you must also recreate the WAR file.

- If you will be deploying from a WAR file.
 - a. Verify that all modified `/Workplace` directory files have been saved.
 - b. Recreate the `app_engine.war` file by running `create_app_engine_war.sh` (UNIX) or `create_app_engine_war.bat` (Windows) from the following location:

```
AE_install_path/deploy/
```

- If you will be deploying from an EAR file.
 - a. Verify that a newly recreated `app_engine.war` file exists.
 - b. Recreate the `app_engine.ear` file by running `create_app_engine_ear.sh` (UNIX) or `create_app_engine_ear.bat` (Windows) from the following location:

```
AE_install_path/deploy/
```

To deploy as “Workplace” or custom name using a WAR file

Perform this step only if you are using a WAR file for deployment, and you want to use “Workplace” or a custom name for the context root of the application. The context root is part of the URI that end users type to access Workplace. By default, when you deploy from a WAR file, the context root is the first part of the WAR filename.

Rename the `app_engine.war` file to reflect the name you want to use using the format `Application Name.war`.

Example:

The default `app_engine.war` will generate the following context root:

```
http://server_name:port#/app_engine
```

Renaming the WAR file `Workplace.war` will generate the following context root:

```
http://server_name:port#/Workplace
```

CAUTION You must rename the WAR file every time you regenerate it. The `create_app_engine_war.sh/.bat` script will by default create a file with the name `app_engine.war`.

To deploy and start Application Engine

1. Stop JBoss, if it is running.
2. Deploy the Workplace application:

To deploy from exploded directory

- a. On the JBoss server, copy the `/Workplace` folder from:

`AE_install_path`

to:

`JBOSS_home/server/servername/deploy/`

- b. Append the extension `.war` to the Workplace folder:

`JBOSS_home/server/servername/deploy/Workplace.war`

To deploy from a WAR file

On the JBoss server, copy the `app_engine.war` file from:

`AE_install_path/deploy`

to:

`JBOSS_home/server/servername/deploy/`

To deploy from an EAR file

On the JBoss server, copy the `app_engine.ear` file from:

`AE_install_path/deploy`

to:

`JBOSS_home/server/servername/deploy/`

3. Set permissions for the user running the application server.

If the user that will be running the application server is different from the user that installed Application Engine, you must give the user read/write permissions on the following folders:

NOTE For Windows this is only required for NTFS formatted partitions:

`JBOSS_home/server/default/deploy/app_engine.war/.ear`

`AE_install_path`

4. Start the JBoss application server.
5. Verify that the application deployed successfully.

Verify that the `server.log` file located in `JBOSS_home/server/servername/log` lists deployment of the WAR or EAR file you used.

6. Continue with [Task 9 “Complete post-upgrade Application Engine configuration”](#) on page 602.

Task 9: Complete post-upgrade Application Engine configuration

Use the procedure in this topic to complete the configuration of upgraded Application Engine instances. Actions include modifying a configuration file, verifying Workplace sign-in, setting bootstrap preferences, establishing the Process Engine connection point, and verifying the version of an associated software integration.

To complete post-upgrade Application Engine configuration

1. (WebLogic only) If you upgraded from WebLogic 8.1.x to WebLogic 9.x or 10.x, you must set the case-sensitivity for the server.
 - a. From the WebLogic Administration Console, click *my_domain*.
 - b. Set **Web App Files Case Insensitive** to false.
 - c. Save and activate your changes.
2. If it is not already running, start the Workplace application on your application server.
3. Sign in to Workplace to test your connection.
 - a. On any computer, open a browser and type:
`http://ApplicationEngineServerName:port#/Workplace`
 - b. Enter a user name and password, and click **Sign in**.
 - c. If the Bootstrap Preferences page is displayed, you must set the preferences.
Follow the instructions in [“Set Application Engine bootstrap preferences” on page 254](#) to reset your bootstrap properties. Use the notes you made of your bootstrap settings during your upgrade preparation to complete this step.
4. Set the Process Engine Connection Point.
The Process Router from version 3.5.x has been replaced with the Process Engine Connection Point.
 - a. In Workplace click **Admin**.
 - b. Click **Site Preferences**.
 - c. Under **General Settings > Tasks**, select a **Process Engine Connection Point** from the drop down list.
 - d. Click **Apply** and then **Exit**.
 - e. Confirm that Application Engine is communicating with Process Engine.
 - i. In Workplace, click **Tasks**.
 - ii. Verify that the Tasks page displays.
 - f. Sign out of Workplace.

5. (IBM FileNet P8 systems using Image Services Integration only) Verify that you are running a supported version of ISRA.

See the *IBM FileNet P8 Hardware and Software Requirements* document for details on supported ISRA versions. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

For more information on how to upgrade ISRA and configure Image Services Integration, see your ISRA documentation and [“Upgrade ISRA servlet” on page 615](#).

Upgrade add-on components

You must upgrade all of the IBM FileNet P8 Platform core components before upgrading the add-on components listed in this topic. See [“Upgrade and configure IBM FileNet P8 Platform” on page 315](#) for the tasks required to upgrade the IBM FileNet P8 Platform core components.

You can upgrade the add-on components in the following list, and any IBM FileNet P8 Platform expansion products, in any order, except that you must upgrade Process Analyzer before upgrading Process Simulator.

For details and procedures on updating add-on components, see the following topics:

- [“Upgrade Application Integration and File Tracker” on page 605.](#)
- [“Upgrade IBM FileNet publishing components” on page 608.](#)
- [“Upgrade server-side scripts and COM objects” on page 609.](#)
- [“Upgrade ISRA servlet” on page 615.](#)

Upgrade Application Integration and File Tracker

Upgrading to Workplace Application Integration 4.0.0 involves installing the new version on top of your existing Workplace Application Integration 3.5.x install. The upgrade installation program detects the earlier version and notifies you before proceeding with the upgrade.

During the upgrade, the installer detects the Microsoft applications that were previously integrated with Workplace and retains that configuration. For example, if you had Microsoft Outlook integrated with Workplace in the 3.5.x release, Microsoft Outlook is upgraded to 4.0.0 during the upgrade installation.

You cannot change your installed components during the upgrade. You can add or remove a Microsoft application from Application Integration after the upgrade using your Add/Remove Programs application.

Verify your computer meets the platform requirements documented in the *IBM FileNet P8 Hardware and Software Requirements*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

Upgrade considerations

The procedures for upgrading Application Integration and File Tracker depend on which versions are currently installed on the client machine.

- If you upgrade from Application Integration version 3.5.1-001 or earlier, the upgrade to 4.0.0 will install File Tracker for you.
- If you upgrade from Application Integration version 3.5.1-002 or higher, then these conditions apply:
 - If you only had Application Integration installed (without File Tracker), then the upgrade to 4.0.0 will install File Tracker for you.
 - If you only had File Tracker installed (without Application Integration), then see [“To upgrade Workplace File Tracker” on page 606](#).
 - If you had both Application Integration and File Tracker installed, then the order that you installed these determines how you upgrade.
 - If you installed File Tracker 3.5.1-002 or higher before you installed Application Integration, you must upgrade File Tracker before you upgrade Application Integration. See [“To upgrade Workplace File Tracker” on page 606](#), and then see [“To upgrade Workplace Application Integration” on page 606](#).
 - If you installed Application Integration 3.5.1-002 or higher, and later used File Tracker, then you only need to upgrade Application Integration. See [“To upgrade Workplace Application Integration” on page 606](#)

NOTE If you upgrade from Application Integration version 3.5.1-002 or earlier, there is a change in the behavior of entry templates for adding email. Beginning with version 3.5.1-003, entry templates for adding an email are no longer restricted to using the email class or subclass.

To upgrade Workplace Application Integration

1. Log onto the client machine with Application Integration installed using an account that has Administrator privileges.
 2. Sign in to Workplace.
 3. Click **Author**, and then click **General Tools**.
 4. Click **Download Application Integration for Microsoft Office**. The File Download dialog box for your system appears. Do one of the following:
 - Click **Open** to run the program from its current location.
 - Click **Save**. In the Save As dialog box, find a location on your machine in which to download and save the `ApplicationIntegration.exe` file locally, and then click **Save**. Once the file is saved to your hard drive, double-click the file to run the upgrade installer.
- NOTE** If you have Workplace Application Integration 3.5.x currently installed, you are prompted about the impending upgrade. Click **Yes** to upgrade to the current version you are installing or click **No** to end the installation.
5. After the install is complete, click **Finish** to complete the upgrade process.

To upgrade Workplace File Tracker

1. Log on to the client machine with File Tracker installed using an account that has Administrator privileges.
2. Sign in to Workplace.
3. Click **Author**, and then click **General Tools**.
4. Scroll down and click **Download File Tracker** and do one of the following:
 - Click **Open** to run the program from its current location.
 - Click **Save**. In the Save As dialog box, find a location on your machine in which to download and save the `FileTracker.exe` file locally, and then click **Save**. Once the file is saved to your hard drive, double-click the file to run the upgrade installer.
5. After the install is complete, click **Finish** to complete the upgrade process.

To verify your Workplace Application Integration upgrade

1. Start Microsoft Word.
2. From the File menu, click FileNet P8, point to Open Document, and then select Select Item. The Logon dialog box opens.
3. Log on using any valid domain account.
4. Click **Options** to view the Workplace address. The version number appears below the address.
5. Close all dialog boxes and close Microsoft Word.

To install component software updates

1. To obtain the latest component software updates, and to determine whether additional interim fixes are needed, contact your service representative.
2. Open the readmes for the software updates and perform the installation procedures in the readmes on the component machine.

Upgrade IBM FileNet publishing components

If you have IBM FileNet Rendition Engine software currently installed, you can upgrade to the latest software version. For instructions, see the *IBM FileNet Rendition Engine Installation and Upgrade Guide* at [FileNet P8 Documentation > FileNet P8 System Installation > Rendition Engine Installation and Upgrade](#).

Upgrade server-side scripts and COM objects

As with Content Engine 3.5.x, you can develop and plug in the following server-side components for the 4.x version of Content Engine: event action handlers, lifecycle action handlers, and document classifiers. Whereas these components had to be implemented as COM objects or scripts for Content Engine 3.5.x, they must be implemented as Java classes in Content Engine 4.x. Therefore, for Content Engine 4.x, you must convert any event action handlers, lifecycle action handlers, and document classifiers that you developed for Content Engine 3.5.x.

This section gives you an idea of the effort involved in converting 3.5.x script-based event action handlers to 4.x Java-implemented handlers. For details on developing and deploying event action handlers, lifecycle action handlers, and document classifiers, see the *Java and .NET Developer's Guide* and the *Java API Reference*.

In the following listings, compare the 3.5.x script-based event action handlers to the corresponding Java-implemented handlers required for Content Engine 4.x.

File Document Handler

This handler files a document to a specified folder, determined by the event fired on the document.

Content Engine 3.5.x JScript Version

```
function OnEvent (Event, Subscription)
{
  var doc = Event.SourceObject;
  if ( Event.IsOfClass("CreationEvent") )
  {
    FileDocInFolder("/Docs", doc);
  }
  else if (Event.IsOfClass("ChangeClassEvent") )
  {
    FileDocInFolder("/Archives", doc);
  }
}

function FileDocInFolder(otherFolderName, doc)
{
  var os = doc.ObjectStore;
  var rootFld = os.RootFolder;
  var fldSet = new Enumerator(rootFld.SubFolders);
  var subFld;
  for ( ; !fldSet.atEnd(); fldSet.moveNext() )
  {
    subFld = fldSet.item();
    if (subFld.Name == otherFolderName)
    {
      subFld.File(doc, 0, doc.DocumentTitle);
    }
  }
}
```

Content Engine 4.x Java Version

```
import com.filenet.api.constants.*;
import com.filenet.api.constants.DefineSecurityParentage;
import com.filenet.api.core.*;
import com.filenet.api.engine.EventActionHandler;
import com.filenet.api.events.ObjectChangeEvent;
import com.filenet.api.exception.EngineRuntimeException;
import com.filenet.api.exception.ExceptionCode;
import com.filenet.api.util.Id;

public class FileDocumentAction implements EventActionHandler
{
    public void onEvent(ObjectChangeEvent event, Id subscriptionId)
        throws EngineRuntimeException
    {
        Document doc = (Document)event.get_SourceObject();
        try
        {
            if (event.getClassName().equalsIgnoreCase("CreationEvent"))
                FileDocInFolder("/docs", doc);
            else if (event.getClassName().equalsIgnoreCase("ChangeClassEvent"))
                FileDocInFolder("/Archives", doc);
        }
        catch (Exception e)
        {
            throw new EngineRuntimeException(ExceptionCode.E_FAILED);
        }
    }

    public void fileDocInFolder(String folderName, Document doc)
    {
        try
        {
            Folder folder = (Folder)doc.getObjectStore().getObject("Folder", folderName);
            ReferentialContainmentRelationship rel = folder.file (doc,
                AutoUniqueName.AUTO_UNIQUE, doc.get_Name(),
                DefineSecurityParentage.DO_NOT_DEFINE_SECURITY_PARENTAGE);
            rel.save(RefreshMode.NO_REFRESH);
        }
        catch (Exception e)
        {
            e.printStackTrace();
        }
    }
}
```

Log Event Handler

This handler records events to a log file when documents are created.

Content Engine 3.5.x VBScript Version

```
Public Sub OnEvent (EventObject, Subscription)
  Dim doc, message)
  Set doc = EventObject.SourceObject)
  WriteToLogFile (doc.Name & " was created on: " & Date))
End Sub

Public Sub WriteToLogFile (message))
  Dim fso, ts, logFile)
  Set fso = CreateObject("Scripting.FileSystemObject"))
  Set logFile = fso.CreateTextFile("C:\log.txt"))
  logFile = nothing)
  Set ts = fso.OpenTextFile("C:\log.txt", 8, True))
  ts.Write (message))
  ts.WriteBlankLines (2))
  ts.Close)
  Set fso = Nothing)
  Set ts = Nothing)
End Sub
```

Content Engine 4.x Java Version

```
import java.io.File;
import java.io.FileWriter;
import java.io.IOException;

import com.filenet.api.core.Document;
import com.filenet.api.engine.EventActionHandler;
import com.filenet.api.events.ObjectChangeEvent;
import com.filenet.api.exception.EngineRuntimeException;
import com.filenet.api.exception.ErrorRecord;
import com.filenet.api.exception.ExceptionCode;
import com.filenet.api.util.Id;

public class LogEventAction implements EventActionHandler
{
    public void onEvent(ObjectChangeEvent event, Id subscriptionId) throws EngineRuntimeException
    {
        public void onEvent(ObjectChangeEvent event, Id subscriptionId) throws EngineRuntimeException
        {
            try
            {
                Document doc = (Document)event.get_SourceObject();
                WriteToLogFile(doc.get_Name() + " was created on: "
                    + new java.util.Date() + "\r\n");
            }
            catch (Exception e) {
                ErrorRecord er[] = {new ErrorRecord (e)};
                throw new EngineRuntimeException(e, ExceptionCode.EVENT_HANDLER_THREW, er);
            }
        }
    }

    public void writeToLogFile(String message)
    {
        try
        {
            File outputFile = new File("C:\\log.txt");
            FileWriter out = new FileWriter(outputFile, true);
            out.write(message);
            out.close();
        }
        catch (IOException e) {
            ErrorRecord er[] = {new ErrorRecord (e)};
            throw new EngineRuntimeException(e, ExceptionCode.EVENT_HANDLER_THREW,er);
        }
    }
}
```

Send eMail Handler

This handler sends an email when a new document has been created.

Content Engine 3.5.x VBScript Version

```
Public Sub OnEvent (EventObject, Subscription)
  Dim myMail, MessageBody
  Set myMail = CreateObject("CDONTS.NewMail")
  myMail.From = "user1@company.com"
  myMail.To = "sysAdmin@company.com"
  myMail.Subject = "Event Notification--New Document created"
  MessageBody = "A document titled "" & Source.DocumentTitle & "" was Created at " & time & " on " &
date & "."
  MessageBody = MessageBody + vbCrLf + Subscription.UserString
  myMail.Body = MessageBody
  myMail.Send
  Set myMail = Nothing
End Sub
```

Content Engine 4.x Java Version

```
import java.util.Date;
import java.util.Properties;

import javax.mail.Message;
import javax.mail.MessagingException;
import javax.mail.Session;
import javax.mail.Transport;
import javax.mail.internet.InternetAddress;
import javax.mail.internet.MimeMessage;

import com.filenet.api.core.*;
import com.filenet.api.engine.EventActionHandler;
import com.filenet.api.events.ObjectChangeEvent;
import com.filenet.api.exception.EngineRuntimeException;
import com.filenet.api.exception.ExceptionCode;
import com.filenet.api.util.Id;

public class EMailAction implements EventActionHandler
{
    public void onEvent(ObjectChangeEvent event, Id subscriptionId) throws EngineRuntimeException
    {
        Document doc = (Document)event.get_SourceObject();
        try
        {
            Properties props = new Properties();
            props.put("mail.smtp.host", "smtp.company.net");
            props.put("mail.smtp.port", "25");
            Session session = Session.getInstance(props);
            try {
                Message msg = new MimeMessage(session);
                msg.setFrom(new InternetAddress("user1@company.com" ));
                InternetAddress[] address = {new InternetAddress("sysAdmin@company.com" )};
                msg.setRecipients(Message.RecipientType.TO, address);
                msg.setSubject("Test E-Mail through Java");
                msg.setSentDate(new Date());
                msg.setText("Document " + doc.get_Name() + " created with ID " + doc.get_Id());
                Transport.send(msg);
            }
            catch (MessagingException mex) {
                mex.printStackTrace();
            }
        }
        catch (Exception e)
        {
            throw new EngineRuntimeException(ExceptionCode.E_FAILED);
        }
    }
}
```

Upgrade ISRA servlet

As part of upgrading FileNet Image Services Resource Adapter (ISRA) software to run with IBM FileNet P8, you must do the following:

- Ensure that Application Engine has been upgraded.
- Ensure that existing IBM FileNet ISRA software is installed and configured.

