IBM FileNet P8 Platform
Version 4.5.1

Upgrade Guide for installation on Microsoft Windows with Oracle, IBM WebSphere Application Server, and Windows Active Directory

GC19-2847-01

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Note
Before using this information and the product it supports, read the information in "Notices" on page 285.

This edition applies to version 4.5.1 of IBM FileNet Content Manager (product number 5724-R81), version 4.5.1 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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ibm.com and related resources

Product support and documentation are available from ibm.com.

Support and assistance

Product support is available on the Web. Click Support from the product Web site at:

FileNet Content Manager Support
http://www.ibm.com/software/data/content-management/filenet-content-manager/support.html

Information center

You can view the product documentation in an Eclipse-based information center that you can install when you install the product. By default, the information center runs in a Web server mode that other Web browsers can access. You can also run it locally on your workstation. See the information center at http://publib.boulder.ibm.com/infocenter/p8docs/v4r5m1/index.jsp.

PDF publications

You can view the PDF files online using the Adobe Acrobat Reader for your operating system. If you do not have the Acrobat Reader installed, you can download it from the Adobe Web site at http://www.adobe.com.

See the following PDF publications Web sites:

Product	Web site
Product Documentation for FileNet P8 Platform	http://www.ibm.com/support/docview.wss?rs=3278&uid=swg27010422

"How to send your comments"
Your feedback is important in helping to provide the most accurate and highest quality information.

"Contacting IBM" on page x
To contact IBM customer service in the United States or Canada, call 1-800-IBM-SERV (1-800-426-7378).

How to send your comments

Your feedback is important in helping to provide the most accurate and highest quality information.

Send your comments by using the online reader comment form at https://www14.software.ibm.com/webapp/iwm/web/signup.do?lang=en_US&source=swg-rcf.

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Consumability survey

You are invited to tell IBM how to improve the consumability of software products. If you want to help IBM make IBM® FileNet® P8 easier to use, take the Consumability Survey at http://www.ibm.com/software/data/info/consumability-survey/.

Contacting IBM

To contact IBM customer service in the United States or Canada, call 1-800-IBM-SERV (1-800-426-7378).

To learn about available service options, call one of the following numbers:

- In the United States: 1-888-426-4343
- In Canada: 1-800-465-9600

For more information about how to contact IBM, see the Contact IBM Web site at http://www.ibm.com/contact/us/.

Part 1. Upgrading and configuring IBM FileNet P8 Platform

Upgrading the IBM FileNet P8 Platform software can require that you make installation and configuration changes to one or more of the core application components and the common documentation, and the upgrade process can vary depending on the product version you are currently running.

Important: You must upgrade the core components before you upgrade any expansion products or optional add-on components.

"Upgrading IBM FileNet P8 documentation" on page 3
You can point your IBM FileNet P8 components to the information center on ibm.com. You can also choose to upgrade your existing IBM FileNet P8 documentation server by installing the new files and redeploying the documentation on the Web application server.

"Upgrading and configuring Content Engine and Content Search Engine" on page 11
You can upgrade Content Engine and Content Search Engine to version 4.5.1 from version 3.5.2, 4.0.1, or 4.5.0.

"Upgrading and configuring Process Engine" on page 141
Upgrade the Process Engine by performing several pre-upgrade steps, installing the Process Engine software and performing multiple post-upgrade steps.

"Upgrading and configuring Application Engine" on page 171
You can upgrade Application Engine from version 3.5 or version 4.0 to version 4.0.2. The procedures for upgrading Application Engine vary depending on the version that you are upgrading.

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Upgrading IBM FileNet P8 documentation

You can point your IBM FileNet P8 components to the information center on ibm.com. You can also choose to upgrade your existing IBM FileNet P8 documentation server by installing the new files and redeploying the documentation on the Web application server.

You can link your FileNet P8 software directly to the IBM FileNet P8 Platform Version 4.5.1 information center on www.ibm.com. The advantages of linking to the ibm.com information center are as follows:

- You do not have to maintain a documentation server or information center.
- The documentation is always up to date.

If you want to use the online information center, you do not need to install or upgrade any documentation in your environment. However, you must configure your IBM FileNet P8 Platform components to use the new P8 documentation URL:

http://publib.boulder.ibm.com/infocenter/p8docs/v4r5m1/topic/com.ibm.p8.doc

To change the documentation URL for your FileNet P8 components, see the following help topics:

- **IBM FileNet P8 documentation → System Administration → Content Engine Administration → FileNet P8 domain → How to... → Configuring the FileNet P8 Platform documentation location**
- **IBM FileNet P8 documentation → System Administration → Process Administration → System administration tasks → Configure optional features → Reconfigure the FileNet documentation server URL**

You can also choose to upgrade your existing documentation package installation. You must also rebuild the documentation search index if you upgrade an installation containing more than the core IBM FileNet P8 Platform documentation.

Consider the following details as you get ready to upgrade your documentation:

- As of the IBM FileNet P8 4.0 release, you can deploy the IBM FileNet P8 documentation on a Content Engine server. Like Application Engine, Content Engine 4.0 and later runs on a web application server. If you are an existing 3.5 customer and want to install the 4.5.1 documentation onto a Content Engine server or a new application server, you must do a new installation rather than an upgrade.
- Before you update any IBM FileNet P8 documentation, review the *IBM FileNet P8 Hardware and Software Requirements* for the required software versions and updates for vendor software.
- In environments where Microsoft® 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 you install 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 allows you to restore the IBM

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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, be aware of the following requirements:
  - You must copy the associated documentation for all expansion products onto the updated IBM FileNet P8 documentation server.
  - You must update the index for the documentation Search feature as documented. This action ensures that searches return all expected results. If you add documentation for other expansion products later, you must rerun the procedure for updating the documentation Search index.
  - You must also update the documentation Search index if you update the installed IBM FileNet P8 documentation 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 is automatically copied to the `Index/IndexOld` subdirectory. If you need to return to your previous indexed state, you can reapply these backed-up files to the `core` subdirectory. However, you must first remove any newer existing files at that location.
- Depending on your operating system and application server levels, your options might vary slightly from what is documented.

To upgrade the documentation requires that you copy new files to the documentation server and reindex those files as necessary. You can then redeploy, start, and verify the upgraded documentation web application.

"Refreshing or updating IBM FileNet P8 documentation"
You can choose one of two methods to upgrade an IBM FileNet P8 documentation installation. The method you choose depends on whether the existing installation includes expansion product and other documentation in addition to core IBM FileNet P8 Platform documentation.

"Updating the documentation search index" on page 7
You must update the documentation search index only if you add to the core IBM FileNet P8 Platform documentation that is installed on an application server. For example, you must perform this task if you add expansion product documentation or auxiliary documentation such as release notes or technical notices. You must also update the search index any time you install an update of one of these collocated pieces of documentation.

"Starting and verifying the IBM FileNet P8 documentation web application" on page 8
After you install and optionally index the IBM FileNet P8 documentation again on the application server, verify that you can access its URL address and run its search feature. These tests ensure that the installed documentation can be used as a help system in the various IBM FileNet P8 component applications.

Refreshing or updating IBM FileNet P8 documentation

You can choose one of two methods to upgrade an IBM FileNet P8 documentation installation. The method you choose depends on whether the existing installation includes expansion product and other documentation in addition to core IBM FileNet P8 Platform documentation.

"Refreshing IBM FileNet P8 documentation without uninstalling" on page 5
You can refresh an existing IBM FileNet P8 documentation installation by

copying the newer documentation directly over the existing files. Use this method if you have only the core IBM FileNet P8 Platform documentation installed and it is version 3.5 or later.

"Updating IBM FileNet P8 documentation by uninstalling and reinstalling" on page 6
If your existing documentation installation includes both core IBM FileNet P8 Platform documentation and other IBM FileNet P8 documentation, you must uninstall it completely before you can upgrade it.

Refreshing IBM FileNet P8 documentation without uninstalling

You can refresh an existing IBM FileNet P8 documentation installation by copying the newer documentation directly over the existing files. Use this method if you have only the core IBM FileNet P8 Platform documentation installed and it is version 3.5 or later.

If you update the core documentation package, you must also reindex the files for search support as a follow-up task.

Important:

- If you have IBM FileNet P8 3.5 or later documentation installed with expansion product documentation included, use the procedure "Updating IBM FileNet P8 documentation by uninstalling and reinstalling" on page 6.
- 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 server types, even those types such as IBM WebSphere® Application Server that required a WAR file for initial deployment.

To refresh the IBM FileNet P8 documentation without first uninstalling it:

1. Stop the IBM FileNet P8 documentation Web application or the application server 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 the search-index files located in:

Option	Description
Windows	*deployment_path*\ecm_help\search\index\core

3. Access the new IBM FileNet P8 Platform documentation package.
4. Copy the expanded `ecm_help` directory from the package over the deployed `ecm_help` directory.
5. As a best practice, download the latest web-posted updates of the planning and installation guides. For IBM FileNet P8 Platform, copy these PDF files to the `ecm_help/installation` directory on your IBM FileNet P8 documentation server.
6. (Optional) Download any auxiliary documentation to the `ecm_help/installation/web` directory on your IBM FileNet P8 Platform documentation server.
7. Continue with one of the following tasks:

- If you added documentation to the core IBM FileNet P8 Platform documentation, then continue with “Updating the documentation search index” on page 7.
- If you added no other documentation to the core IBM FileNet P8 Platform documentation, then continue with “Starting and verifying the IBM FileNet P8 documentation web application” on page 8.

Related information

Product documentation for IBM FileNet P8 Platform
Download updated PDF's of the IBM FileNet P8 Platform documentation.

Updating IBM FileNet P8 documentation by uninstalling and reinstalling

If your existing documentation installation includes both core IBM FileNet P8 Platform documentation and other IBM FileNet P8 documentation, you must uninstall it completely before you can upgrade it.

Use the procedure provided for your application server type.

“Updating the IBM FileNet P8 documentation on IBM WebSphere Application Server”
To update IBM FileNet P8 documentation running on IBM WebSphere Application Server, you must uninstall the existing web application and then install the new documentation files.

Updating the IBM FileNet P8 documentation on IBM WebSphere Application Server

To update IBM FileNet P8 documentation running on IBM WebSphere Application Server, you must uninstall the existing web application and then install the new documentation files.

To update the documentation:

1. Verify that the IBM WebSphere Application Server machine is running, and then start the WebSphere administrative console.
2. From the WebSphere administrative console, choose **Uninstall** to remove the existing documentation site.
3. From the initial installation location, delete the installed IBM FileNet P8 documentation files but leave the `ecm_help` directory in place.
4. Copy the IBM FileNet P8 `ecm_help.war` file from the IBM FileNet P8 documentation package to the local hard disk drive.
5. From the WebSphere administrative console, deploy the `ecm_help.war` file by 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.

   You can copy more than one expansion product documentation set to the documentation server before continuing, for example, for Content Federation Services and IBM InfoSphere™ Enterprise Records. When you are finished, you have one ecm_help directory structure containing files for the core documentation and one or more sets of expansion product documentation.
7. As a best practice, download the latest Web-posted updates of the planning and installation guides. For IBM FileNet P8 Platform, copy these PDF files to the `ecm_help/installation` directory on your IBM FileNet P8 documentation

server. Check the documentation page on the IBM customer support Web site http://www.ibm.com/software/data/support/ for the latest versions of these guides.

8. (Optional) Download any auxiliary documentation to the `ecm_help/installation/web` directory on your IBM FileNet P8 Platform documentation server.
9. From the WebSphere administrative console, restart the IBM FileNet P8 documentation site.
10. Continue with one of the following tasks:
    - If you added expansion products, continue with "Updating the documentation search index."
    - If you have no further documentation to install, continue with "Starting and verifying the IBM FileNet P8 documentation web application" on page 8.

Updating the documentation search index

You must update the documentation search index only if you add to the core IBM FileNet P8 Platform documentation that is installed on an application server. For example, you must perform this task if you add expansion product documentation or auxiliary documentation such as release notes or technical notices. You must also update the search index any time you install an update of one of these collocated pieces of documentation.

If no conditions require you to update the search index, skip to "Starting and verifying the IBM FileNet P8 documentation web application" on page 8.

To update the help Search index:

1. If the IBM FileNet P8 documentation Web application (ecm_help) is running, stop it. Verify that no processes are accessing this documentation Web application.

   Important: Ensure that you copied all the IBM FileNet P8 Platform expansion-products and auxiliary documentation that you intend to use to the application server location containing the core IBM FileNet P8 Platform documentation. Otherwise, you must repeat this procedure if you install additional documentation later.
2. Open a terminal or command prompt on the application server.
3. From the command line, navigate to the `search` subdirectory under the application root directory, for example, `ecm_help`.
4. Complete the search indexing steps:

Option	Description
Windows	1. If not already done, modify the search-indexing script file by setting Read and Execute permissions on the `indexFiles.bat` file, which is preset to read-only permissions in the documentation package. 2. Using a text editor, open the indexFiles.bat search-indexing script file. 3. 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. **Important:** The Java JRE installation subdirectory can be user-defined, so substitute your actual location. 4. Save your changes and close the text editor. 5. From the `ecm_help/search` directory, run the updated indexFiles.bat search-indexing script file. As you run the script file, you might notice periodic Parse Abort errors. You can ignore these error conditions because they are benign and do not affect the overall indexing process.

Starting and verifying the IBM FileNet P8 documentation web application

After you install and optionally index the IBM FileNet P8 documentation again on the application server, verify that you can access its URL address and run its search feature. These tests ensure that the installed documentation can be used as a help system in the various IBM FileNet P8 component applications.

To verify the IBM FileNet P8 documentation installation:

1. Start the IBM FileNet P8 documentation Web application (`ecm_help`) on the application server.
2. From a Web browser, access the documentation URL by using the application server name and port number for your Web environment, for example:

Option	Description
IBM WebSphere Application Server	http://*yourdocserver*:9080/ecm_help/

   If the installation was a success, the IBM FileNet P8 documentation opens the same way as for an IBM FileNet P8 component application.
3. Note the URL for your application server because you must enter it as the documentation URL for the IBM FileNet P8 components while running installation programs or setting site preferences later, for example, in Workplace or Workplace XT.
4. Click the **Search** link on the Help Directory toolbar and verify that it opens the documentation Search page.
5. Enter a value for your Search query and verify that the query runs as expected.

6. Select one of the Search query result links and verify that the help page opens.

Upgrading and configuring Content Engine and Content Search Engine

You can upgrade Content Engine and Content Search Engine to version 4.5.1 from version 3.5.2, 4.0.1, or 4.5.0.

Important: In some customized versions of this documentation, Content Search Engine information is removed from this topic and its subtopics.

Perform the following upgrade tasks that apply to your existing version of Content Engine and Content Search Engine.

"Upgrading from version 3.5.2"
Upgrading Content Engine and Content Search Engine from version 3.5.2 is a multi-step process.

"Upgrading from version 4.0.1 or 4.5.0" on page 105
Upgrading Content Engine and Content Search Engine from version 4.0.1 or 4.5.0 is a multi-step process.

Upgrading from version 3.5.2

Upgrading Content Engine and Content Search Engine from version 3.5.2 is a multi-step process.

Important: Before you start to upgrade the Content Engine software, ensure that you are at the correct version and fix pack level, as indicated in *Plan and Prepare Your Environment for IBM FileNet P8*.

1. "Completing pre-upgrade Content Engine configuration" on page 12
   You must complete several pre-upgrade procedures to prepare the Content Engine for an upgrade from version 3.5.2.
2. "Upgrading Content Engine and related client software" on page 18
   If you are upgrading from Content Engine version 3.5.2 on Windows, you can upgrade and continue to use Windows, or you can migrate your Content Engine to UNIX.
3. "Configuring Content Engine" on page 26
   You can configure and deploy all of your Content Engine instances by using Configuration Manager. A single Content Engine application instance equates to one deployed application on your application server.
4. "Deploying upgraded Content Engine instances" on page 47
   You must deploy the upgraded Content Engine on the web application server. Deploying makes the Content Engine application available for use.
5. "Installing storage device source files" on page 50
   If your upgraded IBM FileNet P8 system includes Tivoli Storage Manager or EMC Centera devices, you must install files on the Content Engine server.
6. "Completing Content Engine post-deployment steps" on page 53
   You must complete several Content Engine post-deployment steps before you can put an IBM FileNet P8 system into production.
7. "Installing the latest Content Engine client files on other IBM FileNet P8 servers (for staged upgrades)" on page 55
   When you upgrade Content Engine software, you must also upgrade the

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associated Content Engine Client files installed on other machines running IBM FileNet P8 components, for example, on Process Engine and Application Engine servers.

8. "Establishing the FileNet P8 domain and Global Configuration Data" on page 56
   You must use IBM FileNet Enterprise Manager to create a FileNet P8 domain and the Global Configuration Data (GCD).
9. "Configuring storage devices for upgrades" on page 59
   When you upgrade from Content Engine version 3.5.2, you must configure your existing file store devices.
10. "Creating the data sources for an object store" on page 62
    Each object store in your site requires its own JDBC data sources. You can configure the data sources by using the Configuration Manager graphical user interface or the command line.
11. "Upgrading Content Search Engine software from version 3.5.2" on page 66
    If you used the full-text search feature (CBR) in version 3.5.2, you upgrade by installing and configuring version 4.5.1 of Content Search Engine (Autonomy K2). After the upgrade, you recreate index areas, called *K2 collections*, to replace the version 3.5.2 content search indexes.
12. "Updating the CFS-IS settings" on page 78
    If Content Federation Services for FileNet Image Services (CFS-IS) is in your version 3.5.2 system, then you must enable the FileNet Image Services dispatcher. You must also modify the default map between CFS-IS and the object stores in the FileNet P8 domain.
13. "Upgrading Content Engine data" on page 79
    You must upgrade your current Content Engine data (GCD, addons, fixed content devices, object stores, and related information).
14. "Updating the database storage area parameters" on page 101
    After you have upgraded your object stores, you need to initialize the parameter values for the associated database storage areas.
15. "Completing Content Search Engine upgrade from 3.5.2" on page 101
    After you upgrade Content Engine data, you must create new content-search index areas in Enterprise Manager. Then you can enable indexing for designated classes and properties and reindex your stored data. The reindexing process creates new Autonomy K2 collections.
16. "Upgrading Enterprise Manager" on page 104
    If you did not upgrade Enterprise Manager as part of a Content Engine upgrade, you can upgrade Enterprise Manager interactively or silently.

Related information

General requirements for all FileNet P8 Platform systems
Check to make sure your software is at the correct fix pack level before you upgrade.

Completing pre-upgrade Content Engine configuration

You must complete several pre-upgrade procedures to prepare the Content Engine for an upgrade from version 3.5.2.

1. "Verifying that all in-progress event actions have finished" on page 13
   You must verify that all in-progress events have completed for each object store before you begin the upgrade from version 3.5.2.
2. "Verifying that publishing requests have been completed" on page 14
   You must verify that all publishing requests have completed for each object store before you begin the upgrade from version 3.5.2.

3. "Deleting custom subclasses of the PublishRequest object" on page 15
   You must delete any custom subclasses of the PublishRequest class for each object store before you begin the upgrade from version 3.5.2.
4. "Verifying that all in-progress Content Engine transactions involving content files have finished" on page 15
   You must verify that all pending content transactions, indexing requests, and fixed-content migration requests have completed before you begin the upgrade from version 3.5.2. Use the Content Resource Manager utility to view the queues.
5. "Granting directory permissions on file stores (Windows only)" on page 16
   You must give write permission to the root directory of the machine where a version 3.5.2 file store is located to convert the file storage area during upgrade from version 3.5.2.
6. "Renaming storage policies" on page 16
   Check that every storage policy name does not exceed the maximum allowed number of characters. You must shorten the name of any storage policy in version 3.5.2 of IBM FileNet P8 so that it does not exceed 58 characters.
7. "Removing accented characters from file store paths" on page 16
   If you are moving your file stores from Windows to UNIX during your upgrade to version 4.5.1, you must remove any accented characters from the file store path prior to moving the file store.
8. "Determining the CBR-enabled properties in an object store" on page 17
   For each object store to be upgraded, you must determine the associated classes and properties that are currently enabled for content-based retrieval (CBR). You enable these properties after the upgrade is complete.
9. "Preventing name conflicts with reserved words" on page 17
   You must verify that the object store names, custom classes, or custom properties in your current version do not conflict with reserved words before you begin the upgrade from version 3.5.2.
10. "Upgrading IBM InfoSphere Enterprise Records object stores" on page 17
    If you site includes FileNet Records Manager, you must update the FileNet Records Manager data model on each file plan object store (FPOS) before you install Content Engine version 4.5.1.
11. "Running the Content Consistency Checker" on page 18
    Run the Content Consistency Checker to ensure that the documents in the object store database are synchronized with file storage area content.
12. "Moving IBM TotalStorage DR550 fixed content device data" on page 18
    Although IBM TotalStorage DR550 devices have been supported since version 4.5.0 FP2 of Content Engine, there is no upgrade path to move file stores that are on such devices from version 3.5.2 to 4.5.1. If you need to move the content of your DR550 fixed content devices from Content Engine version 3.5.2 to version 4.5.1, contact IBM Support.
13. "Backing up the database" on page 18
    You must back up the database before you begin the upgrade from version 3.5.2.
14. "Stopping and disabling all services related to Content Engine" on page 18
    You must stop and disable all services related to Content Engine on all servers in the FileNet P8 domain before you begin the upgrade from version 3.5.2.

Verifying that all in-progress event actions have finished

You must verify that all in-progress events have completed for each object store before you begin the upgrade from version 3.5.2.

To locate and remove in-progress items from the work queue for the object store:

1. Start Enterprise Manager if it is not already running.
2. In the list view, under the object store icon, right-click the **Search Results** folder and select **New Search**.
3. In the Content Engine Query Builder window, click **Select From Table** → **QueueItem**.
4. Search for unfinished items in the queue or delete unwanted items from the queue:

Option	Description
Search for unfinished items in the queue	1. Retain the default settings and click **OK**. 2. Click **Yes** at the prompt for a WHERE clause. Any remaining event items in the queue are displayed in the Query Status window.
Remove unwanted items from the queue	1. Select the **Delete objects** check box in the **Action** tab of the Search dialog box. 2. Click **OK**. Click **OK** again to confirm the deletion.

5. Repeat this procedure for each object store in your environment.

Verifying that publishing requests have been completed

You must verify that all publishing requests have completed for each object store before you begin the upgrade from version 3.5.2.

To verify that publishing requests complete:

1. Start Enterprise Manager if it is not already running.
2. Search for publishing requests in the queue by expanding the **Publishing** folder and clicking **Queue**. Then, click **View** → **All requests**.
3. Verify that the queue (right pane) of publishing requests is empty. If the queue is not empty, wait until the publish requests are processed. 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).
4. In the list view, under the object store icon, right-click the **Search Results** folder, and choose **New Search**.
5. In the Content Engine Query Builder window, click **Select From Table** → **PublishRequest**.
6. Retain the default settings and click **OK**.
7. Click **Yes** at the prompt for a WHERE clause. Any remaining event items in the queue are displayed in the Query Status window.
8. Remove unwanted items from the queue.
   a. In the list view, under the object store icon, right-click the **Search Results** folder, and choose **New Search**.
   b. In the Content Engine Query Builder window, click **Select From Table** → **PublishRequest**.
   c. Select the **Delete objects** check box in the **Actions** tab of the Search window.
   d. Click **OK**. Click **OK** again to confirm the deletion.

9. Repeat this procedure for each object store in your environment.

Deleting custom subclasses of the PublishRequest object

You must delete any custom subclasses of the PublishRequest class for each object store before you begin the upgrade from version 3.5.2.

To delete custom subclasses of the PublishRequest object:

1. Start version 3.5 of IBM FileNet Enterprise Manager.
2. In the left pane of Enterprise Manager, open an object store, and navigate to **Other Classes** → **Custom Object** → **Publish Request**.
3. In the right pane, delete any custom subclasses of Publish Request and any instances of such subclasses.
4. Repeat this procedure for each object store in your environment.
5. Close Enterprise Manager.

Verifying that all in-progress Content Engine transactions involving content files have finished

You must verify that all pending content transactions, indexing requests, and fixed-content migration requests have completed before you begin the upgrade from version 3.5.2. Use the Content Resource Manager utility to view the queues.

Important: All transactions and requests must complete before you upgrade Content Engine. Otherwise, the upgrade will fail.

To verify that all transactions and requests are complete:

1. Start File Store Service if it is not already running on the server where Content Engine is installed.
2. Stop Object Store Service and Content Cache Service.
3. Start the *ce_install_path*\RMU.exe utility, where *ce_install_path* is the location where the Content Engine software is installed.
4. 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 are complete.
   d. Navigate to **Indexing Service** → **Index Control**. If the value of **Current index queue files** is zero, then all pending indexing requests are complete.
   e. Navigate to **Fixed Content** → **Migration Queuing**. If the value of **Current number in queue** is zero, then all fixed-content migration requests are complete.
5. If all the activities checked are complete, then stop the File Store Service on the server.
6. If any of the activities are not complete, then close the Content Resource Manager utility. Wait several minutes, and then return to Step 1.
7. Repeat this procedure on each server in your environment where Content Engine is installed.