For information on installing, configuring, and deploying FileNet ISRA, refer to the ISRA documentation on the IBM FileNet ISRA installation package.

TIP Use the Sample Application shipped with IBM FileNet ISRA to confirm that the ISRA installation was successful.

WARNING In an ISRA upgrade, take care to use the same library name (JNDI connection factory name) that has been previously set in the ISRA install. Changing this variable can cause conflicts when accessing documents.

- Do the following, as documented later in this task topic:
 - Upgrade the Application Engine ISRA Servlet, taking the following into account:
 - The servlet must be deployed on the same application server as FileNet ISRA.
 - The servlet does not need to be collocated with the Application Engine.
 - Configure Workplace site preferences for ISRA support.

ISRA SSL Support

The following table details the supported for SSL configurations.

SSL Configuration	SSL Support
ISRA Servlet and AE Collocated. AE configured for SSL logon redirect to a non-local host.	Supported
ISRA Servlet and AE Collocated. AE Configured for SSL logon redirect to a local host.	Supported
ISRA Servlet and AE Collocated. AE and ISRA Servlet running under SSL.	Not Supported
ISRA Servlet remote from AE. AE configured for SSL logon redirect to a non-local host.	Supported
ISRA Servlet remote from AE. AE configured for SSL logon redirect to a local host.	Supported
ISRA Servlet remote from AE. AE running under SSL, ISRA Servlet not running under SSL.	Supported
ISRA Servlet remote from AE. AE and ISRA Servlet running under SSL.	Not Supported

To upgrade the Application Engine ISRA Servlet

The FileNet P8 Application Engine installation CDs contain the ISRA servlet installation programs for the supported P8 AE platforms.

1. Log on to the application server machine:

UNIX

Log on as a user with write access to the `/bin` directory and read, write, execute access to the directory where you plan to install ISRA Servlet.

Windows

Log on as a member of the local Administrators group or as a user with equivalent permissions.

2. (WebSphere and WebLogic only) Back up and undeploy the ISRA Servlet application on the application server.
3. Stop the application server if it is running.
4. (JBoss only) Back up and undeploy the ISRA Servlet application.
5. Access the ISRA installation package, and start the Application Engine ISRA Servlet installation (upgrade) program:

UNIX

```
AE-ISRA-Servlet-4.0.2.0-operating_system.bin
```

Windows

```
AE-ISRA-Servlet-4.0.2.0-WIN.exe
```

6. Complete the installation (upgrade) program screens. For information on parameter values, see ["Installation and upgrade worksheet" on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8*.

HINT With the `Data > Filter > AutoFilter` command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the installation properties you must specify for the ISRA servlet installation program:

- Click the AutoFilter drop-down arrow in the "Installation or Configuration Program" column header and select ISRA Servlet Installer.
 - Click the AutoFilter drop-down arrow in the "Setup Type" column header, select Custom, and specify: Setup Type contains "Installation."
 - Click the AutoFilter drop-down arrow in all other column headers and select (All).
7. Check the file `AE_ISRA_Servlet_install_log-4_0_2_0.txt`, located in the `AE_israservlet_install path/FileNet` directory, to see if any errors occurred during the installation.

8. Install unlimited strength jar files.

Perform this step only if your site is generating or accepting unlimited strength user tokens. Your system must be configured as follows:

- The Application Engine ISRA Servlet is deployed on a different application server from the Application Engine server.
- The **Create unlimited strength key** option was selected in the Application Engine User Token Security step of the Application Engine installation.

NOTE Failure to perform the step will cause an EncryptionException when you log in to the IS Server.

9. (WebSphere and WebLogic only) Start the application server.

10. Deploy `AE_israservlet_install_path/FileNet/ApplicationEngineISRAServlet/ae_isra.war` in the same way you deployed the `app_engine.war` file for Workplace.

11. (JBoss only) Start the application server.

12. Verify the Application Engine ISRA Servlet installation. Do the following to use an available diagnostic tool to verify that the ISRA Servlet is installed and deployed correctly.

- a. Launch your browser.
- b. Enter the URL for the Application Engine ISRA Servlet. For example,

```
http://ApplicationEngineISRAServlet_servername:port/  
ApplicationEngineISRAServlet/ISRA
```

NOTE ApplicationEngineISRAServlet is the default context root. If you specified a different name for the context root when deploying the Application Engine ISRA Servlet, change the URL to match your configuration.

If the ISRA Servlet is installed and deployed correctly, a Congratulations message displays. For example:

```
Congratulations! ISRA Interface Servlet is configured at this URL.  
WcmApiConfigFile = D:\ISRAInterface\jsp\WEB-INF\WcmApiConfig.properties  
WcmApiConfig file exists  
  
CryptoKeyFile/UserToken = C:\Program  
Files\FileNet\Authentication\UTCryptoKeyFile.properties  
CryptoKeyFile/UserToken exists  
  
FileNet ISRA classes are in the classpath  
com.filenet.is.ra.cci.FN_IS_CciConnectionSpec
```

To configure the Workplace site preferences for ISRA support

Application Engine Setup installs a pre-configured external service called Image Service, which includes the parameterized values necessary to access FileNet Image Service libraries from Workplace. Enable the service by setting the *Image Service* value in Site Preferences to **Show** (the default is Hide), as described in the following procedure.

1. Sign in to Workplace as a user having the Application Engine Administrators access role.
2. Launch Site Preferences as follows:
 - a. Click **Admin**.
 - b. Click **Site Preferences**.
3. Click **External Services** from the left options list.
4. Click **Modify** for the Image Service (under External Reference Services).
The External Reference Service Settings site preference page displays.
5. Under General Information, locate *Show on Select File page* and change the value to Show.
6. Click **Accept**.
7. Click **Apply**.

To set the ISRA Interface Servlet URL

1. Click **Bootstrap**.
2. Under Preferences Settings, set the value of ISRA Interface Servlet URL. For example:

```
http://<servername>:<port>/ApplicationEngineISRAServlet/ISRA
```

NOTE ApplicationEngineISRAServlet is the default context root. If you specified a different name for the context root when deploying the Application Engine ISRA Servlet, change the URL to match your configuration.

3. Click **Apply**.
4. Click **Exit** to exit the Site Preferences.

To log on to Image Services via LDAP

- To log on to the Image Services library using your LDAP account, configure ISRA and Image Services for LDAP authentication. If the LDAP account with which you accessed Workplace is not valid for the Image Services library, or if LDAP authentication is not configured, you will be prompted to log on to the Image Services library.

For information on configuring LDAP authentication for ISRA, refer to the *ISRA Installation and Deployment Guide*. For information on configuring LDAP authentication for Image Services, refer to the *Image Services System Tools Reference Manual*.

To access IS library documents

- For information about accessing IS library documents, see FileNet P8 Help topic [User Help > Actions, preferences and tools > Actions > Documents > Add a document \(Workplace\)](#).

To install component software updates

1. To obtain the latest component software updates, and to determine whether additional interim fixes are needed, contact your service representative.
2. Open the readmes for the software updates and perform the installation procedures in the readmes on the component machine.

Remove software

This section includes:

- “Remove the IBM FileNet P8 documentation” on page 621
- “Remove Content Engine” on page 623
- “Remove Content Search Engine” on page 625
- “Remove Process Engine (Windows)” on page 627
- “Remove Process Engine (UNIX)” on page 629
- “Remove Application Engine (WebSphere)” on page 630
- “Remove Application Engine (WebLogic)” on page 632
- “Remove Application Engine (JBoss)” on page 633
- “Remove the Application Engine ISRA servlet” on page 635

For instructions on removing the Rendition Engine software, see the IBM FileNet P8 guide [FileNet P8 Documentation > FileNet P8 System Installation > Rendition Engine Installation and Upgrade](#).

Remove the IBM FileNet P8 documentation

The following topic explains how to remove the documentation for the FileNet P8 Platform and its expansion products.

NOTE Because of the number of application server configuration possibilities, these examples should be used only for reference. Your specific installation directories and application names may vary.

To remove the FileNet P8 documentation

NOTE In some Windows installations where NTFS is used for the file system (Not FAT or FAT32), there is a known issue with deleting files (and folders) that are longer than 256 characters. For example, if you use a default WebSphere installation location, you may encounter an error where the FileNet P8 Platform documentation files cannot be properly deleted due to the number of characters in the file/folder names. See the Microsoft Knowledge Base article <http://support.microsoft.com/?kbid=320081> for additional information about deleting files (and folders) in this environment.

To remove the FileNet P8 documentation from a WebSphere application server

1. Log on to the WebSphere FileNet P8 documentation server.
 - UNIX - Log on as a user with delete access to where the FileNet P8 Platform documentation files are installed.
 - Windows - Log on with a user account that has local Administrative (or Account Operators and Server Operators) rights.
2. Verify that the WebSphere server is running.
3. From the WebSphere administrative console (for example, <http://localhost:9060/ibm/console>), **Uninstall** the FileNet P8 documentation site (for example, *ecm_help.war*).
4. Delete the entire FileNet P8 documentation folder (for example, *ecm_help.war*) structure from the installation location.
5. Delete any `temp` folder(s) or log files for the FileNet P8 documentation.

WARNING Do not remove any other FileNet P8 application (for example, Workplace) files that are installed on the web application server.

To remove the FileNet P8 documentation from a WebLogic application server

1. Log on to the WebLogic application server.
 - UNIX - Log on as a user with delete access to where the **ecm_help** files are located.
 - Windows - Log on with a user account that has local Administrative rights (or Account Operators and Server Operators).
2. Verify that the WebLogic server is running.
3. From the WebLogic Server Administration Console (for example, <http://<machinename>:7001/console>), **Delete** the FileNet P8 documentation site (for example, *ecm_help*).

4. Delete all folders and files including any `temp` folder(s) or log files for the FileNet P8 documentation.

WARNING Do not remove any other FileNet P8 application (for example, Workplace) files that are installed on the web application server.

To remove the FileNet P8 documentation from a JBoss application server

1. Log on to the JBoss FileNet P8 documentation server.
 - UNIX - Log on as a user with delete access to where the FileNet P8 Platform documentation files are installed.
 - Windows - Log on with a user account that has local Administrative (or Account Operators and Server Operators) rights.
2. Stop the JBoss application server.
3. Delete all folders and files including any `temp` folder(s) or log files for the FileNet P8 documentation (for example, `ecm_help`).

WARNING Do not remove any other FileNet P8 application (for example, Workplace) files that are installed on the web application server.

Remove Content Engine

You can uninstall an entire Content Engine installation or selected Content Engine components.

NOTE Uninstalling Content Engine does *not* undeploy it. You must use the application server console or commands to remove the Content Engine EAR file from the application server.

Use one of the following procedures to uninstall part or all of Content Engine.

To remove part or all of a Content Engine installation using the Windows Control Panel

1. Choose **Control Panel > Add/Remove Programs**.
2. Highlight P8 Content Engine in the list of currently installed programs and click **Change/Remove** to launch the Uninstall P8 Content Engine program.
3. At the Uninstall Options screen, choose to uninstall some or all Content Engine components. If you choose to uninstall all components, continue at [Step 5](#); otherwise continue at [Step 4](#).
4. In the Choose Components screen, choose which components to uninstall.
5. In the Uninstall Complete screen, note the directories and files that cannot be removed by the uninstall program and choose whether to have the program restart the machine, or restart it manually.
6. Remove the remaining directories and files, as noted in the Uninstall Complete screen.
7. If you want to completely remove all traces of the Content Engine installation, delete the C:\Program Files\FileNet directory.

To remove an entire Content Engine installation (UNIX)

1. Navigate to the directory `install_path/FileNet/ContentEngine/_ceuninst`, created by the Content Engine installer.
2. To uninstall Content Engine interactively, run the following command:

```
ce_uninstaller
```

To remove Content Engine silently

In silent mode, the uninstaller removes all Content Engine Components.

- To uninstall Content Engine silently, run one of the following commands:

UNIX

```
ce_uninstaller -i silent
```

Windows

```
ce_uninstaller.exe -i silent
```

To remove data associated with Content Engine

After uninstalling Content Engine, you can remove its associated data, as follows:

1. Use the application server console or command lines to undeploy Content Engine.
2. Use your database tools to drop any databases or tablespaces for the object stores and the GCD.
3. Use your LDAP tools to delete users and groups you created in *Plan and Prepare Your Environment for IBM FileNet P8*.
4. Use your operating system commands to delete any directories, users and groups used for installing and administering Content Engine; and delete file-storage-area directories containing content (for example, documents) and index-area directories (K2 collections).

Remove Content Search Engine

To completely remove 4.5.x Content Search Engine (Autonomy K2) and collections from your IBM FileNet P8 platform installation, you must disable full-text indexing and remove the Autonomy K2 installations from all servers associated with the Content Engine.

CAUTION If you remove or disable Autonomy K2 before you disable CBR and full-text indexing in Enterprise Manager, your system will be rendered unusable and require considerable reconstruction.

NOTES

- This procedure presumes you have a running installation of 4.5.x Content Search Engine and that you have existing collections.
- If you intend to remove Content Engine, skip to step 4.
- The paths listed in this procedure assume you have used the suggested install path. If you have installed to another location, substitute the path as appropriate.

To remove Autonomy K2 and CBR

1. Launch Enterprise Manager.
2. Disable CBR for any classes that have been enabled for CBR.
 - a. Right-click the class you want to configure and click **Properties**.
 - b. Click the **General** tab.
 - c. Clear the **CBR Enabled** checkbox and click **OK**.
 - d. A dialog will ask if you wish to propagate this change to the subclasses of this class, click **Yes**.
 - e. Repeat this procedure to disable CBR for all classes.
3. Run an index job and re-index any of the following that were previously enabled:
 - Document
 - Annotation
 - Custom Object
 - Folder

This will disable all full-text indexing and content-based retrieval settings and will delete any associated collections. Once the indexing job is complete, proceed to step 4.

4. As *k2_os_user*, log on to each machine in your IBM FileNet Content Search Engine configuration, starting with the Master Administration Server, and remove the Autonomy K2 software installation as follows:

Windows

- a. Access the Add or Remove Programs control panel and select **IBM FileNet Content Search Engine**.
- b. Click **Change/Remove**.

UNIX

- a. Access `opt/verity/appser/bin`
- b. Stop the Autonomy K2 Administration Server service and the Tomcat application server. Use the following command, according to your environment:

HP-UX

```
/verity_install_directory/k2/_hpux/bin/k2adminstop
```

AIX

```
/verity_install_directory/k2/_hpux/bin/_rs6k43/bin/k2adminstop
```

Solaris

```
/verity_install_directory/k2/_hpux/bin/_ssol26/bin/k2adminstop
```

Linux

```
/verity_install_directory/k2/_hpux/bin/_ilnx21/bin/k2adminstop
```

- c. Change directory to:
`/opt/verity/_cseuninst`
 - d. Execute the following command:
`./CSE_uninstaller`
5. Delete the install directory.

Remove Process Engine (Windows)

This task includes Process Engine removal instructions for Windows platforms.

CAUTION You must remove the software in the order listed below. If you remove Image Services (Step 9) before you remove Process Engine (Step 3) the Process Engine software will be left in a state that will not allow removal with this procedure.

To remove the Process Engine software

1. Stop all of the following components that are running. For procedures and further details, see the IBM FileNet P8 help topic [FileNet P8 Administration > Enterprise-wide Administration > Shutdown and Startup](#).

Component	Server
Process Simulator	Process Simulator
Process Analyzer	Process Analyzer
Component Manager	Application Engine
Application Engine	Application Engine
Content Engine	Content Engine
Process Service	Process Engine
Process Task Manager	Process Engine or Application Engine

2. Navigate to Control Panel > Add/Remove Programs.
3. Click **Remove** for the Process Engine application.
4. Click **Next** at the Welcome screen for Process Engine uninstallation.
5. Click **Next** to stop FileNet BPM software components.
6. Click **Uninstall** to confirm you want to remove Process Engine for Windows 4.5.0 installation.
7. Indicate whether you want to reboot now or later.
8. Click **Finish** after you've read the summary information.
9. Click **Remove** for the FileNet Image Services 4.1.2 software.
10. Enter **Yes** to confirm you want to remove the Image Services software.
11. Press **Enter** to continue with the uninstall.
12. Close the Add/Remove snap-in.
13. Close the Control Panel.