Granting directory permissions on file stores (Windows only)

You must give write permission to the root directory of the machine where a version 3.5.2 file store is located to convert the file storage area during upgrade from version 3.5.2.

To grant directory permissions:

Give the following users write permission to the root directory of the computer where the version 3.5.2 file store is located:

- The user running Upgrader Tool (*config_mgr_user*)
- The user running the application server (*ce_appserver_admin*)

If you are running the WebSphere Application Server instance by using the LocalSystem service log-on account and the file stores are located on the same server, then give SYSTEM write permission to the root directory.
If you are running the WebSphere Application Server instance by using the LocalSystem service log-on account, but WebSphere Application Server is remote from the file stores, then change the service log-on account from LocalSystem to an account that would be allowed write access to the file store directories.

Related concepts

Specifying IBM FileNet P8 accounts for upgrades
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Renaming storage policies

Check that every storage policy name does not exceed the maximum allowed number of characters. You must shorten the name of any storage policy in version 3.5.2 of IBM FileNet P8 so that it does not exceed 58 characters.

To check storage policy names:

1. Start version 3.5.2 of IBM FileNet Enterprise Manager and log in to the P8 domain FileNet P8 domain you are upgrading.
2. For each object store in the left panel, select the Storage Policies node and complete the following substeps for each storage policy:
   a. Right-click the storage policy node and choose **Properties** from the context menu that opens.
   b. If the storage policy name has more than 58 characters, change the name so that it does not exceed 58 characters and click **OK**.

Removing accented characters from file store paths

If you are moving your file stores from Windows to UNIX during your upgrade to version 4.5.1, you must remove any accented characters from the file store path prior to moving the file store.

To remove any accented characters from the file store path:

1. Start the version 3.5.2 Enterprise Manager.
2. Use the Move File Store wizard to change the path for the file store. Do not use any accented characters in the path. See the FileNet P8 Help topic **IBM FileNet P8 documentation → System Administration → Content Engine Administration → Content storage → Storage areas → File storage areas → How to → Move a file storage area**

Determining the CBR-enabled properties in an object store

For each object store to be upgraded, you must determine the associated classes and properties that are currently enabled for content-based retrieval (CBR). You enable these properties after the upgrade is complete.

To determine the classes and properties that are CBR-enabled:

1. Using an RDBMS tool, access the object store database as a user who has appropriate privileges to query the object store tables.
2. Run the following SQL query command on each object store database to determine which properties are enabled for CBR:

   ```
   select p.dbg_class_name, p.dbg_display_name, c.is_cbr_enabled,
   p.is_cbr_enabled from ClassDefinition c inner join PropertyDefinition p
   on p.parent_id = c.object_id where p.is_cbr_enabled = 1 AND
   c.is_cbr_enabled = 0
   ```

3. Record the results of the query commands. After you upgrade the object stores, you need to run FileNet Enterprise Manager to enable CBR on these properties after you enable CBR on the classes that these properties are associated with.

Related tasks

"Completing Content Search Engine upgrade from 3.5.2" on page 101
After you upgrade Content Engine data, you must create new content-search index areas in Enterprise Manager. Then you can enable indexing for designated classes and properties and reindex your stored data. The reindexing process creates new Autonomy K2 collections.

Preventing name conflicts with reserved words

You must verify that the object store names, custom classes, or custom properties in your current version do not conflict with reserved words before you begin the upgrade from version 3.5.2.

Verify that your custom classes and properties do not conflict with the reserved words listed in "New Content Engine classes and properties" in *Plan and Prepare Your Environment for IBM FileNet P8* that describes how you must change any custom class or custom property names in your existing object stores. If you have previously defined any classes or properties in a version 3.5.2 object store with symbolic names that are the same as any of the reserved class or property symbolic names, the upgrade tool detects the naming conflicts and requires you to change your class or property names before it upgrades the object store to version 4.5.1. Therefore, you must resolve conflicts between your version 3.5.2 symbolic names and the version 4.0 and 4.5 symbolic names

Related concepts

Upgrade tasks
For details on the necessary steps to prepare for an upgrade, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading IBM InfoSphere Enterprise Records object stores

If you site includes FileNet Records Manager, you must update the FileNet Records Manager data model on each file plan object store (FPOS) before you install Content Engine version 4.5.1.

To complete and confirm your IBM FileNet P8 Platform upgrade, you must update at least one object store. If your configuration contains only FileNet Records Manager object stores, you must update at least one of the object stores or create a non-Records Manager object store prior to upgrading and use that object store to confirm the upgrade.

Run the RM37PreUpgrader tool. See the topic "Prepare to Upgrade Object Stores" in *IBM FileNet Records Manager Installation and Upgrade Guide*

Running the Content Consistency Checker

Run the Content Consistency Checker to ensure that the documents in the object store database are synchronized with file storage area content.

For information about the Content Consistency Checker, see the IBM FileNet P8 Help topic **FileNet P8 Administration → Content Engine Administration → Content storage → Content Consistency Checker Overview**.

Moving IBM TotalStorage DR550 fixed content device data

Although IBM TotalStorage DR550 devices have been supported since version 4.5.0 FP2 of Content Engine, there is no upgrade path to move file stores that are on such devices from version 3.5.2 to 4.5.1. If you need to move the content of your DR550 fixed content devices from Content Engine version 3.5.2 to version 4.5.1, contact IBM Support.

Backing up the database

You must back up the database before you begin the upgrade from version 3.5.2.

1. Use your existing database backup solution to back up each of the Content Engine object store databases.
2. Make a backup copy of the version 3.5.2 Global Configuration Data GCD file. The default location is `C:\Program Files\FileNet\Content Engine\sysconfig\sysinit\sysinit.dat`.

Stopping and disabling all services related to Content Engine

You must stop and disable all services related to Content Engine on all servers in the FileNet P8 domain before you begin the upgrade from version 3.5.2.

1. Log on with local administrator permissions to the server where Content Engine version 3.5.2 is installed.
2. Stop and disable the following services:
   - 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
   - FileNet P8 CFS Server for FileNet Image Services
3. Right-click the Apache services monitor in the Windows system tray, and click **Exit**.
4. Repeat this procedure on each Content Engine server in your FileNet P8 domain.

Upgrading Content Engine and related client software

If you are upgrading from Content Engine version 3.5.2 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 3.5.2 on a Windows server to Content Engine version 4.5.1 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 IBM FileNet Enterprise Manager and the Content Engine Upgrader tool.

It is a best practice to retain a Windows machine where version 3.5.2 of IBM FileNet Enterprise Manager is installed. If you use the Content Engine Upgrader tool, you need access to this Windows-based tool. If you use Content Engine Web Upgrade Tool, you can browse to it only from a machine where version 8.0 of Microsoft Internet Explorer is installed.

1. "Installing or upgrading Content Engine"
   You can install or upgrade Content Engine, Configuration Manager, .NET Clients (including IBM FileNet Enterprise Manager), Content Engine Upgrader, and FileNet Deployment Manager either interactively or silently.
2. "Installing Content Engine software updates" on page 22
   You must apply any updates, fix packs, or interim fixes for the Content Engine software that have been released.
3. "Installing the latest Content Search Engine Client files on Content Engine servers" on page 22
   If your environment includes Content Search Engine, you must install the files that Content Engine uses to communicate with Content Search Engine.
4. "Installing the latest Process Engine client files on Content Engine servers" on page 24
   You must install the Process Engine Client files on all application server machines where Content Engine Server is deployed.

Installing or upgrading Content Engine

You can install or upgrade Content Engine, Configuration Manager, .NET Clients (including IBM FileNet Enterprise Manager), Content Engine Upgrader, and FileNet Deployment Manager either interactively or silently.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

If you are installing in a managed environment, then the application server must be the Deployment Manager node for WebSphere Application Server or the Administrator node for Oracle WebLogic Server.

If the Content Engine installer detects an existing Content Engine installation, the software will be upgraded.

Some Content Engine components must be installed on a Windows operating system. The following table lists the Content Engine components and the required operating system.

Table 1. Content Engine components

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

Table 1. Content Engine components (continued)

Component	Required Platform
Content Engine Upgrader	Windows only
FileNet Deployment Manager	Windows only

Install the .NET Clients software only on machines where you intend to run either the Enterprise Manager administrative client or a customized client application.

Important: You must keep one running version of Enterprise Manager version 3.5.2 until after you upgrade the Content Engine data. You must use Enterprise Manager version 3.5.2 to prepare your version 3.5.2 object stores for the Content Engine data upgrade.

The Content Engine Upgrader tool or Content Engine Web Upgrade Tool is required to upgrade Content Engine and Content Search Engine data from version 3.5.2.

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.

You can install or upgrade Content Engine interactively or silently.

"Installing Content Engine interactively"
You can interactively install or upgrade Content Engine, Configuration Manager, .NET Clients (including IBM FileNet Enterprise Manager), Content Engine Upgrader, and IBM FileNet Deployment Manager.

"Installing Content Engine silently" on page 21
You can silently install or upgrade Content Engine, Configuration Manager, .NET Clients (includingIBM FileNet Enterprise Manager), Content Engine Upgrader, and IBM FileNet Deployment Manager.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Configuring storage devices for migration to UNIX" on page 59
When you upgrade from Content Engine version 3.5.2 and migrate to a UNIX server, you must prepare the UNIX server to mount your existing file store devices.

Installing Content Engine interactively:

You can interactively install or upgrade Content Engine, Configuration Manager, .NET Clients (including IBM FileNet Enterprise Manager), Content Engine Upgrader, and IBM FileNet Deployment Manager.

Be sure that you have available the Installation and Upgrade Worksheet that was filled out during your planning activities.

Important: You must keep one running version of Enterprise Manager version 3.5 until after you upgrade the Content Engine data. You must use Enterprise Manager version 3.5 to prepare your version 3.5 object stores for the Content Engine Upgrader tool.

To install Content Engine:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values, filter by **CE Installer** in the **Installation or Configuration Program** column.
2. Log on as *ce_install_user* to the application server machine where you are going to install Content Engine software.
3. Navigate to the Content Engine software package in the installation media.
4. Run one of the following programs in the software package, depending on your operating system:

Platform	Command
Windows	`P8CE-4.5.1-WIN.EXE`

5. When the installation completes, click **Done** and check for errors in the Content Engine *ce_install_path*`/ce_install_log_4_5_1.txt` error log file, where *ce_install_path* is the location where Content Engine is installed.

Installing Content Engine silently:

You can silently install or upgrade Content Engine, Configuration Manager, .NET Clients (includingIBM FileNet Enterprise Manager), Content Engine Upgrader, and IBM FileNet Deployment Manager.

Be sure that you have available the Installation and Upgrade Worksheet that was filled out during your planning activities.

Important: You must keep one running version of Enterprise Manager version 3.5.2 until after you upgrade the Content Engine data. You must use Enterprise Manager version 3.5.2 to prepare your version 3.5.2 object stores for the Content Engine Upgrader tool.

To install Content Engine:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values, filter by **CE Installer** in the **Installation or Configuration Program** column.
2. Log on as *ce_install_user* to the application server machine where you are going to install Content Engine software.
3. Navigate to the Content Engine software package in the installation media.
4. Edit the `CE_silent_install.txt` file to reflect the installation choices in your worksheet.
5. Run one of the following commands in the software package, depending on your operating system:

Platform	Command
Windows	P8CE-4.5.1-WIN.EXE -f CE_silent_install.txt -i silent

6. When the installation completes, check for errors in the Content Engine error log file *ce_install_path*/ce_install_log_4_5_1.txt, where *ce_install_path* is the location where Content Engine is installed.

Installing Content Engine software updates

You must apply any updates, fix packs, or interim fixes for the Content Engine software that have been released.

If no Content Engine software updates are available, skip this procedure.

To install the Content Engine software updates:

Open the readmes for the Content Engine software updates, and perform the installation procedures in the readmes on each Content Engine instance.

Installing the latest Content Search Engine Client files on Content Engine servers

If your environment includes Content Search Engine, you must install the files that Content Engine uses to communicate with Content Search Engine.

Important: With the initial release of Content Engine 4.5.1, the Content Search Engine 4.5.1 client files are included. Therefore, you are not required to manually install these client files on a new Content Engine server. However, if fix packs of these client files become available, install them manually before you use Configuration Manager to configure and deploy Content Engine. For instructions on how to obtain the latest Content Search Engine Client software updates, access the IBM FileNet P8 Platform support site.

You can manually install Content Search Engine Client files either interactively or silently:

"Installing Content Search Engine Client files interactively"
You can install the Content Search Engine Client files interactively by running the installation program on all application server machines where Content Engine Server is installed.

"Installing Content Search Engine Client files silently" on page 23
You can install the Content Search Engine Client files silently by editing a silent input file and running the installation program from a command line. You must install Content Search Engine Client files on all application server machines where Content Engine Server is installed.

Installing Content Search Engine Client files interactively:

You can install the Content Search Engine Client files interactively by running the installation program on all application server machines where Content Engine Server is installed.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install Content Search Engine Client files:

1. Open your completed Installation and Upgrade Worksheet file.

Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Search Engine Client values, filter by **CSE Client Installer** in the **Installation or Configuration Program** column.

2. 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.
3. On the machine where Content Engine is to be deployed, log on as *ce_install_user*.
4. Locate the Content Search Engine Client installation software. It must be the same version as your Content Search Engine Server software. You must install Content Search Engine and Content Engine software on the same operating system. For example, if Content Engine runs on Windows, locate the Content Search Engine Client installation software that runs on Windows.
5. Start the installation program.

Operating System	Install Program
Windows	`P8CSE-CLIENT-4.5.1-WIN.EXE`

6. Complete the Content Search Engine Client installation screens by using the values in your worksheet.
7. Review the following Content Search Engine Client log files:
   - Windows - *cse_client_install_path*`\CSEClient_install_log_4.5.1.0.log`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing Content Search Engine Client files silently:

You can install the Content Search Engine Client files silently by editing a silent input file and running the installation program from a command line. You must install Content Search Engine Client files on all application server machines where Content Engine Server is installed.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install Content Search Engine Client files:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Search Engine Client values, filter by **CSE Client Installer** in the **Installation or Configuration Program** column.
2. 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.
3. On the machine where Content Engine is to be deployed, log on as *ce_install_user*.
4. Locate the Content Search Engine Client installation software. It must be the same version as your Content Search Engine Server software. You must install Content Search Engine and Content Engine software on the same operating

system. For example, if Content Engine runs on Windows, locate the Content Search Engine Client installation software that runs on Windows.

5. Locate the `CSE_silent_install.txt` file within the directory that contains the Content Search Engine Client installation software, and edit the file to specify the location where you want to install the Content Search Engine Client files.

   The default installation paths are as follows:

   Windows

   ```
   C:\Program Files\IBM\FileNet\ContentEngine\CSEClient
   ```

6. Start the silent installation of Content Search Engine Client files by running the following command.

Operating System	Install Program
Windows	`P8CSE-CLIENT-4.5.1-WIN.EXE –f CSEClient_silent_install.txt –i silent`

7. Review the following Content Search Engine log files:
   - Windows - *`cse_client_install_path`*`\CSEClient_install_log_`*`release_number`*`.log`

Related concepts

Installation and upgrade worksheet

For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing the latest Process Engine client files on Content Engine servers

You must install the Process Engine Client files on all application server machines where Content Engine Server is deployed.

"Upgrading the latest Process Engine client files on Content Engine servers interactively"
The upgrade wizard provides an interactive way to upgrade the Process Engine Client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

"Upgrading the latest Process Engine client files on Content Engine servers silently" on page 25
You can upgrade the Process Engine Client software on the Content Engine server by using a silent input text file and running the upgrade program from the command line. Use the values in your installation and upgrade worksheet to edit the silent input text file before you run the upgrade.

Upgrading the latest Process Engine client files on Content Engine servers interactively:

The upgrade wizard provides an interactive way to upgrade the Process Engine Client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To upgrade the Process Engine Client files:

1. Open your completed Installation and Upgrade Worksheet file.

Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values, filter by **PE Client Installer** in the **Installation or Configuration Program** column.

2. 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.
3. On the machine where Content Engine is to be deployed, log on as *ce_upgrade_user*.
4. 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.
5. Expand the (TAR or ZIP) Process Engine Client install software.
6. Shut down all instances of Enterprise Manager and any other Content Engine client applications, such as Application Engine.
7. Run the command for the installation program according to your operating system.

Operating System	Install Program
Windows	`P8PE-CLIENT-4.5.1-WIN.EXE`

8. Complete the Process Engine client install screens.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading the latest Process Engine client files on Content Engine servers silently:

You can upgrade the Process Engine Client software on the Content Engine server by using a silent input text file and running the upgrade program from the command line. Use the values in your installation and upgrade worksheet to edit the silent input text file before you run the upgrade.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install the Process Engine Client files silently:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values, filter by **PE Client Installer** in the **Installation or Configuration Program** column.
2. 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.
3. On the machine where Content Engine is to be deployed, log on as *ce_upgrade_user*.
4. 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.
5. Expand the (TAR or ZIP) Process Engine Client install software.

6. Shut down all instances of Enterprise Manager and any other Content Engine client applications, such as Application Engine.
7. In the expanded install software, open the file `PEClient_silent_install.txt` and edit it as follows: Change the `Variable_CheckboxCE` line to the following line:

   ```
   -V Variable_CheckboxCE="true"
   ```
8. Save your edits.
9. Run one of the commands in the following table to perform the silent install:

Operating System	Install Program
Windows	`P8PE-CLIENT-4.5.1-WIN.EXE -silent -options "PEClient_silent_install.txt"`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Configuring Content Engine

You can configure and deploy all of your Content Engine instances by using Configuration Manager. A single Content Engine application instance equates to one deployed application on your application server.

Configuration is a multiple step process. You must provide information about your Content Engine application environment, then you apply the settings by running the configuration tasks, and then you deploy the application. You can configure multiple instances before you deploy any of them, or you can configure and deploy one instance at a time.

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

- Application server properties
- Java Database Connectivity (JDBC) data source properties for the Global Configuration Data (GCD) database
- Java Database Connectivity (JDBC) data source properties for each object store database
- Directory service (LDAP) provider properties
- Content Engine application login modules
- Content Engine bootstrap properties

Remember the following points when you prepare to configure Content Engine:

- (WebSphere Application Server only) For best results, configure no more than one Content Engine instance in a WebSphere profile.
- If you need an accessible software version of Configuration Manager for people with disabilities, use the command-line version of Configuration Manager.
- If your FileNet P8 domain uses multiple non-managed application servers, then you use a copy of a single EAR file with the bootstrap settings on all the servers. After you complete the tasks on the initial server, you copy the EAR file with the bootstrap settings to the additional servers.

Begin the configuration process by ensuring that you have the necessary operating system permissions to use Configuration Manager.

To grant permissions to the Configuration Manager user:

1. Log on as *ce_install_user* to the server where you installed Content Engine.
2. Grant permissions to the *config_mgr_user* user for the executable file that you intend to use:

Option	Description
Windows - graphical user interface	Grant read and execute permission to `configmgr.exe`
Windows - command line	Grant read and execute permission to `configmgr_cl.exe`

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

   If you do not specify the profile 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 server and log on again as *config_mgr_user*.

1. "Configuring Content Engine instances by using the graphical user interface" You can use the graphical user interface version of Configuration Manager to configure and deploy a Content Engine application instance on an application server.
2. "Configuring instances by using the command line" on page 34 You can configure a Content Engine instance on a web application server by using the command-line version of Configuration Manager.

Configuring Content Engine instances by using the graphical user interface

You can use the graphical user interface version of Configuration Manager to configure and deploy a Content Engine application instance on an application server.

First, you create a configuration profile that defines:

- The JDBC data source settings
- The login modules for the Content Engine application
- The directory service provider (LDAP) settings
- The Content Engine bootstrap settings

You can follow the recommended order to edit and run the individual configuration tasks. However, you can edit and run the Configure GCD JDBC Data Sources, Configure Login Modules, Configure LDAP properties, and Configure Bootstrap tasks in any order. 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. However, you must complete all of these tasks before you deploy the application.

1. "Starting Configuration Manager" on page 28 You can start the graphical interface version of Configuration Manager to configure a Content Engine application instance on a web application server.
2. "Changing the password save preference" on page 29 By default, any passwords that you enter in the graphical user interface in Configuration Manager are not saved to a file. The passwords are stored in memory as long as you have the profile open in Configuration Manager. You can change the password save preference to save the passwords each time that you save your changes to a profile.

3. "Creating a new configuration profile" on page 29
   Configuration Manager stores your settings for deploying a Content Engine application instance in a configuration profile. The profile defines the application server settings, the JDBC data source settings, the login modules settings, the directory service provider (LDAP) settings, the Content Engine bootstrap settings, and the application deployment settings. You must create a new profile for each Content Engine instance that you are configuring.
4. "Configuring the Global Configuration Data JDBC data source settings" on page 30
   You must provide property information about the JDBC data sources for the Global Configuration Data (GCD) database. Content Engine uses the data source information to connect to and update the GCD database.
5. "Configuring the login modules (WebSphere and JBoss only)" on page 31
   You must configure the login modules for the Content Engine application. The login modules provide authentication information for the Content Engine application.
6. "Configuring the directory service provider (LDAP) settings" on page 32
   You must configure the directory service provider (LDAP) settings. The directory service provider (LDAP) settings define the directory service and the users and groups that Content Engine uses for authentication.
7. "Configuring the bootstrap settings" on page 33
   You must configure the bootstrap settings. The bootstrap information is needed for creating the Global Configuration Data (GCD) and for starting Content Engine.

Starting Configuration Manager:

You can start the graphical interface version of Configuration Manager to configure a Content Engine application instance on a web application server.

To start Configuration Manager:

1. Start Configuration Manager by running one of the following commands, depending on the operating system that runs on the machine where you installed Content Engine:

Option	Description
Windows	Perform one of the following actions: • Double-click the **FileNet Configuration Manager** desktop shortcut. • Click **Start** → **All Programs** → **IBM FileNet P8 Platform** → **FileNet Configuration Manager**. • Run the following command: *ce_install_path*\tools\configure\configmgr.exe

   The first time that you start Configuration Manager, the Welcome is displayed.
2. Select one of the links in the Welcome to learn more or to start working in a wizard, or close the Welcome by clicking the **X** in the tab at the upper left. You can reopen the Welcome later, as needed, from the **Help** menu.

Related tasks

"Deploying upgraded instances by using the graphical user interface" on page 47
You can deploy an upgraded Content Engine Server instance on a web application server by using the graphical user interface version of Configuration Manager. Deploying makes the Content Engine application available for use.

Changing the password save preference:

By default, any passwords that you enter in the graphical user interface in Configuration Manager are not saved to a file. The passwords are stored in memory as long as you have the profile open in Configuration Manager. You can change the password save preference to save the passwords each time that you save your changes to a profile.

When you close the profile, the passwords are erased from memory. Each time that you start Configuration Manager or open a saved profile, you must specify any passwords required by the tasks and for the application server properties before you run the tasks; otherwise, the tasks won't run successfully. If your site security requirements permit you to save passwords to a file, you can change the password save preference setting.

To change the password save preference:

1. Click **Window** → **Preferences**.
2. Complete one of the following actions:

Option	Description
To save passwords to file	Select the **Save all passwords to file when saving a task or profile** check box.
To prevent writing passwords to file	Clear the **Save all passwords to file when saving a task or profile** check box.

3. Click **OK**.

Creating a new configuration profile:

Configuration Manager stores your settings for deploying a Content Engine application instance in a configuration profile. The profile defines the application server settings, the JDBC data source settings, the login modules settings, the directory service provider (LDAP) settings, the Content Engine bootstrap settings, and the application deployment settings. You must create a new profile for each Content Engine instance that you are configuring.

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 and for the configuration profile file 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 is installed. For more information on profiles, see "Configuration profile concepts" on page 228.

Tip: For more information on the properties and values that you set in Configuration Manager, roll your mouse over the property name to view the tool tip help for the property.

To create a configuration profile:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CM: Create New Installation Profile** in the **Installation or Configuration Program** column.
2. Start the Create New Installation Profile wizard by selecting **File → New Installation Profile**.
3. Complete the wizard screens by using the values in your worksheet.
4. Optional: WebSphere Application Server and Oracle WebLogic Server only. In the Set Properties for Application Server screen, click **Test Connection** to test the connection between Configuration Manager and the application server by using the information that you provided. The test is optional, and you can proceed in the wizard even if the test fails. If the test fails, make sure that the application server is running and that the application server property values that you entered match the values that are defined in your application server.

The profile you created is displayed as an icon in the profile pane (left pane), along with icons for the tasks you selected. By default, the **Deploy Application** task is disabled. You must enable the task later in the configuration process.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Configuration Manager user interface reference" on page 234
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.