CAUTION (SQL Server only) If you plan to reinstall Process Engine and will configure Process Engine to use a different SQL database, you must remove the database that was configured for the Process Engine installation. In addition, you must remove the following FileNet user IDs from the SQL Server Security folder before you reinstall Process Engine software:

- f_sw
- f_maint

Remove Process Engine (UNIX)

This task includes Process Engine removal instructions for UNIX platforms.

To remove the Process Engine software

1. Stop all of the following components that are running. For procedures and further details, see the IBM FileNet P8 help topic [FileNet P8 Administration > Enterprise-wide Administration > Shutdown and Startup](#).

Component	Server
Process Simulator	Process Simulator
Process Analyzer	Process Analyzer
Component Manager	Application Engine
Application Engine	Application Engine
Content Engine	Content Engine
Process Service	Process Engine
Process Task Manager	Process Engine or Application Engine

2. Enter the following after the FileNet software is shut down:

```
killfnsw -A -D -y
```

3. Log on to the Process Engine server as the root user.

4. On AIX, execute the following:

```
slibclean
```

5. If the `/fnsw/_pws_uninst2` directory exists, run the following command:

```
/fnsw/_pws_uninst2/pws_uninstall.bin
```

Otherwise run:

```
/fnsw/_pws_uninst/pws_uninstall.bin
```

6. Follow the prompts on the screen to remove the Process Engine software.

7. At a command prompt, run the following script:

```
/fnsw/etc/uninstall
```

The uninstall script shuts down the Process Engine software, removes the software from the `/fnsw` directory, and removes the directory structure under `/fnsw`. The uninstall script removes the Process Engine entries in the `/etc/services`, `/etc/system`, `/etc/inittab` and `/etc/devlink.tab` files. On an AIX-based Process Engine, the script also removes smit entries.

Remove Application Engine (WebSphere)

This task includes Application Engine removal instructions for WebSphere on UNIX and Windows platforms.

To remove the Application Engine software

1. Log on to the application server.

UNIX

Log on as a user with write access to the `/bin` directory.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions.

2. Log in to the WebSphere administrative console.
3. Uninstall the Workplace application.
 - a. Stop the Workplace process in the admin console.
 - b. Uninstall the Workplace application from **Enterprise Applications**.
4. Navigate to the `/_uninst` folder under the Application Engine installation location.
5. Run the uninstall program:

UNIX

```
uninstaller.bin
```

Windows

```
uninstaller.exe
```

NOTE For Windows, you can also use `Add/Remove Programs` from the Control Panel to remove the IBM FileNet Application Engine.

On Windows, when you click **Next** on the Application Engine Uninstaller Welcome screen, the second screen asks you to wait while Windows Task Manager service shuts down before continuing the uninstall. This can take a few moments. Wait for the shutdown to complete, then complete the uninstall wizard from the next screen.

6. Delete the Workplace folder:

```
WAS_HOME/temp/node_name/application_server_name/Workplace
```

7. Delete the `AE_install_path` directory.
8. (If Application Engine is the only IBM FileNet P8 application installed on the server) Search for the `vpd.properties` file. If it exists, delete it.

WARNING In the following step, do *not* remove the system environment variable if any other IBM FileNet P8 application is installed on the server.

9. (UNIX) Remove the P8TASKMAN_HOME system environment variable.

If Application Engine is the *only* IBM FileNet P8 application running on the server you must remove the P8TASKMAN_HOME system environment variable to complete the uninstallation.

Remove Application Engine (WebLogic)

This task includes Application Engine removal instructions for WebLogic on UNIX and Windows platforms.

To remove the Application Engine software

1. Log on to the application server.

UNIX

Log on as a user with write access to the `/bin` directory.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions.

2. Undeploy the Workplace application.
 - a. Stop the Workplace Web Application Module.
 - b. Delete the Workplace Web Application Module.
3. Navigate to the `/_uninst` folder under the Application Engine installation location.
4. Run the uninstall program:

UNIX

```
uninstaller.bin
```

Windows

```
uninstaller.exe
```

NOTE For Windows, you can also use `Add/Remove Programs` from the Control Panel to remove Application Engine.

On Windows, when you click **Next** on the Application Engine Uninstaller Welcome screen, the second screen asks you to wait while Windows Task Manager service shuts down before continuing the uninstall. This can take a few moments. Wait for the shutdown to complete, then complete the uninstall wizard from the next screen.

5. Delete the `AE_install_path` directory.
6. (If Application Engine is the only IBM FileNet P8 application installed on the server) Search for the `vpd.properties` file. If it exists, delete it.
7. (UNIX) Remove the `P8TASKMAN_HOME` system environment variable.

If Application Engine is the *only* IBM FileNet P8 application running on the server you must remove the `P8TASKMAN_HOME` system environment variable to complete the uninstallation.

WARNING Do *not* remove the system environment variable if any other IBM FileNet P8 application is installed on the server.

Remove Application Engine (JBoss)

This task includes Application Engine removal instructions for JBoss on Linux and Windows platforms.

To remove the Application Engine software

1. Log on to the application server:

UNIX

Log on as a user with write access to the `/bin` directory.

Windows

Log on as a member of the local Administrators group or a user with equivalent permissions.

2. Shut down JBoss.
3. Navigate to the `/_uninst` folder under the Application Engine installation location.
4. Run the uninstall program:

UNIX

```
uninstaller.bin
```

Windows

```
uninstaller.exe
```

NOTE For Windows, you can also use `Add/Remove Programs` from the Control Panel to remove Application Engine.

On Windows, when you click **Next** on the Application Engine Uninstaller Welcome screen, the second screen asks you to wait while Windows Task Manager service shuts down before continuing the uninstall. This can take a few moments. Wait for the shutdown to complete, then complete the uninstall wizard from the next screen.

5. (If Application Engine is the only IBM FileNet P8 application installed on the server) Search for the `vpd.properties` file. If it exists, delete it.
6. (UNIX and LINUX) Remove the `P8TASKMAN_HOME` system environment variable.

If Application Engine is the *only* IBM FileNet P8 application running on the server you must remove the `P8TASKMAN_HOME` system environment variable to complete the uninstallation.

WARNING Do *not* remove the system environment variable if any other IBM FileNet P8 application is installed on the server.

7. Remove temporary files and directories.
 - a. Remove the `Workplace.war` folder from `JBoss_HOME\server\default\deploy\`.
 - b. Remove the Temp working directory for Workplace from `JBoss_HOME\server\server_name\work\MainEngine\localhost\`
8. Delete the `AE_install_path` directory.

Remove the Application Engine ISRA servlet

This task includes Application Engine ISRA Servlet removal instructions for Windows and UNIX environments.

NOTE Since the installed names for the ISRA Servlet are configurable on the supported application servers, the information below may not be the same as your environment. Make the appropriate name changes as required for your environment.

To remove the Application Engine Servlet software

1. Log on to the application server.

UNIX

Log on as a user with write access to the /bin directory and the directory where ISRA Servlet is installed.

Windows

Log on as a user with Administrative rights.

2. Undeploy the ApplicationEngineISRAServlet application. This step is similar to that required to undeploy the Workplace application.

WebSphere

- a. Stop the ApplicationEngineISRAServlet process in the Admin console.
- b. Uninstall the ApplicationEngineISRAServlet application from Enterprise Applications.

WebLogic

- a. Stop the ApplicationEngineISRAServlet Web Application Module.
- b. Undeploy or delete the ApplicationEngineISRAServlet Web Application Module.

JBoss

- a. Shut down JBoss.

3. Navigate to the `/_uninstISRA` directory under the ISRA Servlet installation location.

4. Run the uninstall program:

UNIX

`uninstall.bin`

Windows

`uninstall.exe`

NOTE For Windows, you can also use Add/Remove Programs from the Control Panel to remove the FileNet Application Engine ISRA Servlet.

5. Navigate to the `/FileNet` directory. If there is no other FileNet software installed under this directory, delete the `/FileNet` directory. If there is some other FileNet software installed under this directory, delete only the `/ApplicationEngineISRAServlet` subdirectory.

6. (WebSphere only) Delete the following temporary working folders for the Application Engine ISRA Servlet:

`WAS_Home\WebSphere\AppServer\profiles\default\installedApps\servername\ApplicationEngineISRAServlet.ear\`

Appendixes

This appendix section contains the following major topics:

- [“Configuration Manager user interface reference” on page 645](#)
- [“Configuration Manager command-line reference” on page 695](#)
- [“Encrypt passwords” on page 700](#)
- [“New Content Engine classes and properties” on page 702](#)
- [“Manually redeploy Content Engine” on page 721](#)

Configuration Manager reference

Configuration Manager is a tool for configuring and deploying new or upgraded instances of the Content Engine application on an application server. This reference appendix provides details about the tool in the following general topics:

- [“Overview of Configuration Manager” on page 639](#)
- [“Handling passwords in Configuration Manager” on page 643](#)
- [“Configuration Manager user interface reference” on page 645](#)
- [“Configuration Manager command-line reference” on page 695](#)

Overview of Configuration Manager

Configuration Manager prepares the Content Engine application instance for deployment on the application server and deploys the application. Configuration Manager creates one or more unique Content Engine configuration profiles. Each profile is a collection of information required to complete any one of the following actions:

- Configure and deploy a new Content Engine Server instance.
- Configure and deploy an upgraded Content Engine Server instance.
- Create the JDBC data sources for a Content Engine object store database or tablespace.

Configuration profile concepts

The information for a profile is collected in XML files in the form of properties and values that describe the associated configuration and deployment tasks. You must provide values for the profile properties that are specific to each configuration at your site, such as the application server name. The XML files are stored in a directory that is unique to a given profile. Because the profile name is used for the directory name, you must provide a profile name that is a valid directory name for your operating system. By default, the profiles are stored in the `ce_install_path/tools/configure/profiles` directory, where `ce_install_path` is the location where Content Engine server software is installed.

If needed, you can create multiple profiles, each of which supports a unique Content Engine instance. These instances can be located on the same server or on different servers, depending on your deployment preferences, the managed or non-managed nature of your application servers, and your clustering or high-availability requirements.

Use the Configuration Manager tool to perform the following tasks that are associated with a Content Engine configuration profile:

- **Set the application server properties.** Content Engine will be deployed as an application on the application server. You need to specify the application server type, the software version number, the server name, the administrative user name and password, and other settings. The application server type determines some of the properties and their default values. All profiles include the application server properties. By default, the application server properties are stored in the `ce_install_path/tools/configure/profiles/myprofile/applicationserver.xml` file, where `myprofile` is the name of your profile.

You provide the application server properties when you create a profile using the New Configuration Profile Wizard, and you can edit the application server properties at any time as needed. See [“Creating a new profile” on page 651](#) or [“Editing the application server properties” on page 662](#) for detailed procedures.

- **Configure the Java Database Connectivity (JDBC) data sources.** The JDBC data source information is used by Content Engine to connect to Global Configuration Data (GCD) and object store databases. The application server uses the JDBC data source information to connect Content Engine to the database. You need to specify the JDBC provider type, the database name, the database user name and password, and other settings. The JDBC provider type determines some of the properties and their default values. When you create a new profile for a Content Engine instance, configure the GCD data source settings first. Then

create another profile for the object store data source and select only the Configure JDBC task for the profile. You will need to create a separate profile for each additional object store data source. By default, the JDBC properties are stored in the `ce_install_path/tools/configure/profiles/myprofile/configurejdbc.xml` file, where `myprofile` is the name of your profile.

See [“Editing the Configure JDBC Data Source task” on page 664](#) for the procedure to set the JDBC data source properties once you have created a profile.

- **Configure the directory service (LDAP) provider.** Content Engine connects to the directory service provider to authenticate users. Because the application server uses the directory service information to connect the Content Engine to the directory service provider, you cannot skip this task even if you have already configured your application server prior to installing Content Engine. You need to specify the directory service provider type, the user and group naming conventions for your provider, the directory service user name for the Content Engine to use for authentication, and other settings. The LDAP provider type that you select determines some of the properties and their default values. By default, the LDAP properties are stored in the `ce_install_path/tools/configure/profiles/myprofile/configureldap.xml` file, where `myprofile` is the name of your profile.

See [“Editing the Configure LDAP task” on page 669](#) for the procedure to set the LDAP properties once you have created a profile.

- **Configure the Content Engine bootstrap settings.** The bootstrap information is needed for creating the GCD and for starting Content Engine. By default, the bootstrap properties are stored in the `ce_install_path/tools/configure/profiles/myprofile/configurebootstrap.xml` file, where `myprofile` is the name of your profile.

See [“Editing the Configure Bootstrap Properties settings” on page 680](#) for the procedure to set the bootstrap properties once you have created a profile.

- **Deploy the Content Engine application.** This action deploys the Content Engine EAR file with the JDBC, LDAP, and bootstrap settings on the application server. Any time that you update the properties for an existing deployed Content Engine instance or update the Process Engine Client files on the Content Engine, you must redeploy for the changes to take effect. By default, the deployment properties are stored in the `ce_install_path/tools/configure/profiles/myprofile/deployapplication.xml` file, where `myprofile` is the name of your profile.

NOTE Once the Content Engine application is deployed, you use Enterprise Manager to customize Content Engine for your site’s requirements.

See [“Editing the Deploy Application task” on page 682](#) for the procedure to edit the deployment properties once you have created a profile.

- **Check the status of a particular configuration task.** Status messages are displayed when you run a task. You can also explicitly display the task status any time after you run the task. See [“Checking the task status and session logs” on page 693](#).
- **Configure a profile for upgrading an existing Content Engine from version 3.5.x or 4.0.x.** An upgrade profile includes the Upgrade Bootstrap task and the Deploy Application task. By default, the upgrade bootstrap properties are stored in the `ce_install_path/tools/configure/profiles/myprofile/upgradebootstrap.xml` file, and the deployment

properties are stored in the `ce_install_path/tools/configure/profiles/myprofile/deployapplication.xml` file, where `myprofile` is the name of your profile.

See [“To create a new profile for an upgrade” on page 655](#) for a detailed procedure.

Using the graphical and command-line user interfaces

Configuration Manager has a graphical user interface (GUI) and a command-line interface (CLI). Both versions of the tool create the configuration XML files with the property values specific to your site, run tasks to apply your settings, display task status results, and deploy the Content Engine application. The GUI version of the tool displays the properties and default values that you need to set. When you save your changes in the GUI tool, the configuration XML files are updated for you. If you use the CLI version of the tool, you must first generate the configuration XML files with the tool, and then manually edit the default values in the files using a text editor. After you edit the files, you use Configuration Manager to execute the tasks to apply the saved settings. Once you have set the required values, you use either version of Configuration Manager to deploy the Content Engine application.

The configuration XML files that you create with either version of the Configuration Manager tool can be used with the other version. For example, you can create the files with the CLI version, and then use the GUI version to open the profile, edit the values, and run the configuration tasks.

NOTE The GUI version and the CLI version handle passwords differently. For information on how to work with passwords in Configuration Manager, see [“Handling passwords in Configuration Manager” on page 643](#).

Gathering Configuration Manager values using the Installation and Upgrade Worksheet

Refer to [“Installation and upgrade worksheet” on page 229](#) in *Plan and Prepare Your Environment for IBM FileNet P8* for details on how to gather the values to supply to Configuration Manager.

HINT To quickly see only the properties you must specify for Configuration Manager in the default worksheet file (`p8_worksheet.xls`), perform the following actions:

- Click the **AutoFilter** drop-down arrow in the "Installation or Configuration Program" column header and select one of these Configuration Manager options:
 - CM: Set Application Server Properties
 - CM: Configure JDBC Data Sources
 - CM: Configure LDAP
 - CM: Configure Bootstrap Properties
 - CM: Upgrade Bootstrap Properties
 - CM: Deploy Application
- Click the **AutoFilter** drop-down arrow in the "Setup Type" column header, select Custom, and specify one of the following, depending on the properties to set:

- For CM: Set Application Server Properties, specify Setup Type contains "Installation, Upgrade".
- For CM: Configure JDBC Data Sources, specify Setup Type contains "Installation".
- For CM: Configure LDAP, specify Setup Type contains "Installation".
- For CM: Configure Bootstrap Properties, specify Setup Type contains "Installation".
- For CM: Upgrade Bootstrap Properties, specify Setup Type contains "Upgrade".
- For CM: Deploy Application, specify Setup Type contains "Installation, Upgrade".
- Click the AutoFilter drop-down arrow in all other column headers, and select (All).