Configuring the Global Configuration Data JDBC data source settings:

You must provide property information about the JDBC data sources for the Global Configuration Data (GCD) database. Content Engine uses the data source information to connect to and update the GCD database.

Ensure that the application server is running or stopped, depending on its type:

Table 2. Required application server state

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

To configure the JDBC settings:

1. Open your completed Installation and Upgrade Worksheet file.

Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CM: Configure GCD JDBC Data Sources** in the **Installation or Configuration Program** column.

2. If your configuration profile is not open in Configuration Manager, open the profile.
3. Right-click **Configure GCD JDBC Data Sources** in the profile pane and select **Edit Selected Task**.
4. Enter the property values for your database by using the values in your worksheet.
5. Optional: (WebSphere and WebLogic only) Click **Test Database Connection** to test the connection to the database by using the database user name, database server name, database name, port number, and password that you provided. The test does not create the data sources.
6. Select **File → Save** to save your changes.
7. Ensure that the task is enabled. When the task is disabled, the task name includes the text **(disabled)**. To enable the task, select **Configure GCD JDBC Data Sources (disabled)** in the profile pane, and then either right-click and choose **Enable Selected Task** from the context menu, or click the **Enable the Selected Task** icon in the task toolbar.
8. Apply the JDBC property settings by right-clicking **Configure GCD JDBC Data Sources** in the profile pane, and selecting **Run Task**. Running the configuration task can take several minutes. The task execution status messages are displayed in the console pane below the JDBC properties.
9. Close the Configure GCD JDBC Data Sources task pane. In this step, you created the GCD data sources. You create the initial object store data sources later in the configuration process.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Configuration Manager user interface reference" on page 234
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.

Configuring the login modules (WebSphere and JBoss only):

You must configure the login modules for the Content Engine application. The login modules provide authentication information for the Content Engine application.

Ensure that the application server is running or stopped, depending on its type:

Table 3. Required application server state

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

To configure the login module settings:

1. If your configuration profile is not open in Configuration Manager, open the profile.
2. Ensure that the task is enabled. When the task is disabled, the task name includes the text **(disabled)**. To enable the task, select **Configure Login Modules (disabled)** in the profile pane, and then either right-click and choose **Enable Selected Task** from the context menu, or click the **Enable the Selected Task** icon in the task toolbar.
3. Create the login modules by right-clicking **Configure Login Modules** in the profile pane, and selecting **Run Task**. Running the configuration task can take several minutes. The task execution status messages are displayed in the console pane below the login modules properties.
4. Close the Configure Login Modules task pane.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Configuration Manager user interface reference" on page 234
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.

Configuring the directory service provider (LDAP) settings:

You must configure the directory service provider (LDAP) settings. The directory service provider (LDAP) settings define the directory service and the users and groups that Content Engine uses for authentication.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

If you plan to configure Content Engine to use the directory server's e-mail attribute or, for Active Directory, the userPrincipalName (UPN) to be the user short name used for login, then you must perform additional configuration steps and enter specific values for your LDAP settings. For detailed steps, see the IBM FileNet P8 help topic **System Administration → Enterprise-wide Administration → FileNet P8 Security → How to... → Configuration Content Engine to use e-mail or UPN for login**.

To configure the LDAP settings:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CM: Configure LDAP** in the **Installation or Configuration Program** column.
2. If your configuration profile is not open in Configuration Manager, open the profile.
3. Enter property values for the LDAP provider:
   a. Right-click **Configure LDAP** in the profile pane, and select **Edit Selected Task**.
   b. Enter the property values for your LDAP provider, by referring to the values from your worksheet.

4. Optional: (WebSphere and WebLogic only) Click **Test LDAP Connection** to test the connection to the directory service provider by using the directory service bind user name, host name, port number, and password that you provided.
5. Click **File** → **Save** to save your changes.
6. Ensure that the task is enabled. When the task is disabled, the task name includes the text **(disabled)**. To enable the task, select **Configure LDAP (disabled)** in the profile pane, and then either right-click and choose **Enable Selected Task** from the context menu, or click the **Enable the Selected Task** icon in the task toolbar.
7. Apply the LDAP property settings by right-clicking **Configure LDAP** in the profile pane and selecting **Run Task**. Running the configuration task can take several minutes. The task execution status messages are displayed in the console pane below the LDAP properties.
8. Close the Configure LDAP task pane.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Configuration Manager user interface reference" on page 234
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.

Configuring the bootstrap settings:

You must configure the bootstrap settings. The bootstrap information is needed for creating the Global Configuration Data (GCD) and for starting Content Engine.

Be sure that you have available the Installation and Upgrade Worksheet that was filled out during your planning activities.

If your FileNet P8 domain uses multiple non-managed application servers, then complete this procedure only on the initial server. You use a copy of the same EAR file with the bootstrap settings on all the servers.

To edit the bootstrap settings:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CM: Configure bootstrap properties** in the **Installation or Configuration Program** column.
2. If your configuration profile is not open in Configuration Manager, open the profile.
3. Right-click **Configure Bootstrap Properties** in the profile pane and select **Edit Selected Task**.
4. In the **Bootstrap operation** field, select **Configure New**.
5. Enter the property values for your database by using the values in your worksheet.

6. Optional: Click **Verify Bootstrap Information** to display the bootstrap information from the modified EAR file.
7. Click **File** → **Save** to save your changes.
8. Ensure that the task is enabled. When the task is disabled, the task name includes the text **(disabled)**. To enable the task, select **Configure Bootstrap Properties (disabled)** in the profile pane, and then either right-click and choose **Enable Selected Task** from the context menu, or click the **Enable the Selected Task** icon in the task toolbar.
9. 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.
10. Close the Configure Bootstrap Properties task pane.
11. If your FileNet P8 domain uses multiple non-managed application servers, then copy the *ce_install_path*/ContentEngine/tools/configure/profiles/*my_profile*/ear/*Engine-app_server_type.ear* file to each additional Content Engine server.

    install_dir
    The location where Content Engine is installed.

    my_profile
    The directory for the Configuration Manager profile that you created.

    Engine-app_server_type.ear
    The EAR file for your application server type: `Engine-ws.ear`, `Engine-wl.ear`, or `Engine-jb.ear`.

    Important: Only run the **Configure bootstrap properties** task on the initial server.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Configuration Manager user interface reference" on page 234
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.

Configuring instances by using the command line

You can configure a Content Engine instance on a web application server by using the command-line version of Configuration Manager.

Begin by generating the configuration XML files that define the application server settings, the Global Configuration Data (GCD) data source JDBC data source settings, the login modules for the Content Engine application, the directory service provider (LDAP) settings, and the Content Engine bootstrap settings. Next, edit the files to provide values for your environment. Then, apply the settings by executing the tasks from a command prompt.

You must generate, edit, and run a complete set of configuration XML to configure a Content Engine application. If you are deploying multiple Content Engine application instances on the same application server, you must 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 complete the configuration tasks by generating all the configuration XML files before editing, running, or verifying any of them; or you can generate, edit, run, and verify one file at a time.

1. "Generating the configuration XML files for a Content Engine instance"
   The configuration XML files contain the properties and values for the various configuration tasks. From the command line, you can generate all the XML files at the same time, or you can generate a single configuration XML file at a time.
2. "Editing the configuration XML files for a Content Engine instance" on page 40
   You must edit each configuration XML file to provide the property values for your environment. You can use any text editor to open and edit the files.
3. "Running the configuration XML files" on page 43
   Running the configuration XML files applies the settings. You use the **execute** command to apply your configuration settings from the command line.
4. "Checking the completion status of Content Engine configuration tasks" on page 46
   Task execution messages are displayed in the console when you run a task, and you can view the status of a specific task at any time by running the **checkStatus** command. From the command line, you can check the status of all the configuration tasks or check the status of a single task.

Generating the configuration XML files for a Content Engine instance:

The configuration XML files contain the properties and values for the various configuration tasks. From the command line, you can generate all the XML files at the same time, or you can generate a single configuration XML file at a time.

The following table lists the configuration XML files that you need to generate to configure a new Content Engine instance.

Table 4. Configuration XML files

File Name	Description
`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 the same time or individually) and is used by all of the configuration tasks. If you generate the files one at a time, this file is created only once.
`configurebootstrap.xml`	Settings for creating the Global Configuration Data (GCD) and starting Content Engine.

Table 4. Configuration XML files (continued)

File Name	Description

`configurejdbcgcd.xml`
 	
`configurejdbcgos.xml`
 	
`configurejdbcos.`*n*`.xml` , where *n* is an integer starting with 2
	Settings for configuring JDBC connections to the databases used by Content Engine. You must generate, edit, and run the configure the JDBC task once for the data sources for the Global Configuration Data (GCD) and then again for the data sources for each object store.
	
	If you generate a second JDBC configuration file, then it is named `configurejdbc.2.xml`. The file name increments for each new file that you generate.

`configureldap.xml` `configureldap.`*n*`.xml` , where *n* is an integer starting with 2	Settings for connecting to and searching within a directory server. If your site uses multiple LDAP providers, you can generate an additional file for each provider. If you generate a second LDAP configuration file, then it is named `configureldap.2.xml`. The file name increments for each new file that you generate.
`configureloginmodules.xml`	Settings for creating the application server login modules for Content Engine.

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

"Generating all of the configuration XML files at the same time"
From the command line, you can generate all of the required configuration XML files for Content Engine at the same time with a single command.

"Generating one configuration XML file at a time (WebSphere)" on page 38
From the command line, you can generate each of the required configuration XML files for Content Engine one file at a time.

Generating all of the configuration XML files at the same time:

From the command line, you can generate all of the required configuration XML files for Content Engine at the same time with a single command.

When you run the **generateconfig** command, all the required configuration XML files are created.

To generate all the configuration XML files at the same time:

1. Log on to the application server as *config_mgr_user*, the user who runs Configuration Manager.
2. Change the current directory to *ce_install_path*`/tools/configure`, where *ce_install_path* is the location where the Content Engine software is installed.
3. Run the following command. Do not type any line breaks when you enter the command.

WebSphere Application Server

```
configmgr_cl generateconfig -appserver app_server_type
 -repositorytype ldap_repository_type
 -db db_type -ldap ldap_type
 -bootstrap bootstrap_operation
 -deploy deploy_type -profile myprofile
```

Where:

-appserver *appserver_name*
The **-appserver** *appserver_type* parameter specifies the type of application server and must be `WebSphere`, `WebLogic`, or `JBoss`.

-repositorytype *ldap_repository_type*
WebSphere Application Server only. The **-repositorytype** *ldap_repository_type* parameter specifies the type of LDAP repository to use and must be `standalone` or `federated`.

-db *database_type*
The **-db** *database_type* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `configurejdbcgcd` or `configurejdbcos` option. This parameter specifies the type of database to be used by Content Engine and must be `mssql`, `oracle`, `oracle_rac`, `db2`, or `db2zos`.

-ldap *ldap_type*
The **-ldap** *ldap_type* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `configureldap` option. This parameter specifies the type of directory service repository that Content Engine uses for authenticating users and must be `activedirectory`, `adam`, `edirectory`, `oid`, `sunjava`, or `tivoli`. The `adam` value applies to both Microsoft ADAM and AD LDS.

-bootstrap *bootstrap_operation*
The **-bootstrap** *bootstrap_operation* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `configurebootstrap` option. This parameter specifies the bootstrap operation for the profile and must be `new`, `modify`, or `upgrade`.

-deploy *deploy_type*
The **-deploy** *deploy_type* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `deployapplication` option. This parameter specifies the type of Content Engine deployment. The value must be `standard`, `cluster`, or `netdeploy` (network deployment).

Specify `standard` if you are deploying Content Engine to a stand-alone (that is, a server that is neither managed nor clustered) WebSphere Application Server, Oracle WebLogic Server, or JBoss Application Server.

Specify `cluster` if you are deploying Content Engine to a WebSphere Application Server, Oracle WebLogic Server, or JBoss Application Server cluster.

Specify `netdeploy` if you are deploying Content Engine to a managedWebSphere Application Server instance. That is, you are using Network Deployment to manage individual servers that are not necessarily in a cluster.

-profile *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
- The fully qualified path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".

For example, the following command generates all the configuration XML files for a new installation profile for a standard deployment on WebSphere with IBM Tivoli® Directory Server that uses a stand-alone LDAP repository and DB2 in the *ce_install_path*/tools/configure/profiles/wstdb2 directory:

```
configmgr_cl generateconfig -appserver WebSphere
 -repositorytype standalone -db db2 -ldap tivoli
 -bootstrap new -deploy standard -profile wstdb2
```

Generating one configuration XML file at a time (WebSphere):

From the command line, you can generate each of the required configuration XML files for Content Engine one file at a time.

You must generate the configuration XML files for each of these required configuration tasks:

- Create the XML file for the bootstrap properties file by using the configurebootstrap option.
- Create the XML file for configuring the JDBC Data Sources for the Global Configuration Data (GCD) database by using the configurejdbcgcd option.
- Create the XML file for configuring the JDBC Data Sources for a single object store database by using the configurejdbcos option.
- Create the XML file for configuring the LDAP provider by using the configureldap option.
- WebSphere Application Server and JBoss Application Server only. Create the XML file for configuring the login modules by using the configureloginmodules option.

To generate a single configuration XML file:

1. Log on to the application server as *config_mgr_user*, which is the user who will run Configuration Manager.
2. Change the current directory to *ce_install_path*/tools/configure.
3. Run the appropriate command for the task you need. Do not type any line breaks when you enter the command.

WebSphere Application Server only. Generate the `configurebootstrap.xml` file for the `configurebootstrap` task:

```
configmgr_cl generateconfig -appserver app_server_type
 -repositorytype  ldap_repository_type
 -task configurebootstrap -bootstrap bootstrap_operation
 -profile myprofile
```

Generate the `configurejdbcgcd.xml` file for the `configurejdbcgcd` task for the GCD data sources:

```
configmgr_cl generateconfig -appserver app_server_type
 -repositorytype ldap_repository_type -db db_type
 -task configurejdbcgcd -profile myprofile
```

Generate the `configureldap.xml` file for the `configureldap` task:

```
configmgr_cl generateconfig -appserver app_server_type
 -repositorytype  ldap_repository_type -ldap ldap_type
 -task configureldap -profile myprofile
```

Generate the `configureloginmodules.xml` file for the `configureloginmodules` task:

```
configmgr_cl generateconfig -appserver app_server_type
 -repositorytype  ldap_repository_type -task configureloginmodules
 -profile myprofile
```

where:

-appserver *appserver_name*
-appserver *appserver_type* specifies the type of application server and must be WebSphere.

-repositorytype *ldap_repository_type*
WebSphere Application Server only. The **-repositorytype** *ldap_repository_type* parameter specifies the type of LDAP repository to use and must be `standalone` or `federated`.

-db *database_type*
The **-db** *database_type* parameter is required only when you are generating files by using the `configurejdbcgcd` or `configurejdbcos` option. This parameter specifies the type of database to be used by Content Engine and must be `mssql`, `oracle`, `oracle_rac`, `db2`, or `db2zos`.

-ldap *ldap_type*
The **-ldap** *ldap_type* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `configureldap` option. This parameter specifies the type of directory service repository that Content Engine uses for authenticating users and must be `activedirectory`, `adam`, `edirectory`, `oid`, `sunjava`, or `tivoli`. The `adam` value applies to both Microsoft ADAM and AD LDS.

-bootstrap *bootstrap_operation*
The **-bootstrap** *bootstrap_operation* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `configurebootstrap` option. This parameter specifies the bootstrap operation for the profile and must be `new`, `modify`, or `upgrade`.

- *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.

- The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
- The fully qualified path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.

4. Repeat as needed to generate all the required XML configuration files.

Editing the configuration XML files for a Content Engine instance:

You must edit each configuration XML file to provide the property values for your environment. You can use any text editor to open and edit the files.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To edit values in the configuration XML files:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values, in the **Installation or Configuration Program** column filter by each of the following items, depending on which XML file you are editing:
   - **CM: Set Application Server properties**
   - **CM: Configure GCD JDBC Data Sources**
   - **CM: Configure LDAP**
   - **CM: Configure Bootstrap Properties**
2. Use a text editor or XML editor to open one of the following configuration XML files that you generated:
   - `applicationserver.xml`
   - `configurejdbcgcd.xml` for the Global Configuration Data (GCD)
   - `configureldap.xml`
   - `configurebootstrap.xml`

   Do not edit the `configureloginmodules.xml`, `configurejdbcos.xml`, or `deployapplication.xml` files at this time.
3. Make the following changes to each XML configuration file:
   a. Replace each occurrence of `****INSERT VALUE****` with a value appropriate for your site. See the descriptions in the file for more information.

      Important: You do not need to supply values for passwords. You can run the **storepasswords** command later to add encrypted passwords to the file.
   b. Verify that the default values for the remaining properties are correct for your site.

c. Set the **enabled** attribute value in the <configuration> tag to `true` in any configuration XML file you edit if you want to run the configuration task.

4. (WebSphere Application Server only) If you 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 `configurejdbcgcd.xml` file, set the **enabled** attribute value to `false` in the <configuration> tag 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, that are associated with the GCD database.
5. Save your edits and close the XML file.
6. Optional: Add encrypted passwords to the XML files by running the **storepasswords** command.
   a. Enter the following command on one line:

      ```
      configmgr_cl storepasswords [-task task_type | -taskfile task_file_name]
       -profile myprofile
      ```

      where:

      -task *task_type*
      The **-task** *task_type* parameter is optional and specifies a task for which to encrypt passwords. The *task_type* value is not case sensitive. The following table lists each valid task name, its associated configuration XML file, and a description of the Content Engine settings affected by the task.

Table 5. task_type values

Task	Configuration file	Description

omitted	`applicationserver.xml`
	`configurebootstrap.xml`
	`configurejdbc.xml`
	`configureldap.xml`
	`deployapplication.xml`
		When you omit the `-task task_type` parameter, you are prompted to enter the passwords for each configuration XML file in the profile. Each password is encrypted before it is added to the XML file.

`configurebootstrap`	`configurebootstrap.xml`	Encrypts the password for the `BootstrapPassword` property that is used to create the Global Configuration Data and to start Content Engine.
`configurejdbcgcd`	`configurejdbcgcd.xml`	Encrypts the password for the `DatabasePassword` property that Content Engine uses to access the GCD database.

Table 5. task_type values (continued)

Task	Configuration file	Description
`configurejdbcos`	`configurejdbcos.xml` `configurejdbcos.`*`n`*`.xml`, where *n* is an integer starting with 2	Encrypts the password for the `DatabasePassword` property that Content Engine uses to access the object store database. If you have more than one `configurejdbcos.`*`n`*`.xml` file, run the command for each task file.
`configureldap`	`configureldap.xml` `configureldap.`*`n`*`.xml`, where *n* is an integer starting with 2	Encrypts the password for the `LDAPBindPassword` property that Content Engine uses to connect to the directory server for authenticating Content Engine users. If you have more than one `configureldap.`*`n`*`.xml` file, run the command for each task file.

-taskfile *task_file_name*
The **-taskfile** *task_file_name* parameter specifies the configuration XML file to use.

If only one task file exists for the *task_type*, then the **-taskfile** *task_file_name* parameter is optional.

If more than one task file for the *task_type* exists, then you must include the **-taskfile** *task_file_name* parameter. You can omit the **-task** *task_type* parameter when you specify the **-taskfile** *task_file_name* parameter.

-profile *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *`ce_install_path`*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
- The absolute path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.

7. Repeat this procedure as needed until you edit all the required files.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Running the configuration XML files:

Running the configuration XML files applies the settings. You use the **execute** command to apply your configuration settings from the command line.

If you need to run the configuration XML files for a profile that was created or edited in the Configuration Manager graphical user interface, verify that the XML files contain values for the required passwords before you attempt to run the files. See "Handling passwords in Configuration Manager" on page 231 for more information.

To run the configuration XML files:

1. Start or stop the application server.

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

2. Run the configuration XML files, either all at the same time or one file at a time.

   "Running all of the configuration XML files at the same time"
   From the command line, you can run all of the required configuration XML files for Content Engine at the same time with a single command. Any configuration XML file that has the `<TaskEnbled>` element set to false is skipped.

   "Running one configuration XML file at a time" on page 44
   From the command line, you can run each of the required configuration XML files one file at a time. You must run each of the required files to complete the Content Engine configuration.

Running all of the configuration XML files at the same time:

From the command line, you can run all of the required configuration XML files for Content Engine at the same time with a single command. Any configuration XML file that has the `<TaskEnbled>` element set to false is skipped.

If your FileNet P8 domain uses multiple non-managed application servers, then you use a copy of a single EAR file with the bootstrap settings on all the servers. After you run all the tasks on the initial server, you copy the EAR file with the bootstrap settings to the additional servers. Then, when you run the tasks for the additional servers, do not use this procedure to run all tasks at once on the additional servers. Instead, only run the tasks for configuring the JDBC data sources for the GCD, configuring the JDBC data sources for the object stores, and configuring the LDAP provider.

For all other configurations, you can run all the tasks at once on each Content Engine server.

To run all the configuration XML files at the same time:

1. Change the current directory to *ce_install_path*/tools/configure, where *ce_install_path* is the location where the Content Engine software is installed.
2. Run the following command.

   ```
   configmgr_cl execute -profile myprofile
   ```

   where the **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

   - The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
   - The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
   - The absolute path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

   Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".
3. If your FileNet P8 domain uses multiple non-managed application servers, then copy the *ce_install_path*/ContentEngine/tools/configure/profiles/*my_profile*/ear/*Engine-app_server_type.ear* file to each additional Content Engine server.

   install_dir
   The location where Content Engine is installed.

   my_profile
   The directory for the Configuration Manager profile that you created.

   Engine-app_server_type.ear
   The EAR file for your application server type: Engine-ws.ear, Engine-wl.ear, or Engine-jb.ear.

   Important: For each additional non-managed server, only run the tasks for configuring the JDBC data sources for the GCD, configuring the JDBC data sources for the object stores, and configuring the LDAP provider.

The task execution status messages are displayed.

Running one configuration XML file at a time:

From the command line, you can run each of the required configuration XML files one file at a time. You must run each of the required files to complete the Content Engine configuration.

If you are running tasks for a profile that was created or edited in the Configuration Manager graphical user interface, verify that the XML files contain values for the required passwords before you attempt to run the configuration XML files. See "Handling passwords in Configuration Manager" on page 231 for more information.

You must run the configuration XML files for each of the required configuration tasks:

- Apply the bootstrap properties file by using the `configurebootstrap` option.

  If your FileNet P8 domain uses multiple non-managed application servers, then you use a copy of a single EAR file with the bootstrap settings on all the servers. After you apply the bootstrap properties file on the initial server, you copy the EAR file with the bootstrap settings to the additional servers. Then, when you run the tasks for the additional servers, do not use the `configurebootstrap` option. Only run the tasks for configuring the JDBC data sources for the GCD, configuring the JDBC data sources for the object stores, and configuring the LDAP provider.

  For all other configurations, you can run all the tasks on each Content Engine server.
- Configure the JDBC Data Sources for the Global Configuration Data (GCD) database by using the `configurejdbcgcd` option.
- Configure the JDBC Data Sources for a single object store database by using the `configurejdbcos` option.
- Configure the LDAP provider by using the `configureldap` option.
- Configure the login modules by using the `configureloginmodules` option.

To run the configuration XML files one file at a time:

1. Change the current directory to *ce_install_path*`/tools/configure`, where *ce_install_path* is the location where Content Engine is installed.
2. Run the appropriate command for the task you need to complete. Do not type any line breaks when you enter the command.

   Run the `configurejdbcos.xml` file in a profile with one `configurejdbcos` task:

   ```
   configmgr_cl execute -task configurejdbcos -profile myprofile
   ```

   Run the `configurejdbc.2.xml` file in a profile with multiple `configurejdbcos` tasks:

   ```
   configmgr_cl execute -taskfile task_file_name
   configurejdbc.2.xml -profile myprofile
   ```

   Run the `configureldap.xml` file in a profile with one `configureldap` task:

   ```
   configmgr_cl execute -task configureldap -profile myprofile
   ```

   Run the `configureldap.3.xml` file in a profile with multiple `configureldap` tasks:

   ```
   configmgr_cl execute -taskfile configureldap.3.xml -profile myprofile
   ```

   Run the `configureloginmodules.xml` file:

   ```
   configmgr_cl execute -task configureloginmodules -profile myprofile
   ```

   Run the `configurebootstrap.xml` file in a profile with one `configurebootstrap` task:

   ```
   configmgr_cl execute -task configurebootstrap -profile myprofile
   ```

   Where:

   -taskfile *task_file_name*

   The **-taskfile** *task_file_name* parameter specifies the configuration XML file to use.

   If only one task file exists for the *task_type*, then the **-taskfile** *task_file_name* parameter is optional, but do not use the **-task** *task_type* parameter with the **-taskfile** *task_file_name* parameter.