Handling passwords in Configuration Manager

To provide the highest possible security, Configuration Manager's default settings do not save passwords from the GUI application. The password save setting is controlled by the `cm.allowPasswordSave` key in the application's `config.ini` file. While the default setting provides greater password security, it does require you to reenter all necessary passwords each time you start the GUI. When you close Configuration Manager, the passwords are removed from memory. When you open Configuration Manager again to run a saved task, you will need to reenter each of the following passwords to run the tasks:

- The application server administrator password. Select **File > Update Application Server Properties** to enter the password.
- The database administrator password. Edit the Configure JDBC Data Sources task.
- The directory service bind user password. Edit the Configure LDAP task.
- The bootstrap user password and the master key. Edit the Configure Bootstrap task.

The Configuration Manager command line passes the passwords from an XML configuration file to the required application when you execute a task, but does not save or change password entries in the XML configuration file. When you edit the XML configuration file, you can enter either an encrypted password or a plain text password. However, plain text passwords are not recommended. For the procedure to encrypt passwords for the XML file, see [“Encrypt passwords” on page 700](#).

If you later use the Configuration Manager GUI to open a profile with an XML configuration file that you manually edited, the GUI version reads the passwords in the XML file, and will overwrite the existing passwords when you save the file. If the GUI is not configured to save passwords (default setting), the passwords in the XML file will be overwritten with a blank entry. If the GUI is configured to save passwords, the original values or any changed values are encrypted and saved to the XML file.

To change the password save option for the graphical user interface

1. If Configuration Manager is running, close the application.
2. Use a text editor to open the `ce_install_path/tools/configure/CMUI/configuration/config.ini` file, where `ce_install_path` is the location where Content Engine server software is installed.
3. Change the setting for `cm.allowPasswordSave` as follows:
 - To save passwords entered in the GUI, use `cm.allowPasswordSave=true`.
 - To not save passwords (default), use `cm.allowPasswordSave=false`.
4. Save the file.
5. Restart the Configuration Manager GUI.

Accessing the Configuration Manager log files

Configuration Manager maintains three types of log files:

- The Configuration Manager session log file. The session log contains brief information about the tasks that were run in the current session of the Configuration Manager graphical user interface (GUI). As you run additional tasks for the same or a different profile, new messages are added to the log. The messages in the session log are not time-stamped. When you exit Configuration Manager, the session log is cleared. You can view the session log from within the GUI, or you can open the session log file in a text editor:

```
ce_install_path/tools/configure/logs/P8ConfigMgr_Console.log
```

For more information on viewing the session log, see [“To view the session log” on page 693](#).

- The Configuration Manager error log. The error log contains details about any error occurring during execution of a task. The error messages are time-stamped, and include more information than is displayed in the session log. Unlike the session log, the error log is cumulative and contains data for more than one session. You can open the error log file in a text editor:

```
ce_install_path/tools/configure/logs/P8Installer_common.log error.
```

- Task status file. When you run a task in Configuration Manager, the task execution messages are displayed in the Console pane (GUI) or on the command line (CLI), and the status messages are written to a text file in the following directory:

```
ce_install_path/tools/configure/profiles/myprofile/status
```

The file name is based on the task that was run. You can check the status on a task at any time to review the status completion messages. For more information on checking the task status from the GUI, see [“To check the status of a task” on page 693](#). For more information on checking the task status from the CLI, see [“Configuration Manager syntax” on page 695](#).

Configuration Manager user interface reference

The Configuration Manager graphical user interface (GUI) lets you create, view, and edit your Content Engine configuration profile. You can also make a copy of an existing profile, run configuration tasks, view the session logs, and check the status of a particular task.

NOTE If you need an accessible version of Configuration Manager, use the command line interface instead of the GUI. See [“Configuration Manager command-line reference” on page 695](#).

Starting and stopping Configuration Manager

Configuration Manager is installed by the Content Engine installation program.

To start Configuration Manager

- Run one of the following commands, depending on the operating system that runs on the machine where you installed Content Engine:

UNIX

```
ce_install_path/tools/configure/CMUI/cmui
```

where *ce_install_path* is the location where Content Engine server software is installed

Windows

Perform one of the following actions:

- Double-click the **FileNet Configuration Manager** desktop shortcut.
- Select **Start > All Programs > IBM FileNet P8 Platform > FileNet Configuration Manager**.
- Run `ce_install_path\tools\configure\CMUI\cmui.exe`.

where *ce_install_path* is the location where Content Engine server software is installed

To stop Configuration Manager

- Select **File > Exit**.

If you have not saved your changes, you will be prompted to save them when you exit Configuration Manager.

Configuration Manager window

The initial Configuration Manager window consists of the Content Engine Task View pane on the left side, the Task Editor pane on the upper right side, and the Console pane in the lower right side. The following table describes each pane:

Pane	Description
Content Engine Task View	Displays a profile and the tasks for that profile. Only one profile can be open at a time.
Task Editor	Displays the properties and values for a selected task. The Task Editor pane is empty until a specific task is selected from the Content Engine Task View pane. Each open task is displayed in a separate tab in the Task Editor pane. More than one Task tab can be displayed at a time.
Console	Displays task execution messages, results from the Check Status command, or the session log.

If you close a pane, you can restore it by using the **Window > Show View** command.

Main toolbar

The Main toolbar is located just below the menu bar. The Main toolbar contains the following icons for working with your profiles:

Icon	Command name and Description
	<p>Create a Configuration Profile</p> <p>Click this icon to create a new configuration profile. The current configuration profile will be closed, and the New Configuration Profile Wizard starts. If the existing open profile has been changed, you will be prompted to save your changes.</p>
	<p>Create Upgrade Configuration Profile</p> <p>Click this icon to create a configuration profile for upgrading an existing Content Engine server. The current configuration profile will be closed, and if there have been changes, you will be prompted to save your changes. The New Configuration Profile Wizard starts.</p>
	<p>Open a Configuration Profile</p> <p>Click this icon to open an existing profile. The current configuration profile will be closed, and if there have been changes, you will be prompted to save your changes. The New Configuration Profile Wizard starts.</p>
	<p>Update Application Server Properties</p> <p>Click this icon to view or edit the application server properties for the current profile.</p>
	<p>Run All Tasks</p> <p>Click this icon to run all the enabled tasks for the current profile.</p> <p>Click the down arrow to the right of this icon to select a single task to run.</p>
	<p>Save</p> <p>Click this icon to save the current configuration profile settings.</p>
	<p>View Configuration Manager Log File</p> <p>Click this icon to view the Configuration manager session log. The session log is cleared when you open Configuration Manager.</p>

Profile toolbar

The Profile toolbar is located at the upper right of the Content Engine Task View pane. The Profile toolbar contains the following icons for working with a selected profile:

Icon	Command name and Description
	<p>Edit the Selected Task</p> <p>Click this icon to open the task in the Task Editor pane to view or edit the property values for that task.</p>
	<p>Run a Single Task</p> <p>Click this icon to run the selected task.</p>
	<p>Check the Status of the Selected Task</p> <p>Click this icon to display the task status in the Console pane. The Check Status results are the same as shown from the command line.</p>

Console toolbar

The Console toolbar is located at the upper right of the Console pane. The Console toolbar contains the following icons for working with the Console pane:

Icon	Command name and Description
	<p>Clear Console</p> <p>Click this icon to clear the display for the currently active tab in the Console pane. Clearing the display does not affect any log contents.</p>
	<p>Scroll Lock</p> <p>Click this icon to enable or disable the scroll bars for the currently active tab in the Console pane. When the scroll bars are locked, information in the console might scroll out of view.</p>
	<p>Pin Console</p> <p>Click this icon to lock or unlock the current console location. When pinned (or locked), you cannot move the Console pane to a new location or resize the Console pane.</p>
	<p>Display Selected Console</p> <p>Click this icon to select the console tab to display. Select the desired tab from the list of recently viewed consoles.</p>
	<p>Open Console</p> <p>Click this icon to new tab with the current Console view. For example, you can open a second tab for execution messages for the Deploy Application task.</p>

Menus and commands

Menu and command names	Description
File	Provides commands for creating, saving, or opening a configuration profile.
New Configuration Profile	Creates a new configuration profile. See “Creating a new profile” on page 651 for detailed procedures to create a profile.
Create Upgrade Configuration Profile	Creates a profile for upgrading Content Engine. See “Creating a new profile” on page 651 for detailed procedures to create a profile.
Open Configuration Profile	Opens an existing profile for viewing or editing. Keyboard shortcut: Ctrl+O
Close Configuration Profile	Closes the current configuration profile.
Save	Saves your changes to the active task. Keyboard shortcut: Ctrl+S
Save All	Saves your changes to all open tasks. Keyboard shortcut: Ctrl+Shift+S
Save Copy of Profile As	Saves the current profile with a new name or path.
Update Application Server Properties	Displays the application server settings for the current profile for you to edit. See “Editing the application server properties” on page 662 for the detailed procedure to update the application server properties for an existing profile. Keyboard shortcut: Ctrl+U
Run All	Runs all the tasks in the profile to apply your settings. If the Task Enabled setting is turned off for a particular task, that task is skipped when you select Run All Tasks. Keyboard shortcut: Ctrl+R
Exit	Closes Configuration Manager.
Window	Provides commands that give you access to logs and various views of information.
View Log File	Displays the session log in the Console pane. The session log lists results from tasks that you have run since you started Configuration Manager.
Show View	Provides a list of views available. Use to restore a view that you closed previously.

Menu and command names	Description
Help	Provides information about the Configuration Manager application.
About Configuration Manager	Opens a page that provides the copyright and related information about Configuration Manager.

Working with Configuration Manager

The following procedures explain how to use the Configuration Manager commands, icons, and panes to work with your profiles and configuration tasks.

Configuring a Content Engine instance

You must complete the following steps in Configuration Manager to configure a Content Engine instance:

1. Create a configuration profile. See [“Creating a new profile” on page 651](#).
2. Edit the configuration tasks included in the profile. See one or more of the following:
 - [“Editing the Configure JDBC Data Source task” on page 664](#)
 - [“Editing the Configure LDAP task” on page 669](#)
 - [“Editing the Configure Bootstrap Properties settings” on page 680](#)
 - (Upgrades only) [“Editing the Upgrade Bootstrap settings” on page 681](#)
3. Apply the configuration settings by running the tasks. See [“Running a task” on page 692](#).
4. Deploy the application by running the Deploy Application task. Because deployment can take a long time, it is a best practice to run the Deploy Application task after you have completed all other configuration tasks. See [“Editing the Deploy Application task” on page 682](#).

Creating a new profile

You can create a new configuration profile or a upgrade profile.

To create a new configuration profile

1. Create a new profile using one of these methods:
 - Click **Create a Configuration Profile** in the toolbar.
 - Select **File > New Configuration Profile**.
2. If a profile is already open, the Action Required message box opens. Respond to the messages as follows:
 - a. Click **Yes** to continue creating a new profile, or click **No** to cancel.
 - b. If you selected **Yes** and your current profile has any unsaved changes, the Save Resource message box opens. Click **Yes** to save your changes, click **No** to continue without saving your changes, or click **Cancel**.

The Create New Configuration Profile Wizard opens. Use the following table to complete the wizard screens:

In this screen...	Perform this action...
Configuration Profile Information	<ul style="list-style-type: none"> • Provide the following information for the profile: <ul style="list-style-type: none"> – Enter a name for the profile. The name must be valid as a directory name for your operating system. Configuration Manager will create a directory with the profile name for storing the configuration files associated with this profile. For more information of profiles, see “Configuration profile concepts” on page 639. – Specify the path for the profile. Either type in the full path to the profile directory or click Browse to locate the directory. The default path is <code>ce_install_path/tools/configure/profiles</code>, where <code>ce_install_path</code> is the location where Content Engine is installed. • Click Next. • Choose an application server type for the profile. Select WebSphere, JBoss, or WebLogic, and then click Next. <p>NOTE If you click Finish instead of Next, you will need to come back later to supply the required application server properties before you can run the configuration tasks.</p> • Continue at one of the following screens: <ul style="list-style-type: none"> – “Set Application Server Properties for WebSphere” on page 653 – “Set Application Server Properties for JBoss” on page 654 – “Set Application Server Properties for WebLogic” on page 654

In this screen...	Perform this action...
Set Application Server Properties for WebSphere	<p>This screen is displayed only if you selected WebSphere in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the GCD, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the name of the WebSphere application server cell where Content Engine will be deployed. – If you have already configured WebSphere to use certificates, clear the “Do not use SSL certificates for server communications” check box. Otherwise, leave the check box selected. <p>NOTE Selecting this check box will change your WebSphere settings for communicating with other servers, such as Application Engine.</p> • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 655.

In this screen...	Perform this action...
Set Application Server Properties for JBoss	<p>This screen is displayed only if you selected JBoss in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the name of the JBoss application server name where Content Engine will be deployed. • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 655.
Set Application Server Properties for WebLogic	<p>This screen is displayed only if you selected WebLogic in the previous screen.</p> <ul style="list-style-type: none"> • Provide the following information for the application server: <ul style="list-style-type: none"> – Select the application server version from the list. – Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. – Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the GCD, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. – Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. – Enter the application server SOAP port number. – Enter the machine name or the IP address of the local host for the application server host. – Enter the fully qualified path to the WebLogic application server user projects directory, or click Browse to locate the directory.

In this screen...	Perform this action...
Set Application Server Properties for WebLogic <i>(continued)</i>	<ul style="list-style-type: none"> – Enter the WebLogic application server domain name where Content Engine will be deployed. – Enter the name of the WebLogic application server name where Content Engine will be deployed. • Click Next. • Continue with “Select the tasks that you want included in the Configuration Profile” on page 655.
Select the tasks that you want included in the Configuration Profile	<ul style="list-style-type: none"> • Select the tasks that you want to include in this profile. For a new Content Engine installation, you need to complete all four configuration tasks: <ul style="list-style-type: none"> – Configure JDBC Data Sources – Configure LDAP – Configure Bootstrap – Deploy Application • Click Finish to create the profile and save the application server properties.

The profile you created will be displayed as an icon in the left-hand pane, along with icons for the tasks for the tasks you selected. The default profile contains the following tasks:

- Configure JDBC Data Sources
- Configure LDAP
- Configure Bootstrap Properties
- Deploy Application

To create a new profile for an upgrade

Use the following procedure to create a profile for upgrading Content Engine. You use the upgrade configuration profile to update the existing Content Engine bootstrap properties and deploy the updated EAR file. In order to create an upgrade profile, the Content Engine installation program must have detected an existing Content Engine installation.

1. Start the Create a Profile Wizard using one of these methods:
 - Click **Create a Configuration Profile for Upgrade** in the toolbar.
 - Select **File > Create Upgrade Configuration Profile**.

2. If a profile is already open, the Action Required message box opens. Respond to the messages as follows:
 - a. Click **Yes** to continue creating a new profile, or click **No** to cancel.
 - b. If you selected **Yes** and your current profile has any unsaved changes, the Save Resource message box opens. Click **Yes** to save your changes, click **No** to continue without saving your changes, or click **Cancel**.
3. Complete the wizard screens as follows:

In this screen...	Perform this action...
Upgrade Profile Path	<ul style="list-style-type: none"> • Provide the following information for the profil <ul style="list-style-type: none"> – Enter a name for the profile. The name must be valid as a directory name for your operating system. Configuration Manager will create a directory with the profile name for storing the configuration files associated with this profile. For more information of profiles, see “Configuration profile concepts” on page 639. – Specify the path for the profile. Either type in the full path to the profile directory or click Browse to locate the directory. The default path is <i>ce_install_path/tools/configure/profiles</i>, where <i>ce_install_path</i> is the location where Content Engine is installed. • Click Next.
Upgrade Configuration Profile Creation Summary	<ul style="list-style-type: none"> • Review the summary information. • Click Next. • Continue at one of the following screens: <ul style="list-style-type: none"> – “Set Application Server Properties for WebSphere” on page 653 – “Set Application Server Properties for JBoss” on page 654 – “Set Application Server Properties for WebLogic” on page 654

In this screen...	Perform this action...
Set Application Server Properties for WebSphere	<p>This screen is displayed only if you selected WebSphere in the previous screen.</p> <p>Provide the following information for the application server”</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the GCD, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. • Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. • Enter the application server SOAP port number. • Enter the name of the WebSphere application server cell where Content Engine will be deployed. • If you have already configured WebSphere to use certificates, clear the “Do not use SSL certificates for server communications” check box. Otherwise, leave the check box selected. <p>NOTE Selecting this check box will change your WebSphere settings for communicating with other servers, such as Application Engine.</p> <ul style="list-style-type: none"> • Click Finish.

In this screen...	Perform this action...
Set Application Server Properties for JBoss	<p>This screen is displayed only if you selected JBoss in the previous screen.</p> <p>Provide the following information for the application server:</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the name of the JBoss application server name where Content Engine will be deployed. • Click Finish.

In this screen...	Perform this action...
Set Application Server Properties for WebLogic	<p>This screen is displayed only if you selected WebLogic in the previous screen.</p> <p>Provide the following information for the application server:</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the application server administrator user name. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the GCD, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. • Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. • Enter the application server SOAP port number. • Enter the machine name or the IP address of the local host for the application server host. • Enter the fully qualified path to the WebLogic application server user projects directory, or click Browse to locate the directory. • Enter the WebLogic application server domain name where Content Engine will be deployed. • Enter the name of the WebLogic application server name where Content Engine will be deployed. • Click Finish.