If more than one task file for the *task_type* exists, then you must include the **-taskfile** *task_file_name* parameter. You can omit the **-task** *task_type* parameter when you specify the **-taskfile** *task_file_name* parameter.

-profile *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
- The fully qualified path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".

Remember: The values that you entered for the configurejdbcgcd task were for the Global Configuration Data (GCD) data sources. You must edit and run the configurejdbcos task once for each object store later in the installation process.

3. If your FileNet P8 domain uses multiple non-managed application servers, then copy the *ce_install_path*/ContentEngine/tools/configure/profiles/*my_profile*/ear/*Engine-app_server_type.ear* file to each additional Content Engine server.

   install_dir
   The location where Content Engine is installed.

   my_profile
   The directory for the Configuration Manager profile that you created.

   Engine-app_server_type.ear
   The EAR file for your application server type: Engine-ws.ear, Engine-wl.ear, or Engine-jb.ear.

   Important: For each additional non-managed server, only run the tasks for configuring the JDBC data sources for the GCD, configuring the JDBC data sources for the object stores, and configuring the LDAP provider. When you run the tasks for the additional servers, do not use the configurebootstrap option on the additional servers.
4. Repeat this procedure as needed to run one of the other configuration XML files until you run the files for each of the four required tasks on this server.

The task execution status messages are displayed.

Checking the completion status of Content Engine configuration tasks:

Task execution messages are displayed in the console when you run a task, and you can view the status of a specific task at any time by running the **checkStatus** command. From the command line, you can check the status of all the configuration tasks or check the status of a single task.

The following table lists the status results and their descriptions.

Table 6. checkstatus command results

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.

Deploying upgraded Content Engine instances

You must deploy the upgraded Content Engine on the web application server. Deploying makes the Content Engine application available for use.

Restriction: Use the command-line version of Configuration Manager if any of these conditions is true:

- You need an accessible software version of Configuration Manager for people with disabilities to use.

  "Deploying upgraded instances by using the graphical user interface"
  You can deploy an upgraded Content Engine Server instance on a web application server by using the graphical user interface version of Configuration Manager. Deploying makes the Content Engine application available for use.

  "Deploying upgraded instances by using the command line" on page 48
  You can deploy an upgraded Content Engine instance on a web application server by using the command-line version of Configuration Manager. Deploying makes the Content Engine application available for use.

Deploying upgraded instances by using the graphical user interface

You can deploy an upgraded Content Engine Server instance on a web application server by using the graphical user interface version of Configuration Manager. Deploying makes the Content Engine application available for use.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

Make sure that the application server is running or stopped, depending on its type:

Table 7. Required Application Server State

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

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.

To deploy Content Engine:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Engine values for this task, filter by **CM: Deploy Application** in the **Installation or Configuration Program** column.
2. Log on to the application server machine as *config_mgr_user*, the Configuration Manager user.
3. Start Configuration Manager. See "Starting Configuration Manager" on page 28.
4. Select **File → Open Configuration Profile**, and use the information in your worksheet to specify the values for the parameters in the wizard screens.
5. In the Open Configuration Profile wizard, enter the path to the profile for the Content Engine instance, 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 by using the values in your worksheet.
8. Select **File → Save**.
9. Enable the task. By default, the **Deploy Application** task is disabled. When the task is disabled, the task name includes the text **(Disabled)**. To enable the task, select **Deploy Application (Disabled)** in the profile pane, and then either right-click and choose **Enable Selected Task** from the context menu, or click the **Enable the Selected Task** icon in the task toolbar.
10. Right-click the **Deploy Application** task in the left pane, and select **Run Task**.

    Running the deploy task might take a few minutes. The task execution status messages are displayed in the Console pane below the deploy application properties.
11. Return to the parent topic and complete the task.

Related concepts

Accounts for Content Engine upgrade
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Starting Configuration Manager" on page 28
You can start the graphical interface version of Configuration Manager to configure a Content Engine application instance on a web application server.

Deploying upgraded instances by using the command line

You can deploy an upgraded Content Engine instance on a web application server by using the command-line version of Configuration Manager. Deploying makes the Content Engine application available for use.

Ensure that the application server is running or stopped:

Table 8. Required Application Server State

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

See "Configuration Manager command-line reference" on page 250 for syntax details.

To deploy a Content Engine instance from the command line:

1. Log on to the application server machine as the *config_mgr_user* user, which is the Configuration Manager user.
2. If you upgraded the version of your application server, or if you moved it to a new directory or device and then redeployed Content Engine before upgrading Content Engine to version 4.5.1 from version 4.0.1 or 4.5.0, perform 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.
3. Set the current directory to *ce_install_path*`/tools/configure`, where *ce_install_path* is the path where you installed Content Engine.
4. Run the following command to apply the settings in the `deployapplication.xml` file:

   ```
   configmgr execute -task deployapplication -profile myprofile
   ```

   where the *myprofile* value can be one of the following items:

   - The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.
   - The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
   - The absolute path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

   Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.
5. Optional: Run the following command to check the completion status of the DeployApplication task.

   ```
   configmgr checkstatus -task deployapplication -profile myprofile
   ```
6. Repeat this procedure as needed to deploy any additional Content Engine instances.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Configuration Manager user interface reference" on page 234
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.

Installing storage device source files

If your upgraded IBM FileNet P8 system includes Tivoli Storage Manager or EMC Centera devices, you must install files on the Content Engine server.

"Installing Tivoli Storage Manager client and adding native API library paths (WebSphere)"
The client software and the native API library paths enable you to use Tivoli Storage Manager to access a fixed content device.

"Installing or updating EMC Centera SDK library files" on page 51
EMC Center SDK library files enable access between the IBM FileNet P8 environment and EMC Centera fixed content devices.

Installing Tivoli Storage Manager client and adding native API library paths (WebSphere)

The client software and the native API library paths enable you to use Tivoli Storage Manager to access a fixed content device.

1. "Installing Tivoli Storage Manager client"
   Install the Tivoli Storage Manager client software on each application server where Content Engine is deployed.
2. "Copying the Tivoli Storage Manager API library files to additional servers"
   If you are running a Content Engine server farm, the Tivoli Storage Manager API libraries must be on each server in the farm.
3. "Creating a shared library definition for Tivoli Storage Manager native API library files" on page 51
   The shared library definition specifies the location of the Tivoli Storage Manager JAR file.

Installing Tivoli Storage Manager client:

Install the Tivoli Storage Manager client software on each application server where Content Engine is deployed.

1. Download the Tivoli Storage Manager client software from the IBM Support site at 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.

Copying the Tivoli Storage Manager API library files to additional servers:

If you are running a Content Engine server farm, the Tivoli Storage Manager API libraries must be on each server in the farm.

Copy the entire tsm100directory 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. For example:

Option	Description
Windows	`C:\Program Files\IBM\FileNet\ ContentEngine\tsm100`

Creating a shared library definition for Tivoli Storage Manager native API library files:

The shared library definition specifies the location of the Tivoli Storage Manager JAR file.

1. Log on to the WebSphere administrative console.
2. Create a shared library definition according to the type of deployment (stand-alone or clustered), the version of WebSphere, and the operating system on which WebSphere runs, as shown in the following substeps. For the detailed procedure on creating the shared library, visit http://www.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`.

Installing or updating EMC Centera SDK library files

EMC Center SDK library files enable access between the IBM FileNet P8 environment and EMC Centera fixed content devices.

Update the EMC Centera SDK library files if Centera fixed content devices are in your existing environment or if Centera fixed content devices will be added to your IBM FileNet P8 environment.

1. "Installing EMC Centera SDK version 3.2 library files"
   EMC Center SDK library files enable access between the IBM FileNet P8 environment and EMC Centera fixed content devices.
2. "Configuring EMC Centera SDK environment variables for version 3.2" on page 52
   Specify values for the environment variables so that Content Engine can access the EMC Centera SDK library files.

Installing EMC Centera SDK version 3.2 library files:

EMC Center SDK library files enable access between the IBM FileNet P8 environment and EMC Centera fixed content devices.

1. Log on to the Content Engine Server machine as *ce_install_user*.
2. Back up or delete any existing EMC Centera SDK library files, which are located in the Default Destination Installation Location column of the following table:

Operating System	Default Destination Installation Location
Windows	`C:\Centera_SDK`

3. The Centera directory in the Content Engine software package 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 Centera directory

4. On the Content Engine Server machine, navigate within the Centera directory (at its copied location) to the install subdirectory, which contains the installer script.
5. 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.

Option	Description
Windows	install.bat C:\Centera_SDK

6. 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.

Configuring EMC Centera SDK environment variables for version 3.2:

Specify values for the environment variables so that Content Engine can access the EMC Centera SDK library files.

1. Locate the sample setup script on the Content Engine installation media. The file name of the sample setup script depends on your operating system:

Option	Description
Windows	setCenteraLibPath.bat

2. 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

Windows	From:
	`set CENTERA_LIB_PATH=C:\Centera_SDK\lib\32`
	`set PATH=%PATH%;%CENTERA_LIB_PATH%`
	
	to:
	`set CENTERA_LIB_PATH=`*`install_path`*` \lib\32`
	`set PATH=%PATH%;%CENTERA_LIB_PATH`
	
	or:
	`set CENTERA_LIB_PATH=`*`install_path`*` \lib\64`
	`set PATH=%PATH%;%CENTERA_LIB_PATH`

3. 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`

4. Stop and start the application server.

Completing Content Engine post-deployment steps

You must complete several Content Engine post-deployment steps before you can put an IBM FileNet P8 system into production.

Perform the post-deployment procedures for your application server type, and then perform the Content Engine verification procedures.

1. "Completing post-deployment steps (WebSphere Application Server)"
   If you are using IBM WebSphere Application Server federated user repositories, you must specify the primary administrative user for the web application server.
2. "Verifying the Content Engine deployment" on page 54
   You can verify that the Content Engine deployment was successful by accessing the IBM FileNet P8 System Health page.

Completing post-deployment steps (WebSphere Application Server)

If you are using IBM WebSphere Application Server federated user repositories, you must specify the primary administrative user for the web application server.

To set the administrative user

1. Log in to the WebSphere administrative console.
2. Navigate to **Security** → **Secure administration, applications, and infrastructure**, and click **Configure**.
3. If you have not already done so, specify a unique user (short name) for the **Primary administrative user name**.

   Important: This name must exist in one of the realms and must be unique.
4. Specify the **Server user identity**. You can specify **Automatically generated server identity**, or specify a user name that exists in one of the repositories. This name must exist in one of the realms and must be unique.
5. Save your changes to the master configuration.

6. If you are upgrading from version 3.5, enable administrative security and application security. The deployment of Content Engine does not enable or check these settings.

   Important: You must disable Java2 security; otherwise, Content Engine will not be able to start or process requests.
7. Restart the web application server where Content Engine is deployed, as follows:
   - For a stand-alone server, stop and start the application server.
   - For a network deployment on WebSphere Application Server Network Deployment, stop and start the application server whereContent Engine is deployed, including the Deployment Manager and all managed nodes.
   - For a cluster, stop and start the cluster.

Verifying the Content Engine deployment

You can verify that the Content Engine deployment was successful by accessing the IBM FileNet P8 System Health page.

1. Verify the state of Content Engine deployment by browsing to the IBM FileNet P8 System Health page:

   `http://server:port/P8CE/Health`

   where:

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

   port is the WSI port used by the Web application server on the machine where Content Engine is deployed.

   The following table lists an example address for your application server:

Table 9. Example FileNet P8 System Health page address

Application Server Type	Web Page Address
IBM WebSphere Application Server	`http://server:9080/P8CE/Health`

2. Verify that the FileNet P8 System Health page contains the Content Engine instance host name and port number. The FileNet P8 System Health page provides status for the items in the following table.

   Tip: At this point, red icons appear on the page at the left of those entries that do not yet exist. In particular, if you are upgrading from version 3.5.2, a red icon appears before the GCD, directory configurations, object stores, storage areas, and sites entries. Also, if you are upgrading from version 3.5.2, no domain name appears yet in the Domain entry.

Table 10. FileNet P8 System Health page contents

Section	Description
Domain	Displays the FileNet P8 domain name if a domain was found.
Global Configuration Database	Verifies that the GCD contains a valid domain object, that the XA and non-XA data sources are defined and have unique names, and that the bootstrap user name and password are defined. If any of these verification tests fail, then the failed icon is displayed.
Directory Configurations	Verifies that at least one directory service is configured and lists the number of configured directory service providers.
PE Connection Points	Displays the number of Process Engine connection points.