The profile you created is displayed as an icon in the left-hand pane with the name that was presented in the confirmation screen, along with icons for the **Upgrade Bootstrap** task and the **Deploy Application** task.

Opening and closing an existing profile or task

You can save a profile, and open it later to edit the saved settings or to run tasks.

To open an existing profile

You can have one profile open at a time in Configuration Manager.

1. Start the Open Configuration Profile Wizard using one of these methods:
 - Click **Open a Configuration Profile** in the toolbar.
 - Select **File > Open Configuration Profile**.
2. If a profile is already open, the Action Required message box opens. Respond to the messages as follows:
 - a. Click **Yes** to continue creating a new profile, or click **No** to cancel.
 - b. If you selected **Yes** and your profile has any unsaved changes, the Save Resource message box opens. Click **Yes** to save your changes, click **No** to continue without saving your changes, or click **Cancel**.
3. Either type in the full path to the profile directory, or click **Browse** to select the Profile directory. Select the desired profile from the Browse for Directory dialog box, and click **OK**.
4. Click **Finish**.

To open a task

More than one task tab can be open at a time in the Task Editor pane.

1. If the profile is collapsed in the Content Engine Task View pane, click **+** next to the profile name to expand it.
2. Use one of the following methods to open the desired task:
 - Click the **task name** in the Content Engine Task View pane, and then click **Edit Selected Task** in the Profile toolbar.
 - Double-click the **task name** in the Content Engine Task View pane. A new tab opens in the Task Editor pane for the selected task. You can then view and edit the values displayed in the Task Editor pane.

To switch between open tasks in the Task Editor pane

- Click the **tab name** in the Task Editor pane for the desired task.

To close a profile

- Select **File > Close Configuration Profile**.

You will be prompted to save any changes when you close a profile. Passwords are removed from memory when you close a profile.

To close a task

1. If the task is not the actively selected task, click the **tab name** in the Task Editor pane for the desired task.
2. Click **Close** in the tab for the task.

If you have made changes to the task property settings, the Save Resource message box opens.

3. Respond to the messages as follows:
 - Click **Yes** to save the changes and close the profile.
 - Click **No** to close the profile without saving your changes.
 - Click **Cancel** to cancel.

Editing the application server properties

You initially provide the application server properties when you create a new profile. You can open the application server properties for editing at any time. The application server properties must be set before you run any tasks. You cannot change the application server type for an existing profile.

To edit the application server properties

1. Click **Update Application Server Properties** in the main toolbar, or select **File > Update Application Server properties**.
2. Provide values for the application server, using the following table:

In this screen...	Provide this information...
Set Application Server Properties for WebSphere	<p>This screen is displayed only if you selected WebSphere when you created the profile.</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the application server administrator user name, for example, <i>ce_appserver_admin</i>. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the GCD, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. • Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see “Handling passwords in Configuration Manager” on page 643. • Enter the application server SOAP port number. • Enter the name of the WebSphere application server cell where Content Engine will be deployed. • If you have already configured WebSphere to use certificates, clear the “Do not use SSL certificates for server communications” check box. Otherwise, leave the check box selected. <p>NOTE Selecting this check box will change your WebSphere settings for communicating with other servers, such as Application Engine.</p>

In this screen...	Provide this information...
Set Application Server Properties for JBoss	<p>This screen is displayed only if you selected JBoss when you created the profile.</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the name of the JBoss application server name where Content Engine will be deployed.
Set Application Server Properties for WebLogic	<p>This screen is displayed only if you selected WebLogic when you created the profile.</p> <ul style="list-style-type: none"> • Select the application server version from the list. • Enter the fully qualified path to the application server installation directory, or click Browse to locate the directory. • Enter the application server administrator user name, for example, <i>ce_appserver_admin</i>. Use the directory service user account that has been assigned the application server administrative role. This account is used to manage the application server domain/profile, to configure the data sources and connection pools for the GCD, and to deploy the Content Engine application. If Administrative Security is already enabled, use an existing administrative user account. • Enter the application server administrative password. The password will be encrypted for you. For more information on passwords, see "Handling passwords in Configuration Manager" on page 643. • Enter the application server SOAP port number. • Enter the machine name or the IP address of the local host for the application server host. • Enter the fully qualified path to the WebLogic application server user projects directory, or click Browse to locate the directory. • Enter the WebLogic application server domain name where Content Engine will be deployed. • Enter the name of the WebLogic application server name where Content Engine will be deployed.

3. Click **Finish**.

Editing the Configure JDBC Data Source task

The JDBC data source information is used by Content Engine to connect to Global Configuration Data (GCD) and object store databases. You should maintain a separate profile for each data source.

To edit the JDBC data source settings

1. Double-click **Configure JDBC Data Sources** in the Content Engine Task View pane to open the task for editing.
2. Provide the property values for your database, using the appropriate table for your database type:

DB2® for Linux, UNIX, Windows

In this field...	Provide this information...
JDBC driver name	Select "DB2 Universal JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD tablespace or database. For example, FNGCDDSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the GCD and object stores.
Database name	The name of the GCD or object store database.
Database user name	The name of the DB2 GCD or object store tablespace user.
Database password	The password for the DB2 GCD or object store tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .

In this field...	Provide this information...
Task enabled	Turn on the Task enabled check box to execute the configure JDBC Data Sources task later. The default is enabled.

DB2 for z/OS®

In this field...	Provide this information...
JDBC driver name	Select "DB2 for z/OS Universal JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD or object store tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD or object store tablespace or database. For example, FNGCDDSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the DB2 database instance in which you create tablespaces for the GCD and object stores.
Database name	The name of the GCD or object store database instance name.
Database user name	The name of the DB2 GCD or object store tablespace user.
Database password	The password for the DB2 GCD or object store tablespace user. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .
Task enabled	Turn on the Task enabled check box to execute the configure JDBC Data Sources task later. The default is enabled.

MS SQL Server

In this field...	Provide this information...
JDBC driver name	Select "Microsoft JDBC Driver 2005" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD or object store tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD or object store tablespace or database. For example, FNGCDDSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the SQL Server database instance in which you create databases for the GCD and object stores.
Database name	The name of the GCD or object store database for SQL Server.
Database user name	The name of the SQL Server user with administrative rights to the GCD or object store database.
Database password	The password for the SQL Server user with administrative rights to the GCD or object store database. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .
Task enabled	Turn on the Task enabled check box to execute the configure JDBC Data Sources task later. The default is enabled.

Oracle (not RAC support)

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD or object store tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD or object store tablespace or database. For example, FNGCDDSXA.
Database server name	The host name of the machine where the database software is installed.
Database port number	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database name	The SID of the Oracle database containing the GCD or object store tablespace.
Database user name	The name of the Oracle GCD or object store tablespace owner.
Database password	The password for the Oracle GCD or object store tablespace owner. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .
Task enabled	Turn on the Task enabled check box to execute the configure JDBC Data Sources task later. The default is enabled.

Oracle RAC

In this field...	Provide this information...
JDBC driver name	Select "Oracle JDBC Driver (RAC support)" from the list. The remaining properties and values that you need to supply for your data source configuration depend on the type of driver that you select.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD or object store tablespace or database. For example, FNGCDDS.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD or object store tablespace or database. For example, FNGCDDSXA.
Database server name RAC node 1	The host name of the machine where the database software is installed for node 1.
Database port number RAC node 1	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database server name RAC node 2	The host name of the machine where the database software is installed for node 2.
Database port number RAC node 2	The port number used by the Oracle database instance in which you create tablespaces for the Global Configuration Data (GCD) and object stores.
Database service name	The SID of the Oracle database containing the GCD or object store tablespace.
Oracle RAC retries	The number of retries for Oracle RAC.
Oracle RAC delay	The amount of delay for Oracle RAC.
Database user name	The name of the Oracle GCD or object store tablespace owner.
Database password	The password for the Oracle GCD or object store tablespace owner. The tool encrypts the password for you. Enter the password again in the Confirm field.
JDBC data source file name	The JDBC data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .
JDBC XA data source file name	The JDBC XA data source file name for configuring Content Engine to communicate with the tablespace associated with the GCD or object store. The file name must end with <code>-ds.xml</code> . For example, <code>gcd-ds.xml</code> .

In this field...	Provide this information...
Task enabled	Turn on the Task enabled check box to execute the configure JDBC Data Sources task later. The default is enabled.

- c. Select **File > Save** to save your changes.

To apply the JDBC data source settings

1. Apply the JDBC property settings by right-clicking **Configure JDBC Data Sources** in the Content Engine Task View pane, and selecting **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the JDBC data source properties.
2. Close the Configure JDBC Data Sources task pane.

Editing the Configure LDAP task

The LDAP information is used to connect Content Engine to the directory service provider to authenticate users. Because the application server uses the directory service information to connect the Content Engine to the directory service provider, you cannot skip this task even if you have already configured your application server prior to installing Content Engine.

To edit the LDAP settings

1. Double-click **Configure LDAP** in the Content Engine Task View pane to open the task for editing.
2. Provide the property values for your LDAP provider, using the appropriate table for your provider.

Tivoli® Directory Server

In this field...	Provide this information...
Directory service provider type	Select “Tivoli Directory Server” from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Tivoli Directory Server.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.

In this field...	Provide this information...
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Tivoli Directory Server. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.

In this field...	Provide this information...
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	<p>WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.</p>
SSL enabled	<p>WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.</p>
Kerberos support	<p>JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.</p>
Task enabled	<p>Select the Task enabled check box to execute the configure LDAP task later. The default is enabled.</p>

Active Directory

In this field...	Provide this information...
Directory service provider type	<p>Select "Active Directory" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.</p>
Directory service server host name	<p>The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.</p>

In this field...	Provide this information...
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Active Directory.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Active Directory. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in Active Directory. For example, (sAMAccountName={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).

In this field...	Provide this information...
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLDAP.py.</p>
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later. The default is enabled.

ADAM or AD LDS

In this field...	Provide this information...
Directory service provider type	Select "ADAM or AD LDS" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to ADAM or AD LDS.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in ADAM or AD LDS. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.

In this field...	Provide this information...
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later. The default is enabled.

eDirectory

In this field...	Provide this information...
Directory service provider type	Select eDirectory from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to eDirectory.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in eDirectory. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.

In this field...	Provide this information...
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later. The default is enabled.

Sun Java Directory Server

In this field...	Provide this information...
Directory service provider type	Select "Sun Java Directory Server" from the list. The remaining properties and values that you need to supply for your LDAP configuration depend on the type of provider that you select.
Directory service server host name	The directory server host name. The short name, full name, or IP address of the system that hosts the directory service.
Directory service port number	The port number configured on the directory server host for communicating with the directory server.
Directory service bind user name	The fully qualified distinguished name of the LDAP bind user for authenticating to Sun Java Directory Server.
Directory service bind user password	The password used by the LDAP bind user to authenticate to the directory server. The tool encrypts the password for you. Enter the password again in the Confirm field.
User base distinguished name	The fully qualified distinguished name of the container for starting a user search in Sun Java Directory Server. For example, ou=FileNet,dc=FNCE.
User filter	The filter used by the bind user when searching for users in a directory server. For example, (cn={0}).
Group base distinguished name	JBoss only. The distinguished name of the container for starting a group search in a directory server. For example, cn=users,dc=mydomain.
Group filter	The filter used by the bind user when searching for groups in a directory server. For example, (member={1}).
User name attribute	WebSphere and WebLogic. The attribute by which a user logs on to Tivoli Directory Server. For example, cn.
Group attribute	An attribute in a Tivoli Directory Server entry that identifies the group. For example, cn.
Administrative console user name	WebSphere only. A user account that has access to log on to the application server administration console. If your site uses a Federated LDAP registry, this account name must be a unique user across all federated realms.
WebSphere LDAP repository type	WebSphere only. The WebSphere Application Server LDAP repository type. Valid values are: StandaloneLDAP / FederatedLDAP.
Federated Repository virtual realm name	WebSphere only. The name of the WebSphere Application Server Federated Repositories virtual realm. The default name is defaultWIMFileBasedRealm.

In this field...	Provide this information...
Overwrite existing repository	WebSphere only. Select this check box to overwrite any existing LDAP repository entries. Clear this check box to preserve any existing LDAP repository entries. This setting is valid only when the Standard deployment type is selected for the WebSphere LDAP repository type field. The default is clear (do not overwrite).
Set as current active user registry	WebSphere only. This setting specifies whether to set the LDAP repository as the active user registry. When set to true, the LDAP information will be used to configure the active user registry.
Script	<p>WebSphere and WebLogic. The fully qualified path to the LDAP configuration task script. The task script filename depends on the application server type selected.</p> <p>WebSphere Application Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWSLDAP.tcl or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWSLDAP.tcl.</p> <p>WebLogic Server example: /opt/FileNet/ContentEngine/tools/configure/scripts/configureWLLDAP.py or c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\configureWLLDAP.py.</p>
Temporary Directory	WebSphere and WebLogic. The fully qualified path to a temporary directory to be used by the configuration task. For example, /opt/FileNet/ContentEngine/tools/configure/tmp or c:\Program Files\FileNet\ContentEngine\tools\configure\tmp.
SSL enabled	WebSphere and WebLogic. This setting specifies whether Secure Sockets Layer (SSL) is enabled or disabled. Select the check box to enable SSL. Clear the check box to disable SSL. The default is disabled.
Kerberos support	JBoss only. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Select the Task enabled check box to execute the configure LDAP task later. The default is enabled.

3. Select **File > Save** to save your changes.

To apply the LDAP settings

1. Apply the LDAP property settings by right-clicking **Configure LDAP** in the Content Engine Task View pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the LDAP properties.
2. Close the Configure LDAP task pane.

Editing the Configure Bootstrap Properties settings

The bootstrap information is needed for creating the GCD and for starting Content Engine.

To edit the bootstrap properties settings

1. Double-click **Configure Bootstrap Properties** in the Content Engine Task View pane to open the task for editing.
2. Provide the bootstrap property values, using the following table.

In this field...	Provide this information...
Content Engine EAR path	The fully qualified path to the Content Engine EAR file that was installed by the Content Engine installation program. For example, /opt/FileNet/ContentEngine/lib/Engine-ws.ear or c:\Program Files\FileNet\ContentEngine\lib\Engine-ws.ear.
JDBC data source name	The JNDI name of the non-XA JDBC data source associated with the GCD tablespace or database. For example, FNGCDDSXA.
JDBC XA data source name	The JNDI name of the XA JDBC data source associated with the GCD tablespace or database. For example, FNGCDDSXA.
Bootstrapped EAR directory	The name of a subdirectory that will store the EAR file that contains the Content Engine bootstrap information. The bootstrap information is needed for creating the GDC and for starting Content Engine. Specify the directory relative to the ce_install_path/lib directory. For example, to specify /opt/FileNet/ContentEngine/lib/bootstrap, enter "bootstrap".
Bootstrap user name	The name of a directory server user that accesses the GCD data sources. Use only the short name of the bind user defined by the LDAP user attribute. For example, 'administrator'.
Bootstrap password	The password for the directory server user that accesses the Global Configuration Data (GCD) data sources. The tool encrypts the password for you.

In this field...	Provide this information...
Master key	<p>A word or phrase of any length that is used to encrypt sensitive GCD entries. The tool encrypts the password for you.</p> <p>The master key is used to configure the GCD settings for the Content Engine bootstrap settings. Store the master key in a secure location, as it is not retrievable. You will have to specify it later any time you access the GCD with applications built with non-FileNet APIs.</p>
Web Services HTTP port	<p>The Content Engine Web Services HTTP port number. The Content Engine Web Service (CEWS) is an industry standards-conformant SOAP interface to the FileNet Content Engine. It allows applications to access most of the functionality available through the Content Engine APIs. The default is 9080. For a cluster deployment, this port number must be the same value on each server in the cluster.</p>
Task enabled	<p>Turn on the Task enabled check box to execute the configure LDAP task. The default is enabled.</p>

3. Select **File > Save** to save your changes.

To apply the bootstrap properties settings

1. Apply the bootstrap property settings by right-clicking **Configure Bootstrap Properties** in the Content Engine Task View pane, and select **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the bootstrap properties.
2. Close the Configure Bootstrap properties task pane.

Editing the Upgrade Bootstrap settings

The upgrade bootstrap information is needed for completing an upgrade of Content Engine.

To edit the upgrade bootstrap properties settings

1. Double-click **Upgrade Bootstrap Properties** in the Content Engine Task View pane to open the task for editing.

2. Provide the bootstrap property values, using the following table.

In this field...	Provide this information...
Content Engine EAR path	The fully qualified path to the Content Engine EAR file that was installed by the Content Engine installation program. For example, /opt/FileNet/ContentEngine/lib/Engine-ws.ear or c:\Program Files\FileNet\ContentEngine\lib\Engine-ws.ear.
Deployed Content Engine EAR path	The location of the deployed Content Engine EAR file (the EAR file that was deployed before the upgrade).
Bootstrapped EAR directory	The name of a subdirectory that will store the EAR file that contains the upgraded Content Engine bootstrap information. The bootstrap information is needed for creating the GDC and for starting Content Engine. Specify the directory relative to the ce_install_path/lib directory. For example, to specify /opt/FileNet/ContentEngine/lib/bootstrap, enter "bootstrap".
Task enabled	Turn on the Task enabled check box to execute the upgrade bootstrap task later. The default is enabled.

3. Select **File > Save** to save your changes.

To apply the upgrade bootstrap properties settings

1. Apply the bootstrap property settings by right-clicking **Upgrade Bootstrap** in the Content Engine Task View pane, and selecting **Run Task**. Running the configuration task can take a few minutes. The task execution status messages are displayed in the Console pane below the upgrade bootstrap properties.
2. Close the Upgrade Bootstrap properties task pane.

Editing the Deploy Application task

Because deploying an application can take time, we recommend that you do not deploy the application until after you have installed any dependent files, such as Process Engine client files or customized applications for Content Engine. You can edit the deployment property values without applying the settings. When you apply the settings, the Content Engine is deployed as an application on the application server.

To edit the deploy application task settings

1. Right-click the **Deploy Application** task in the Content Engine Task View pane, and select **Edit Selected Task**.
2. Provide the property values for your deployment, using the appropriate table for your application server and deployment type (standard, network deployment, or cluster):

WebSphere Standard

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties and values that you need to supply depend on the type of deployment that you select.
Bootstrapped EAR path	The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example: UNIX <code>/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</code> Windows <code>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</code>
Content Engine Application name	The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.
Application server name	The name of the WebSphere Application Server where Content Engine will be deployed.
Application server node	The name of the WebSphere Application Server node where Content Engine will be deployed.
Script	The fully qualified path to the deploy configuration task script. The task script file name depends on the application server type selected. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/scripts /deployWSApplication.tcl</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\script s \deployWSApplication.tcl</code>

In this field...	Provide this information...
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Turn on the Task enabled check box to execute the deploy application task later. The default is disabled (do not execute).</p>

WebSphere Cluster

In this field...	Provide this information...
Deployment type	<p>Select "Cluster" from the list. The remaining properties and values that you need to supply depend on the type of deployment that you select.</p>
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</pre>
Content Engine Application name	<p>The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.</p>
Application server cluster name	<p>The name of the WebSphere Application Server cluster where Content Engine will be deployed.</p>

In this field...	Provide this information...
Script	<p>The fully qualified path to the deploy configuration task script. The task script file name depends on the application server type selected. For example:</p> <p>UNIX</p> <pre data-bbox="605 520 1422 583">/opt/FileNet/ContentEngine/tools/configure/scripts /deployWSApplication.tcl</pre> <p>Windows</p> <pre data-bbox="605 653 1422 783">c:\Program Files\FileNet\ContentEngine\tools\configure\script s \deployWSApplication.tcl</pre>
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre data-bbox="605 936 1422 961">/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre data-bbox="605 1037 1422 1100">c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Turn on the Task enabled check box to execute the deploy application task later. The default is disabled (do not execute).</p>

WebSphere Network Deployment

In this field...	Provide this information...
Deployment type	<p>Select "Network Deployment" from the list. The remaining properties and values that you need to supply depend on the type of deployment that you select.</p>

In this field...	Provide this information...
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine- ws.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine- ws.ear</pre>
Content Engine Application name	<p>The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.</p>
Application server name	<p>The name of the WebSphere Application Server where Content Engine will be deployed.</p>
Application server node	<p>The name of the WebSphere Application Server node where Content Engine will be deployed.</p>
Script	<p>The fully qualified path to the deploy configuration task script. The task script file name depends on the application server type selected. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/scripts /deployWSApplication.tcl</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\script s \deployWSApplication.tcl</pre>

In this field...	Provide this information...
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	<p>Turn on the Task enabled check box to execute the deploy application task later. The default is disabled (do not execute).</p>

JBoss Standard

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties and values that you need to supply depend on the type of deployment that you select.
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-jb.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-jb.ear</pre>
Kerberos support	This setting specifies whether Kerberos authentication is used. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.
Task enabled	Turn on the Task enabled check box to execute the deploy application task later. The default is disabled (do not execute).

JBoss Cluster

In this field...	Provide this information...
Deployment type	Select "Standard" from the list. The remaining properties and values that you need to supply depend on the type of deployment that you select.

In this field...	Provide this information...
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-jbc.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-jbc.ear</pre>
Kerberos support	<p>This setting specifies whether Kerberos authentication is used. Select the Kerberos support check box if Kerberos authentication is used. Clear the check box if Kerberos authentication is not used. The default is Kerberos not supported.</p>
Task enabled	<p>Turn on the Task enabled check box to execute the deploy application task later. The default is disabled (do not execute).</p>

WebLogic Standard

In this field...	Provide this information...
Deployment type	<p>Select "Standard" from the list. The remaining properties and values that you need to supply depend on the type of deployment that you select.</p>
Bootstrapped EAR path	<p>The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example:</p> <p>UNIX</p> <pre>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-wl.ear</pre> <p>Windows</p> <pre>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-wl.ear</pre>

In this field...	Provide this information...
Content Engine Application name	The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.
Script	<p>The fully qualified path to the deploy configuration task script. The task script file name depends on the application server type selected. For example:</p> <p>UNIX</p> <pre data-bbox="605 730 1422 793">/opt/FileNet/ContentEngine/tools/configure/scripts/deployWLApplication.py</pre> <p>Windows</p> <pre data-bbox="605 867 1422 993">c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\deployWLApplication.py</pre>
Temporary directory	<p>The fully qualified path to a temporary directory to be used by the configuration task. For example:</p> <p>UNIX</p> <pre data-bbox="605 1150 1422 1171">/opt/FileNet/ContentEngine/tools/configure/tmp</pre> <p>Windows</p> <pre data-bbox="605 1245 1422 1308">c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</pre>
Task enabled	Turn on the Task enabled check box to execute the deploy application task later. The default is disabled (do not execute).

WebLogic Cluster

In this field...	Provide this information...
Deployment type	Select "Cluster" from the list. The remaining properties and values that you need to supply depend on the type of deployment that you select.

In this field...	Provide this information...
Bootstrapped EAR path	The fully qualified path to the bootstrapped Content Engine EAR file that was created by the configure bootstrap task. For example: UNIX <code>/opt/FileNet/ContentEngine/lib/bootstrap/Engine-wl.ear</code> Windows <code>c:\Program Files\FileNet\ContentEngine\lib\bootstrap\Engine-wl.ear</code>
Content Engine Application name	The Content Engine application name as it will appear in the application server (for example, in an administration console). The application name is subject to application server naming constraints. For WebSphere Application Server, each application in a cell must have unique name. The default is FileNetEngine.
Script	The fully qualified path to the deploy configuration task script. The task script file name depends on the application server type selected. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/scripts/deployWLApplication.py</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\scripts\deployWLApplication.py</code>
Temporary directory	The fully qualified path to a temporary directory to be used by the configuration task. For example: UNIX <code>/opt/FileNet/ContentEngine/tools/configure/tmp</code> Windows <code>c:\Program Files\FileNet\ContentEngine\tools\configure\tmp</code>
Task enabled	Turn on the Task enabled check box to execute the deploy application task later. The default is disabled (do not execute).

3. Select **File > Save**.

To deploy the application

1. Right-click the **Deploy Application** task in the left pane, and select **Run Task**. Running the deployment task will take a few minutes. The task execution status messages are displayed in the Console pane below the Deploy Application task properties.
2. Close the Deploy Application properties task pane.

Running a task

You can run each task individually or run all tasks at once. In order to run a task, you must have selected the Task enabled check box for a specific task when you edited the task properties.

To run all the tasks in the profile

Use this procedure to run all tasks in a profile that have been enabled at once. Only the tasks that have the Task enabled check box selected will be run. Disabled tasks will not be run.

1. If the profile is collapsed in the Content Engine Task View pane, click + next to the profile name to expand it.
2. To run all the tasks in a profile at once, use one of the following methods to run the Run All Tasks command:
 - Click **Run All Tasks** in the Content Engine Task View pane toolbar.
 - Select **File > Run All**.

The Console pane displays the task execution messages.

NOTE Task execution will fail if you have not entered passwords correctly during the current Configuration Manager session. See [“Handling passwords in Configuration Manager” on page 643](#) for more information.

To run a single task

You can run each task individually. Use this procedure to run a selected task that has been enabled. In order to run the task, you must have selected the Task enabled check box for a specific task when you edited the task properties.

1. If the profile is collapsed in the Content Engine Task View pane, click + next to the profile name to expand it.
2. Use one of the following methods to run the Run a Task command:
 - Click the down arrow just to the right of the **Run All Tasks** icon in the Main toolbar, and then select the task that you want to run.
 - Click the **task name** in the Content Engine Task View pane to select the task. Click **Run a Task** in the Profile toolbar.
 - Right-click the **task name** in the Content Engine Task View pane, and select **Run Task** from the context menu.

The Console pane displays the task execution messages.

NOTE Task execution will fail if you have not entered passwords correctly during the current Configuration Manager session. See “Handling passwords in Configuration Manager” on page 643 for more information.

Checking the task status and session logs

Task execution messages are displayed in the console pane when you run a task, and you can view the status of a specific task at any time. You can also view the Configuration Manager session log for information about the tasks that were run in the current session of Configuration Manager.

To check the status of a task

1. If the profile is collapsed in the Content Engine Task View pane, click + next to the profile name to expand it.
2. Use one of the following methods to run the Check Status command:
 - Click the **task name** in the Content Engine Task View pane, and then click **Check Status** in the Content Engine Task View pane toolbar.
 - Right-click the **task name** in the Content Engine Task View pane, and select **Check Task Status** from the context menu.
3. The console pane opens with the status listed for the selected task.

The following table lists the status results and their descriptions.

Status Result	Description
COMPLETED	The task ran successfully.
INCOMPLETE	The task is incomplete.
NO STATUS AVAILABLE	The task has not been run.
FAILED	The task failed to complete. Additional information about the failure is displayed.

To view the session log

The session log contains information about the tasks that were run in the current session of Configuration Manager. As you run additional tasks for the same or a different profile, new messages are added to the log. When you exit Configuration Manager, the session log is cleared.

1. Run at least one task.
2. Use one of the following methods to run the View Log command:
 - Click **View Configuration Manager Log File** in the Main toolbar.
 - Select **Window > View Log**.

The current session log is displayed in the Console pane.

3. Running a task will replace the displayed session log with the current task status. To redisplay the session log, repeat [Step 2](#) as needed.

Saving your changes to a task or profile

You can save your settings at any time.

To save your changes to the task settings

Save changes to the currently open task using one of these methods:

- Click **Save** in the toolbar.
- Select **File > Save**.

cmui.ini parameters

When you install Configuration Manager, the path to the directory that contains the Java binary to be used to launch the graphical user interface is added to the *ce_install_path/tools/configure/CMUI/cmui.ini* file.

Windows example

```
-vm  
C:\Program Files\FileNet\ContentEngine\_cejvm/bin
```

UNIX example

```
-vm  
/opt/FileNet/ContentEngine/_cejvm/bin
```

Configuration Manager command-line reference

Configuration Manager can be run from a command line or from a graphical user interface. This section covers the command-line version of Configuration Manager.

Running Configuration Manager

How you invoke Configuration Manager from the command line depends on the operating system of the host machine where you run it:

Operating System	File Name
UNIX	configmgr.sh
Windows	configmgr.bat

NOTE In the following subtopics, substitute `configmgr.sh` or `configmgr.bat` in place of `configmgr`.

Configuration Manager syntax

Configuration Manager uses the following syntax patterns:

- To generate a configuration XML file:

```
configmgr generateConfig -appserver app_server_type -db db_type -ldap ldap_type
-deploy deploy_type -task task_name [-path mypath] [-silent]
```

- To execute a configuration task:

```
configmgr execute -task task_name [-path mypath] [-silent]
```

- To check the status of a configuration task that you have executed:

```
configmgr checkStatus [ -task taskname ] [-path mypath]
```

- To display a description of the settings for a configuration task:

```
configmgr describe -task taskname
```

The command names (`generateConfig`, `execute`, `checkStatus`, `describe`) are case sensitive; the parameter values (`task_name`, `app_server_type`, etc.) are not.

Command descriptions

The Configuration Manager commands are as follows:

checkStatus

The `checkStatus` command checks whether the results of executing a configuration XML file are correct.

execute

The `execute` command executes a configuration XML file. Typically, you will edit a configuration XML file (to insert your site-specific properties and values) before executing it.

describe

The describe command displays a description of what each task does.

generateConfig

The generateConfig command generates a configuration XML file, which depends on the task you specify in the command line.

Parameter descriptions

The Configuration Manager parameters are as follows:

-appserver *app_server_type*

The *appserver_type* value specifies the type of application server and must be one of the following: WebSphere, WebLogic, or JBoss.

-db *database_type*

The *database_type* value specifies the type of database to be used by Content Engine and must be one of the following: mssql, oracle, oracle_rac, db2, or db2zos. This parameter applies only to the generateConfig command.

-deploy *deploy_type*

The *deploy_type* value specifies the type of Content Engine deployment and applies only to the generateConfig command. The value must be one of the following: standard, cluster, or netdeploy (network deployment).

Specify standard if you are deploying Content Engine to a standalone (that is, a server that is neither managed nor clustered) WebSphere, WebLogic, or JBoss application server

Specify cluster if you are deploying Content Engine to a WebSphere, WebLogic, or JBoss application server cluster

Specify netdeploy if you are deploying Content Engine to a managed WebSphere application server instance (using Network Deployment for managing individual servers that are not necessarily in a cluster).

-ldap *ldap_type*

The *ldap_type* value specifies the type of directory service repository Content Engine uses for authenticating users and must be one of the following: activedirectory, adam, edirectory, sunjava, or tivoli. The adam option applies to both Microsoft ADAM and AD LDS. This parameter applies only to the generateConfig command.

-task *task_name*

task_name specifies which task to perform. Each task has one or more associated configuration XML files. The following table lists the tasks you can perform, the affected configuration XML files, and the contents of the files:

Task Name	Configuration XML File	Task Description or Contents of Configuration XML File
ConfigureApplicationServer	configureapplicationserver.xml	Parent configuration task that generates a complete set of configuration files. The parent XML file identifies the location of the following files: <ul style="list-style-type: none"> • configurebootstrap.xml • configurejdbc.xml • configureldap.xml • deployapplication.xml
ConfigureBootstrap	configurebootstrap.xml	Settings for the Content Engine bootstrap on the application server. The bootstrap information is needed for creating the Global Configuration Data (GCD) and for starting Content Engine.
ConfigureJDBC	configurejdbc.xml	Settings for configuring JDBC data source connections to the Global Configuration Data (GCD) and object store databases that Content Engine uses.
ConfigureLDAP	configureldap.xml	Settings for connecting to and searching within a directory server for authenticating Content Engine users.
ConfigureDotNetAPI	none	Configures the Content Engine .Net API for client use.
ConfigureDotNetClient	none	Configures the Content Engine .NET API client and FileNet Enterprise Manager.

Task Name	Configuration XML File	Task Description or Contents of Configuration XML File
DeployApplication	deployapplication.xml	Settings for deploying the Content Engine instance on the application server.
RegisterEM	none	Settings for registering or unregistering FileNet Enterprise Manager from the Windows Registry.
Upgrade	upgrade.xml	Parent configuration that identifies the location of the UpgradeApplicationServer, and UpgradeBootstrap configuration XML files
UpgradeApplicationServer	upgradeapplicationserver.xml	Settings for upgrading Global Configuration Data (GCD) and starting Content Engine.
UpgradeBootstrap	upgradebootstrap.xml	Settings for the Content Engine bootstrap on the application server. The bootstrap information is needed for creating the Global Configuration Data (GCD) and for starting Content Engine.

NOTE The *task_name* parameter is not case sensitive. For example, you can enter ConfigureApplicationServer, Configureapplicationserver, or ConFIGureApplicationServer for the *task_name*.

-path *mypath*

The -path *mypath* entry is optional and specifies the path to the configuration XML files that the Configuration Manager generates, executes, or verifies, as follows:

- If *mypath* is an absolute path name (that is, a path that begins at the root directory), Configuration Manager uses *mypath*.
- If *mypath* is a relative path (that is, a path that does not begin at the root directory) or just a single directory name, Configuration Manager uses the following path:

CE_install_path/tools/configure/profiles/mypath

- If you omit -path *mypath*, Configuration Manager uses the following path:

CE_install_path/tools/configure/profiles

NOTE If you are deploying multiple Content Engine instances on the same machine, you will need to generate, edit, and deploy a complete set of configuration files for each instance. Store the configuration files for each instance in a separate directory.

-silent

The `-silent` parameter is optional. When `-silent` is specified, then no prompts or informational messages are displayed. Failure messages are displayed as needed. If the configuration XML file to be generated already exists, then the task fails if the silent switch is selected.

Configuration examples

This section provides examples for commands using the syntax described earlier.

- Generate all configuration files at once

The following command generates all the configuration XML files for a standard WebSphere deployment using Tivoli Directory Server and DB2 in the `ce_install_path/tools/configure/wstdb2` path:

```
configmgr generateConfig -appserver WebSphere -db db2 -ldap tivoli  
-deploy standard -task ConfigureApplicationServer -path wstdb2
```

- Generate only the `configurejdbc.xml` file

The following command generates only the `configurejdbc.xml` file for a standard WebSphere deployment using Tivoli Directory Server and DB2 in the `ce_install_path/tools/configure/wstdb2jdbc` path:

```
configmgr generateConfig -appserver WebSphere -db db2 -ldap tivoli  
-deploy standard -task ConfigureJDBC -path wstdb2jdbc
```

- Execute only the `configurejdbc.xml` file

The following command executes the `configurejdbc.xml` file for a standard WebSphere deployment using Tivoli Directory Server and DB2 in the `ce_install_path/tools/configure/wstdb2jdbc` path:

```
configmgr execute -task ConfigureJDBC -path wstdb2jdbc
```

- Check the status of the `ConfigureJDBC` task:

The following command checks the status of the `ConfigureJDBC` task in the `ce_install_path/tools/configure/wstdb2jdbc` path:

```
configmgr checkStatus -task ConfigureJDBC -path wstdb2jdbc
```

Encrypt passwords

Several passwords are required to configure IBM FileNet P8 components. To accommodate your security requirements, you can encrypt these passwords, as follows, before you enter them into the resource files.

To encrypt a password for Configuration Manager

Configuration Manager and the encryption tool run only on Windows.

1. Navigate to `ce_install_path/tools/configure`, where `ce_install_path` is where Content Engine is installed.
2. Run one of the following commands to generate the encrypted password:

Windows

```
encryptpassword.bat passwordtoencrypt
```

UNIX

```
encryptpassword.sh passwordtoencrypt
```

where `passwordtoencrypt` is the password you want to encrypt.

3. An encrypted password is generated and displayed. Copy the encrypted password and paste into the appropriate property in the XML configuration file.

To encrypt a password for Process Engine

1. The encryption tool is located on the installation media for Process Engine software, in the Tools directory. Copy the following files from the Tools directory to a local drive:
 - `fnencryptutils` - an executable .jar file
 - `RunEncryptApp` - a batch file
2. Run one of the following executable files to invoke the application:

Windows

```
RunEncryptApp.bat
```

UNIX

```
RunEncryptApp.sh
```

NOTE Before running the file, be sure Java is installed and its location is in your PATH environment variable.

3. Enter the appropriate values for the user name and password.
4. Reenter the password to confirm it.
5. Click **Generate**.

6. An encrypted password will be generated and displayed in the encrypted password field.
7. Copy and paste this password into the appropriate configuration file.

New Content Engine classes and properties

This appendix lists the new classes and properties that have been added to Content Engine in the 4.0.0 and 4.5.0 release. If you have previously defined any classes or properties in a 3.5.x or 4.0.x object store with names that are the same as any of the class or property names listed here, it will not be possible to upgrade the object store to 4.5.0. The upgrade tool will check for naming conflicts and require you to change the names before proceeding.

Consider the following upgrade scenarios:

- If you are upgrading from 3.5.x to 4.5.x, you must resolve conflicts between your 3.5.x names and the 4.0.0 names, as well as any conflicts between 3.5.x and 4.5.0 names. Consult the lists in both of the following sections:
 - [“New in Content Engine 4.0.0 \(since 3.5.0\)” on page 703](#)
 - [“New in Content Engine 4.5.0 \(since 4.0.0\)” on page 716](#)
- If you are upgrading from 4.0.x to 4.5.0, you must resolve conflicts between your 4.0.0 names and the 4.5.0 names. See the following section.
 - [“New in Content Engine 4.5.0 \(since 4.0.0\)” on page 716](#)

New in Content Engine 4.0.0 (since 3.5.0)

New Content Engine classes in 4.0.0

The following table displays the new class names in Content Engine 4.0.0. To ensure successful upgrade, resolve any conflicts between your 3.5.x object store class names and the new names.

* Indicates that the class name was added in IBM FileNet P8CE-4.0.1-005 fix pack.

Class Symbolic Name	Class ID
AddOnInstallationRecord	Add On Installation Record
AsyncProcessingConfiguration	Async Processing Configuration
CenteraSiteSettings	Centera Site Settings
CodeModule	Code Module
ComponentRelationship	Component Relationship
ContentCacheArea	Content Cache Area
ContentCacheConfiguration	Content Cache Configuration
ContentConfiguration	Content Configuration
DatabaseStorageArea	Database Storage Area
DirectoryConfiguration	Directory Configuration
DirectoryConfigurationAD	Directory Configuration AD
DirectoryConfigurationADAM	Directory Configuration ADAM
DirectoryConfigurationCA*	Directory Configuration CA
DirectoryConfigurationIBM	Directory Configuration IBM
DirectoryConfigurationNovell	Directory Configuration Novell
DirectoryConfigurationSunOne	Directory Configuration SunOne
Domain	Domain
EntireNetwork	EntireNetwork
FileStorageArea	File Storage Area
FixedStorageArea	Fixed Storage Area
Group	Group
ImageServicesClassDescription	Image Services Class Description

Class Symbolic Name	Class ID
ImageServicesImportAgentConfiguration	Image Services Import Agent Configuration
ImageServicesPropertyDescription	Image Services Property Description
ImageServicesSiteSettings	Image Services Site Settings
IndexArea	Index Area
IndexJob	Index Job
IndexJobClassItem	Index Job Class Item
IndexJobCollectionItem	Index Job Collection Item
IndexJobItem	Index Job Item
IndexJobSingleItem	Index Job Single Item
PEConnectionPoint [IsolatedRegion gone]	PE Connection Point
PublishCompleteEvent	Publish Complete Event
PublishRequestEvent	Publish Request Event
PublishingConfiguration	Publishing Configuration
Realm	Realm
RenditionEngineConnection	Rendition Engine Connection
SecurityPrincipal	Security Principal
ServerCacheConfiguration	Server Cache Configuration
ServerInstance	Server Instance
Site	Site
SiteSettings	Site Settings
StorageArea	Storage Area
SubsystemConfiguration	Subsystem Configuration
TakeFederatedOwnershipEvent	Take Federated Ownership Event
TraceLoggingConfiguration	Trace Logging Configuration
UpgradeAddOn	Upgrade Add On
User	User

Class Symbolic Name	Class ID
VerityCollection	Verity Collection
VerityDomainConfiguration	Verity Domain Configuration
VerityIndexArea	Verity Index Area
VerityServerConfiguration	Verity Server Configuration
VirtualServer	Virtual Server

New Content Engine properties in 4.0.0

The following table displays the new property names in Content Engine 4.0.0. To ensure successful upgrade, resolve any conflicts between your 3.x object store property names and the new names.

* Indicates that the property name was added in IBM FileNet P8CE-4.0.1-005 fix pack.

Property Symbolic Name	Property Name
AbandonedContentCleanupInterval	Abandoned Content Cleanup Interval
AbandonedDBContentCleanupInterval	Abandoned Database Content Cleanup Interval
ActiveDirectorySiteDNS	Active Directory Site DNS
AddOn	Add On
AddOnInstallationRecords	Add On Installation Records
AddOns	Add Ons
AddOnName	Add On Name
AllRealms	All Realms
AllowFederatedDeletes	Allow Federated Deletes
AllowsContentToBeCached	Allows Content To Be Cached
AllowsDelete	Allows Delete
APITraceFlags	API Trace Flags
AppenderNames	Appender Names
AsynchronousProcessingTraceFlags	Asynchronous Processing Trace Flags
AuditedDeletePrefix	Audited Delete Prefix
BaseClassIDs	Base Class IDs
BatchDelay	Batch Delay

Property Symbolic Name	Property Name
BlobReadAheadSize	Blob Read Ahead Size
BlobWriteCollisionsAvoidanceFlag	Blob Write Collisions Avoidance Flag
BrokerPort	Broker Port
FPPoolBufferSize	Buffer Size
CacheStatus	Cache Status
CanAcceptForwardedRequests	Can Accept Forwarded Requests
CanForwardRequests	Can Forward Requests
CBRLocale	CBR Locale
CBRTraceFlags	CBR Trace Flags
CFSDaemonTraceFlags	CFS Daemon Trace Flags
ChildComponent	Child Component
ChildDocuments	Child Documents
ChildRelationships	Child Relationships
ChildVersionSeries	Child Version Series
ClassDefinition	Class Definition
ClosureDate	Closure Date
FPPoolClusterNonAvailTime	Cluster Nonavailable Time
CodeModule	Code Module
CodeModuleCacheEntryTTL	Code Module Cache Entry TTL
CodeModuleCacheMaxFileSpace	Code Module Cache Maximum File Space
CodeModuleCacheMaxMemory	Code Module Cache Maximum Memory
CodeModuleTraceFlags	Code Module Trace Flags
CollectionName	CollectionName
ComponentCascadeDelete	Component Cascade Delete
ComponentPreventDelete	Component Prevent Delete
ComponentRelationshipType	Component Relationship Type
ComponentSortOrder	Component Sort Order
CompoundDocumentState	Compound Document State

Property Symbolic Name	Property Name
ConcurrentReaders	Concurrent Readers
ConnectionState	Connection State
ConnectionTimeout	Connection Timeout
ContentCacheArea	Content Cache Area
ContentCacheAreas	Content Cache Areas
ContentCacheTraceFlags	Content Cache Trace Flags
ContentElementCount	Content Element Count
ContentElementKBytes	Content Element Kbytes
ContentElementsCreated	Content Elements Created
ContentElementsDeleted	Content Elements Deleted
ContentQueueMaxWorkerThreads	Content Queue Max Worker Threads
ContentStorageTraceFlags	Content Storage Trace Flags
ContentTempDirectoryRoot	Content Temp Directory Root
CSMCache	CSM Cache
CurrentUser	Current User
DatabaseContentUploadBufferSize	Database Content Upload Buffer Size
DatabaseServerPort	Database Server Port
DatabaseTraceFlags	Database Trace Flags
DynamicGroupMemberAttribute*	Dynamic Group Member Attribute
FPPoolDefaultCollisionAvoidance	Default Collision Avoidance
DefaultISDocumentClass	Default IS Document Class
DefaultRetentionDays	Default Retention Days
DefaultRetentionPassThrough	Default Retention Pass Through
DefaultSite	Default Site
DeleteMethod	Delete Method
DeviceAddress	Device Address
DeviceRootDirectory	Device Root Directory
DirectoryConfigurations	Directory Configurations

Property Symbolic Name	Property Name
DirectoryServerHost	Directory Server Host
DirectoryServerPassword	Directory Server Password
DirectoryServerPort	Directory Server Port
DirectoryServerProviderClass	Directory Server Provider Class
DirectoryServerType	Directory Server Type
DirectoryServerUserName	Directory Server User Name
DirectoryStructure	Directory Structure
DispatcherEnabled	Dispatcher Enabled
DispatcherWaitInterval	Dispatcher Wait Interval
DistinguishedName	Distinguished Name
DNSName	DNS Name
DocumentsPerBatch	Documents Per Batch
Domain	Domain
DomainID	Domain ID
DynamicGroupObjectClass*	Dynamic Group Object Class
EJBForwardingEndpoint	EJB Forwarding Endpoint
EJBTraceFlags	EJB Trace Flags
Email	Email Address
EmbeddedDataThreshold	Embedded Data Threshold
FPPoolEnableMulticlusterFailover	Enable Multicluster Failover
EncryptionAlgorithm	Encryption Algorithm
EngineTraceFlags	Engine Trace Flags
ErrorCode	Error Code
EventsTraceFlags	Events Trace Flags
ExpiredBatchSelectionSize	Expired Batch Selection Size
FixedContentDevice	Fixed Content Device
FixedContentDevices	Fixed Content Devices
FixedContentProviderTraceFlags	Fixed Content Provider Trace Flags

Property Symbolic Name	Property Name
FolderCacheMaxAgeDelta	Folder Cache Maximum Age Delta
FolderCacheMaxEntries	Folder Cache Maximum Entries
FolderCacheReapFrequency	Folder Cache Reap Frequency
FromVersions	From Versions
FullTextRowDefault	Full Text Row Default
FullTextRowMax	Full Text Row Max
GCDCacheTTL	GCD Cache TTL
GCDTraceFlags	GCD Trace Flags
GroupBaseDN	Group Base DN
GroupDisplayNameAttribute	Group Display Name Attribute
GroupMembershipSearchFilter	Group Membership Search Filter
GroupNameAttribute	Group Name Attribute
GroupSearchFilter	Group Search Filter
Groups	Groups
ImageServicesClassDescriptions	Image Services Class Descriptions
ImageServicesClassName	Image Services Class Name
ImageServicesDataType	Image Services Data Type
ImageServicesPropertyDescriptions	Image Services Property Descriptions
ImageServicesPropertyName	Image Services Property Name
ImplementationClass	Implementation Class
ImportAgentRetryCount	Import Agent Retry Count
InboundFileNameCacheMaxEntries	Inbound File Name Cache Maximum Entries
IndexArea	Index Area
IndexAreas	Index Areas
IndexItems	Index Items
IndexationID	Indexation ID
InitiatingUser	Initiating User
InlineContentRetrievalLimit	Inline Content Retrieval Limit

Property Symbolic Name	Property Name
InstallationDate	Installation Date
InstallationReport	Installation Report
Installer	Installer
IsCBREnabled	Is CBR Enabled
ISDomainName	IS Domain Name
IsFederatedOnly [IsolatedRegion gone]	Is Federated Only
ISOrganization	IS Organization
ISPassword	IS Password
IsSSLEnabled	Is SSL Enabled
ISTempDir	IS Temporary Directory
ISUserName	IS User Name
JNDIDataSource	JNDI DataSource
JNDIXADataSource	JNDI XA DataSource
JobAbortRequested	Job AbortRequested
JobStatus	Job Status
LabelBindValue	Label Bind Value
LeaseDuration	Lease Duration
LocalDomain	Local Domain
MarkingSetCacheEntryTTL	Marking Set Cache Entry TTL
MarkingSetCacheMaxEntries	Marking Set Cache Maximum Entries
MarkingSets	Marking Sets
MarkingUseGranted	Marking Use Granted
MaxBatchSize	Max Batch Size
MaxCollections	Max Collections
MaxInMemoryElementState	Max In Memory Element State
MaxInMemoryQueueItems	Max In Memory Queue Items
MaxObjectsPerCollection	Max Objects Per Collection
MaxReaderSemaphoreWaitTime	Max Reader Semaphore Wait Time

Property Symbolic Name	Property Name
FPPoolMaxConnections	Maximum Connections
MaximumContentElements	Maximum Content Elements
MaxResolutionBatchSize	Maximum Resolution Batch Size
MaximumRetentionDays	Maximum Retention Days
MaximumSizeKBytes	Maximum Size Kbytes
MaximumTimeToLive	Maximum Time To Live
MemberOfGroups	Member Of Groups
MetadataTraceFlags	Metadata Trace Flags
MinimumRetentionDays	Minimum Retention Days
FPPoolMulticlusterDeleteStrategy	Multicluster Delete Strategy
FPPoolMulticlusterExistsStrategy	Multicluster Exists Strategy
FPPoolMulticlusterQueryStrategy	Multicluster Query Strategy
FPPoolMulticlusterReadStrategy	Multicluster Read Strategy
FPPoolMulticlusterWriteStrategy	Multicluster Write Strategy
MyRealm	My Realm
NeverDeleteClipsOrContent	Never Delete Clips Or Content
NoWorkDelay	No Work Delay
NumImportAgents	Num Import Agents
ObjectSecurityCacheEntryTTL	Object Security Cache Entry TTL
ObjectSecurityCacheMaxEntries	Object Security Cache Maximum Entries
ObjectStores	Object Stores
FPOpenStrategy	Open Strategy
OptimizationInterval	Optimization Interval
OriginalObject	Original Object
OriginalOrdinal	Original Ordinal
OutputLocation	Output Location
ParentComponent	Parent Component
ParentDocuments	Parent Documents

Property Symbolic Name	Property Name
ParentRelationships	Parent Relationships
PartialResolutionChunkSize	PartialResolutionChunkSize
PEConnectionPoints	PE Connection Points
PersistenceType	Persistence Type
PoolAddress	Pool Address
FPPoolPrefetchSize	Prefetch Size
PreloadOnCreate	Preload On Create
Prerequisites	Prerequisites
PrivilegedSettability	Privileged Settability
PruneAmount	Prune Amount
PruneThresholdContentElements	Prune Threshold Content Elements
PruneThresholdSizeKBytes	Prune Threshold Size KBytes
PublicKey	Public Key
PublishRequestType	Publish Request Type
PublishStyleTemplate	Publish Style Template
PublishTraceFlags	Publish Trace Flags
PublishingStatus	Publishing Status
QueueItemDatabaseTimeout	Queue Item Database Timeout
QueueItemMaxDispatchers	Queue Item Max Dispatchers
QueueItemRetryCount	Queue Item Retry Count
ReferencingActions	Referencing Actions
RegionPassword	Region Password
RenameFileRetryAttempts	Rename File Retry Attempts
RenditionEngineConnection	Rendition Engine Connection
RenditionEngineConnections	Rendition Engine Connections
RenditionEnginePassword	Rendition Engine Password
ResourceStatus	Resource Status
ResourceString	Resource String

Property Symbolic Name	Property Name
RetentionPeriod	Retention Period
RetrievalRetryAttempts	Retrieval Retry Attempts
FPPoolRetryCount	Retry Count
FPPoolRetrySleep	Retry Sleep
ReturnNameAsDN	Return Name As DN
RollFwdBatchRetryAttempts	Roll Forward Batch Retry Attempts
RootDirectoryPath	Root Directory Path
SearchCrossForestGroupMembership	Search Cross Forest Group Membership
SearchDynamicGroup*	Search Dynamic Group
SearchServersToAttach	Search Servers To Attach
SearchTraceFlags	Search Trace Flags
SecurityDescCacheMaxEntries	Security Descriptor Cache Maximum Entries
SecurityTraceFlags	Security Trace Flags
ServerInstances	Server Instances
ShortName	Short Name
SingleItem	Single Item
Site	Site
SiteSettings	Site Settings
Sites	Sites
SnapLockPassword	SnapLock Password
SnapLockUserName	SnapLock User Name
SSITraceFlags	SSI Trace Flags
StagingAreaPath	Staging Area Path
StorageArea	Storage Area
StorageAreas	Storage Areas
SubjectCacheEntryTTL	Subject Cache Entry TTL
SubjectCacheMaxEntries	Subject Cache Maximum Entries
SubmittedCount	Submitted Count

Property Symbolic Name	Property Name
SubsystemConfigurations	Subsystem Configurations
TemplateType	Template Type
TempDBContentLifetime	Temporary Database Content Lifetime
TempDirectoryPath	Temp Directory Path
TempFileLifetime	Temporary File Lifetime
ThreadCount	Thread Count
TimeAllSubmitted	Time All Submitted
TimeLastProcessed	Time Last Processed
FPPoolTimeout	Timeout
TimeOutSeconds	Timeout Seconds
ToVersions	To Versions
TraceLoggingEnabled	Trace Logging Enabled
URIValue	URI Value
UserBaseDN	User Base DN
UserDisplayNameAttribute	User Display Name Attribute
UserDomain	User Domain
UserGroup	User Group
UserName	User Name
UserNameAttribute	User Name Attribute
UserPassword	User Password
UserSearchFilter	User Search Filter
UserTokenCacheEntryTTL	User Token Cache Entry TTL
UserTokenCacheMaxEntries	User Token Cache Maximum Entries
UserUniqueIDAttribute*	User Unique ID Attribute
UserUniqueIDAttributeIsBinary*	User Unique ID Attribute Is Binary
Users	Users
VerityAdminServerHostname	Verity Admin Server Hostname
VerityAdminServerPort	Verity Admin Server Port

Property Symbolic Name	Property Name
VerityBrokerName	Verity Broker Name
VerityBrokers	Verity Brokers
VerityCollections	Verity Collections
VerityDomainConfiguration	Verity Domain Configuration
VerityIndexServers	Verity Index Servers
VerityMasterAdminServerHostname	Verity Master Admin Server Hostname
VerityMasterAdminServerPort	Verity Master Admin Server Port
VeritySearchServers	Verity Search Servers
VersionBindType	Version Bind Type
VirtualServer	Virtual Server
VirtualServers	Virtual Servers
WSITraceFlags	WSI Trace Flags

New in Content Engine 4.5.0 (since 4.0.0)

New Content Engine classes in 4.5.0

The following table displays the new class names in Content Engine 4.5.0. To ensure successful upgrade, resolve any conflicts between your 3.5.x or 4.0.x object store class names and the new names.

Class Symbolic Name	Class ID
ReplicationGroup	Replication Group
CMODApplicationGroup	CMOD Application Group
CMODFixedContentDevice	CMOD Fixed Content Device
CMODRepository	CMOD Repository
CmTivoliManagementClass	Management Class
ContentFederatingRepository	Content Federating Repository
DirectoryConfigurationCA	Directory Configuration CA
DITARenditionEngineConnection	DITA Rendition Engine Connection
DynamicGroupObjectClass	Dynamic Group Object Class
ExternalAlias	External Alias
ExternalClassAlias	External Class Alias
ExternalClassDescription	External Class Description
ExternalIdentity	External Identity
ExternalParticipant	External Participant
ExternalPropertyAlias	External Property Alias
ExternalPropertyDescription	External Property Description
ExternalRepository	External Repository
ImageServicesRepository	Image Services Repository
ObjectStoreParticipant	Object Store Participant
Replicable	Replicable

Class Symbolic Name	Class ID
ReplicableClassDefinition	Replicable Class Definition
ReplicationConfiguration	Replication Configuration
ReplicationJournalEntry	Replication Journal Entry
ReplicationParticipant	Replication Participant
Repository	Repository

New Content Engine properties in 4.5.0

The following table displays the new property names in Content Engine 4.5.0. To ensure successful upgrade, resolve any conflicts between your 3.5.x or 4.0.x object store property names and the new names.

Property Symbolic Name	Property Name
AliasDirection	Alias Direction
ApplicationGroupNumber	Application Group Number
ClassFamily	Class Family
ClassIdentity	Class Identity
CMODApplicationGroups	CMOD Application Groups
CMODLanguage	CMOD Language
CMODPassword	CMOD Password
CMODPort	CMOD Port
CMODServerName	CMOD Server Name
CMODTraceLevel	CMOD Trace Level
CMODUserName	CMOD User Name
DatabaseIndexStorageLocation	Database Index Storage Location
DatabaseLOBStorageLocation	Database LOB Storage Location
DatabaseTableStorageLocation	Database Table Storage Location
DateCheckedIn	Date Checked In
DestinationRepository	Destination Repository
DITADatabaseTimeout	DITA Database Timeout
DITAHome	DITA Home

Property Symbolic Name	Property Name
DITAJVMArguments	DITA JVM Arguments
DITARenditionEngineConnection	DITA Rendition Engine Connection
DITARenditionEngineConnections	DITA Rendition Engine Connections
DITAWorkingDirectory	DITA Working Directory
DuplicateSuppressionEnabled	Duplicate Suppression Enabled
DynamicGroupObjectClass	Dynamic Group Object Class
DynamicGroupQueryAttribute	Dynamic Group Query Attribute
ExternalAliases	External Aliases
ExternalClassDescriptions	External Class Descriptions
ExternalObjectIdentity	External Object Identity
ExternalPropertyDescriptions	External Property Descriptions
ExternalReplicaIdentities	External Replica Identities
ExternalRepositories	External Repositories
ExternalRepository	External Repository
FcpPoolIdleTimeoutSeconds	FCP Pool Idle Timeout Seconds
FcpPoolMaxInUse	FCP Pool Max In Use
FcpPoolMaxWaitSeconds	FCP Pool Max Wait Seconds
FcpPoolPreferredSize	FCP Pool Preferred Size
FederateInboundContent	Federate Inbound Content
GroupUniqueIDAttribute	Group Unique ID Attribute
GroupUniqueIDAttributeIsBinary	Group Unique ID Attribute Is Binary
HeldUntilDate	Held Until Date
IICEConfigurationServerURL	Content Integrator URL
InboundBatchSize	Inbound Batch Size
InboundBusyWaitInterval	Inbound Busy Wait Interval
InboundDispatcherEnabled	Inbound Dispatcher Enabled
InboundIdleWaitInterval	Inbound Idle Wait Interval
LastFailureReason	Last Failure Reason

Property Symbolic Name	Property Name
MappableDirection	Mappable Direction
MaxInboundWorkers	Max Inbound Workers
MaxOutboundWorkers	Max Outbound Workers
ObjectStateRecordingLevel	Object State Recording Level
ObjectStoreSchemaDB2	Object Store Schema DB2
ObjectStoreSchemaMSSQL	Object Store Schema MSSQL
ObjectStoreSchemaOracle	Object Store Schema Oracle
OutboundBatchSize	Outbound Batch Size
OutboundBusyWaitInterval	Outbound Busy Wait Interval
OutboundDispatcherEnabled	Outbound Dispatcher Enabled
OutboundIdleWaitInterval	Outbound Idle Wait Interval
PartnerObjectStore	Partner Object Store
PropertyIdentity	Property Identity
RegionKey	Region Key
ReplicableDirection	Replicable Direction
ReplicationData	Replication Data
ReplicationGroup	Replication Group
ReplicationGroups	Replication Groups
ReplicationMode	Replication Mode
ReplicationOperation	Replication Operation
ReplicationParticipants	Replication Participants
ReplicationStatus	Replication Status
ReplicationTraceFlags	Replication Trace Flags
RestrictMembershipToConfiguredRealms	Restrict Membership To Configured Realms
SearchDynamicGroup	Search Dynamic Group
SuperclassIdentity	Superclass Identity
SupersededAddOnIds	Superseded AddOn Ids
TargetObjectStore	Target Object Store

Property Symbolic Name	Property Name
TSMApplicationType	TSM Application Type
TSMArchiveProtectionFlag	TSM Archive Protection Flag
TSMCompressionFlag	TSM Compression Flag
TSMConfigurationFilesShare	TSM Configuration Files Share
TSMDSMIDirectory	TSM DSMI Directory
TSMFileSpaceName	TSM File Space Name
TSMManagementClasses	TSM Management Classes
TSMMinimumRetention	TSM Minimum Retention
TSMMountWaitDuration	TSM Mount Wait Duration
TSMNodeName	TSM Node Name
TSMOptions	TSM Options
TSMOwnerName	TSM Owner Name
TSMPassword	TSM Password
TSMPort	TSM Port
TSMRetentionInitiation	TSM Retention Initiation
TSMRetentionPeriod	TSM Retention Period
TSMServerAddress	TSM Server Address
TSMWriteBufferSize	TSM Write Buffer Size
UserUniqueIDAttribute	User Unique ID Attribute
UserUniqueIDAttributeIsBinary	User Unique ID Attribute Is Binary

Manually redeploy Content Engine

The procedures in this topic explain how to redeploy Content Engine on a standalone server. For Content Engine in a clustered environment, see the *IBM FileNet P8 High Availability Technical Notice*. To download this guide from the IBM support page, see [“Access IBM FileNet documentation, compatibility matrices, and fix packs” on page 20](#).

Perform the redeployment procedure appropriate for your Content Engine application server type:

- [“To redeploy Content Engine on WebSphere 6.1.x” on page 721](#)
- [“To redeploy Content Engine on WebSphere 7.x” on page 722](#)
- [“To redeploy Content Engine on WebLogic” on page 724](#)
- [“To redeploy Content Engine on JBoss” on page 724](#)

To redeploy Content Engine on WebSphere 6.1.x

1. From the WebSphere administrative console, go to Applications > Install New Application.
2. From the EAR/WAR/JAR module page, in the local or remote file system:
 - a. Navigate to the new Engine-ws.ear file.
 - b. Click **Next**.
 - c. Accept the defaults, except in step 3 (of the WebSphere administrative console) deployment process, select both `Engine-init.war` and FileNet CE-MP WebService, and set their values to `default_host`.
3. Save the changes to the master configuration.
4. Create a new J2C connection factory:
 - a. Go to Applications > Enterprise Applications > FileNetEngine > Manage Modules > FileNet P8 Connector > Resource Adapter > J2C connection factories.
 - b. If a connection factory already exists, click the factory name, and modify the properties as follows. If a connection factory does not exist, click **New** to create a new J2C connection factory, and set the following properties:

Name: FileNetConnectionFactory

JNDI Name: FileNet/Local/ConnectionFactory
 - c. Click **Apply**, then click **Save**.
5. Change the following three entries, under Container-managed authentication to "None", and click **Apply**.
 - Container-managed authentication alias
 - Authentication preference
 - Mapping-configuration alias
6. (Optional) Set the Connection Pool Properties to the following values, and click **Apply**.

- Max Connections: 100
 - Min Connections: 10
7. Save your changes to the master configuration.
 8. Change the Class Loading and update detection settings, as follows:
 - a. Go to Applications > Enterprise Applications > FileNet Engine > Class Loading and update detection.
 - b. Change the polling interval to 3 (seconds).
 - c. Change the Class loader order to Classes loaded with application class loader first.
 - d. Change the WAR class loader policy to Single class loader for application.
 - e. Save your changes to the master configuration.
 9. Change Class Loader order.
 - a. Go to Applications > Enterprise Applications > FileNetEngine > Manage Modules > FileNet CEMP Web Service.
 - b. Change the class loader order to Classes loaded with application class loader first.
 - c. Click **Apply**.
 - d. Save your changes to the master configuration.
 10. Verify a successful deployment by entering the following into a web browser:

`http://<ce_app_server_machine_name>:<port>/FileNet/Engine`

NOTE The default port is 9080. This port number can be different than the default. Enter the port number accordingly.

If the deployment is successful, this action will return a “P8 CEMP Startup:” message.

To redeploy Content Engine on WebSphere 7.x

1. From the WebSphere administrative console, go to Applications > New Application.
2. Select New Enterprise Application.
3. From the Preparing for the application installation screen, in the Path to the new application dialog, navigate to the new `Engine-ws.ear` file. in the local or remote file system field, and click **Next**.
4. In the How do you want to install the application screen, choose Fast Path, and click **Next**.
5. In the Select installation options screen, accept all defaults and click **Next**.
6. In the Map modules to servers screen, select the following modules:
 - Engine-ejb-ws.jar
 - Engine-init.war
 - FileNet CE-MP Web Service

- FileNet P8 Connector

Click **Next**.

7. In the Map virtual hosts for Web modules, select Engine-init.war and FileNet CE-MP Web Server and set the Virtual host for each to default_host. Click **Next**.
8. Review the summary screen and click **Finish**.

The deployment process starts.

9. When the deployment process completes, save the changes to the master configuration.

10. Create a new J2C connection factory:

- a. Go to Applications > Enterprise Applications > FileNetEngine > Manage Modules > engine.rar > FileNet P8 Connector > Resource Adapter> J2C connection factories.
- b. If a connection factory already exists, click the factory name, and modify the properties as follows. If a connection factory does not exist, click **New** to create a new J2C connection factory, and set the following properties:

Name: FileNetConnectionFactory

JNDI Name: FileNet/Local/ConnectionFactory

- c. Change the following two entries, under Security settings to "None".
 - Component-managed authentication alias
 - Mapping-configuration alias
 - (Under Container-managed Authentication preference
- d. Under Container-managed authentication, change the authentication preference setting to "None".
- e. Click **Apply** and **OK**.

11. Save your changes to the master configuration.

12. Change the Class Loading and update detection settings, as follows:

- a. Go to Applications > Enterprise Applications > FileNet Engine > Class Loading and update detection.
- b. Change the polling interval to 0 (seconds).
- c. Change the Class loader order to Classes loaded with local class loader first (parent last).
- d. Change the WAR class loader policy to Single class loader for application.
- e. Save your changes to the master configuration.

13. Change Class Loader order.

- a. Go to Applications > Enterprise Applications > FileNetEngine > Manage Modules > FileNet CEMP Web Service.
- b. Change the class loader order to Classes loaded with parent class loader first.

- c. Click **Apply**.
- d. Save your changes to the master configuration.

14. Verify a successful deployment by entering the following into a web browser:

`http://<ce_app_server_machine_name>:<port>/FileNet/Engine`

NOTE The default port is 9080. This port number can be different than the default. Enter the port number accordingly.

If the deployment is successful, this action will return a “P8 CEMP Startup:” message.

To redeploy Content Engine on WebLogic

1. Deploy the new `Engine-wl.ear` file. (On WebLogic 9.2 you will also need to accept the defaults for roles, security, and so on.)
2. Restart Content Engine (the Engine-wl application).
3. Verify a successful deployment by entering the following into a web browser:

`http://<ce_app_server_machine_name>:<port>/FileNet/Engine`

NOTE The default port number is 7001. This port number can be different than the default. Enter the port number accordingly.

If the deployment is successful, this action will return a “P8 CEMP Startup:” message.

To redeploy Content Engine on JBoss

1. Copy the new `Engine-jb.ear` or the new `Engine-jbc.ear` file to the server instance deploy directory.
2. Restart the server instance.
3. Verify a successful deployment by entering the following into a web browser:

`http://<ce_app_server_machine_name>:<port>/FileNet/Engine`

NOTE The default port number is 8080. This port number can be different than the default. Enter the port number accordingly.

If the deployment is successful, this action will return a “P8 CEMP Startup:” message.

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