Table 10. FileNet P8 System Health page contents (continued)

Section	Description
PE Isolated Regions	Displays the number of Process Engine isolated regions.
Fixed Content Devices	Lists the number of fixed content devices (FCDs) For each FCD listed, there is at least one associated fixed storage area that is in the open state.
Object Stores	Verifies that at least one object store exists and lists the number of object stores.
Storage Areas	Verifies that at least one storage area is defined, lists the number of storage areas, and the status for each storage area, such as online or offline.
Content Cache Areas	Displays the number of content cache areas.
Sites	Verifies that at least one site is defined and lists the number of sites. For each site listed, at least one virtual server or server instance exists.

3. Optional: Bookmark the FileNet P8 System Health page Web page address in your browser for later use.
4. Browse to the FileNet Engine Web page:

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

   where:

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

   port is the HTTP port used by the application server where Content Engine is deployed.

   The following table lists an example address for your application server:

Table 11. Example FileNet Engine Web page address

Application Server Type	Web Page Address
IBM WebSphere Application Server	http://myserver:9080/FileNet/Engine

5. Verify that the FileNet Engine Web page contains the following information:
   - Verify the value in the **Startup Message** key. The Content Engine build and version (for example, dap451.097), must match the build and version in the *ce_install_path*`/ce_version.txt` file, where *ce_install_path* is the location where the Content Engine software is installed.
   - Verify the value in the **Process Engine** key. The Process Engine Client build and version (for example, pui451.075), must match the build and version in the `version.txt` file in the TAR or ZIP file of the Process Engine Client installation software.
   - Verify that the values for JDBC driver, server instance, operating system, and other properties match the values that you entered when you configured Content Engine.
6. Optional: Bookmark the FileNet Engine Web page in your browser for later use.

Installing the latest Content Engine client files on other IBM FileNet P8 servers (for staged upgrades)

When you upgrade Content Engine 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:

- "Upgrading the Content Engine client files on Process Engine servers" on page 156
- "Installing the latest Content Engine client files on Application Engine servers" on page 179

Important:

- You must install the Content Engine client files for any expansion products that use Content Engine Client files, such as:
  - IBM FileNet Workplace XT
  - IBM InfoSphere Enterprise Records
  - IBM FileNet Business Process Framework
- You must redeploy any components that are web-application-server-based, such as Application Engine, Workplace XT, and InfoSphere Enterprise Records, after you upgrade the Content Engine Client files on the associated machines.

Establishing the FileNet P8 domain and Global Configuration Data

You must use IBM FileNet Enterprise Manager to create a FileNet P8 domain and the Global Configuration Data (GCD).

Complete the procedures for the FileNet P8 domain and the Global Configuration Data (GCD).

1. "Creating the FileNet P8 domain"
   You use IBM FileNet Enterprise Manager to create the FileNet P8 domain.
2. "Configuring directory service authentication" on page 57
   You must configure the directory service authentication for the domain. To set up multi-realm authorization, you must run the Create a Directory Configuration wizard one time for each realm.
3. "Configuring permissions for a FileNet P8 domain" on page 58
   You must configure the permissions for the FileNet P8 domain. To complete this configuration, you add your authorized users and groups to the list of Global Configuration Data (GCD) administrators.
4. "Verifying the trace log file location" on page 58
   You must verify that trace log file location after you deploy Content Engine.

Creating the FileNet P8 domain

You use IBM FileNet Enterprise Manager to create the FileNet P8 domain.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

Important: 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.

To create a FileNet P8 domain:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values for this task, filter by **EM: Create FileNet P8 domain** in the **Installation or Configuration Program** column.
2. Start Enterprise Manager by double-clicking the **Enterprise Manager** icon on the desktop, or by choosing **Start** → **All Programs** → **FileNet P8 Platform** → **Enterprise Manager**.
3. Click **Add** and complete the configuration screens by using the values in your worksheet. The initial values displayed in the screens are default values that you must change to match your site.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Configuring directory service authentication

You must configure the directory service authentication for the domain. To set up multi-realm authorization, you must run the Create a Directory Configuration wizard one time for each realm.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

See these FileNet P8 help topics for additional information:

- **System Administration** → **Enterprise-wide Administration** → **FileNet P8 Security** → **How to** → **Configure for multiple realms**
- **System Administration** → **Enterprise-wide Administration** → **FileNet P8 Security** → **Directory service providers**.

To configure directory service authentication:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values for this task, filter by **EM: Create a Directory Configuration** in the **Installation or Configuration Program** column.
2. In the FileNet P8 dialog box, click **Connect**.
3. 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
IBM WebSphere Application Server	*WAS_install_path*/AppServer/profiles/*profile_name*/logs/server_name/SystemOut.log

4. Complete the configuration screens by using the values in your worksheet.
5. 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 using Enterprise Manager for the first time and have not defined any Global Configuration Data (GCD) administrators.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Configuring permissions for a FileNet P8 domain

You must configure the permissions for the FileNet P8 domain. To complete this configuration, you add your authorized users and groups to the list of Global Configuration Data (GCD) administrators.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To configure permissions for a a FileNet P8 domain:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values, filter by **EM: Configure New Domain Permissions** in the **Installation or Configuration Program** column.
2. Complete the configuration screens by using the values in your worksheet.
3. In the Configure New Domain Permissions message box, click **OK**.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Verifying the trace log file location

You must verify that trace log file location after you deploy Content Engine.

Perform the following steps to check the path to the trace log file, `p8_server_trace.log`.

1. Start IBM FileNet Enterprise Manager by double-clicking the **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.
4. If the current value of the **Log File Output Location** parameter is not consistent with the version of the application server, then 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
IBM WebSphere Application Server	*install_root* /profiles/*profile_name*/ FileNet/*server_name*/ p8_server_trace.log

5. Click **OK**.

Configuring storage devices for upgrades

When you upgrade from Content Engine version 3.5.2, you must configure your existing file store devices.

Complete the procedure for the devices in your environment.

"Configuring storage devices for migration to UNIX"
When you upgrade from Content Engine version 3.5.2 and migrate to a UNIX server, you must prepare the UNIX server to mount your existing file store devices.

"Preparing NetApp SnapLock volumes for upgrade"
If your existing IBM FileNet P8 domain includes a SnapLock fixed content device, you must allow access to your fixed content via NFS instead of, or in addition to, CIFS.

Configuring storage devices for migration to UNIX

When you upgrade from Content Engine version 3.5.2 and migrate to a UNIX server, you must prepare the UNIX server to mount your existing file store devices.

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 3.5.2 file store devices.

- If you are migrating your Content Engine version 3.5.2 file storage devices to UNIX, you must copy your existing storage directories and files to the UNIX machine and ensure that the *ce_os_user* account has permissions for the new directories and folders.
- If the version 3.5.2 file storage areas remain on the Windows NTFS devices, or if you intend to use the Content Engine Upgrader tool rather than Content Engine Web Upgrade Tool to upgrade your object stores (regardless of whether you leave the storage directories on NTFS or the UNIX file system), create an NFS mount from the Content Engine version 4.5.1 server to the NTFS mount.

Related tasks

"Installing or upgrading Content Engine" on page 19
You can install or upgrade Content Engine, Configuration Manager, .NET Clients (including IBM FileNet Enterprise Manager), Content Engine Upgrader, and FileNet Deployment Manager either interactively or silently.

Preparing NetApp SnapLock volumes for upgrade

If your existing IBM FileNet P8 domain includes a SnapLock fixed content device, you must 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 4.5.1 of IBM FileNet P8.

      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.

   Because all pre-4.0.0 versions of IBM FileNet P8 support only CIFS, all NetApp storage volumes used by Content Engine version 3.5.2 use NTFS security style. You must change the security style 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* to UNIX:

```
 telnet NAFiler
qtree security /vol/vol1/sa1 unix
```

      After the qtree command executes, all files created by Content Engine on a UNIX platform will have UNIX security attributes.

3. Map UNIX users and groups to Window equivalents.

   Because Content Engine version 3.5.2 support CIFS, rather than NFS, all existing files on a NetApp volume have NTFS security attributes. The users and groups with access rights to these files are defined by Windows.

   To allow the version 3.5.2 files to remain accessible, you must create a mapping between the new UNIX account for version 4.5.1 of Content Engine and the old Windows account for version 3.5.2.

   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
IP_qualifier	Qualifies the name according to the source address of the requester

Element	Meaning
Windows_name	The name of the Window user or group in domain name format (for example, *DomainName**UserName*). The Windows name must be in the Windows domain that the NetApp filer is configured to use when authenticating Windows users.
UNIX_name	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 `/etc/passwd` (for users) or `/etc/group` (for groups). If it is a group, it might be necessary to also define it in an NIS repository or an LDAP directory server, depending on how the filer is configured. 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.
Direction	The direction of the mapping, either <= or =>. <=: Maps *UNIX_name* to *Windows_name* =>: Maps *Windows_name* to *UNIX_name*

For example, the following steps define a mapping on a NetApp filer between FNCE_OS_User (the Windows user account under which version 3.5.2. *x* of Content Engine Server executes) and FNCE_UNIX_User (the UNIX user account under which version 4.5.1 of Content Engine Server executes).

a. Log on to the machine where version 3.5.2 of the Content Engine is installed.

b. Connect to the root volume on the target NetApp filer by 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:
   ```

4. Return to the parent topic and complete the task.

Related information

Product documentation for IBM FileNet P8 Platform
Download the IBM FIleNet P8 Hardware and Software Requirements, as well as PDF's of the rest of the IBM FileNet P8 Platform documentation.

Creating the data sources for an object store

Each object store in your site requires its own JDBC data sources. You can configure the data sources by using the Configuration Manager graphical user interface or the command line.

You created the JDBC data source for the Global Configuration Data (GCD) earlier in the configuration process. You must add the data sources now for at least one object store that you want to upgrade. You can create additional object store data sources as needed either immediately after you create the initial object store data sources or after you have confirmed your Content Engine configuration.

Restriction: Configuration Manager cannot create a data source that uses the same name as an existing data source. If you manually configured a data source by using your web application server administration tools, and you want to reuse the name, then you must manually delete the existing data source before you attempt to create the data source in Configuration Manager. See your web application server documentation for more information.

"Creating the initial object store data sources by using the graphical user interface"
You must create the JDBC data sources for each object store that Content Engine uses. Content Engine uses the data source information to connect to and update the object store database. By default, each profile includes a task for creating the data sources for a single object store.

"Creating additional object store data sources by using the graphical user interface" on page 63
You must create the JDBC data sources for each object store that Content Engine uses. Content Engine uses the data source information to connect to and update the object store database. By default, each profile includes a task for creating the data sources for a single object store, and you can add additional tasks as needed for each additional object store.

"Creating the data sources by using the command line" on page 64
You must create the JDBC data sources for each object store that Content Engine uses. You must generate, edit, and execute a new `configurejdbc-os.xml` file for each object store in your environment.

Creating the initial object store data sources by using the graphical user interface

You must create the JDBC data sources for each object store that Content Engine uses. Content Engine uses the data source information to connect to and update the object store database. By default, each profile includes a task for creating the data sources for a single object store.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values for this task, filter by

CM: Configure Object Store JDBC Data Sources (object store 1) in the **Installation or Configuration Program** column.

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

Table 12. Required application server state

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

3. If your configuration profile is not open in Configuration Manager, open it by selecting **File → Open** and navigating to your *profilename*.cfgp file.
4. Right-click **Configure Object Store JDBC Data Sources** in the profile pane, and select **Edit Selected Task**.
5. Enter the property values for your data sources by using the values in your installation worksheet.
6. Select **File → Save** to save your changes.
7. Optional: WebSphere and WebLogic only. Click **Test Database Connection** to test the connection to the database by using the database user name, database server name, database name, port number, and password that you provided. The test does not create the data sources.
8. Ensure that the task is enabled. When the task is disabled, the task name includes the text **(disabled)**. To enable the task, right-click **Configure Object Store JDBC Data Sources (disabled)** in the profile pane, and choose **Enable Selected Task** from the context menu.
9. Apply the JDBC property settings by right-clicking **Configure Object Store JDBC Data Sources** in the profile pane, and selecting **Run Task**. Running the configuration task can take several minutes. The task execution status messages are displayed in the Console pane below the bootstrap properties.

Creating additional object store data sources by using the graphical user interface

You must create the JDBC data sources for each object store that Content Engine uses. Content Engine uses the data source information to connect to and update the object store database. By default, each profile includes a task for creating the data sources for a single object store, and you can add additional tasks as needed for each additional object store.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

The default configuration profile contains one task for configuring a single object store. You must create and run a new task for each additional object store in that Content Engine uses.

To configure the JDBC settings for additional object stores:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Engine values, filter by **CM: Configure JDBC data sources (object store 2)** in the **Installation or Configuration Program** column.
2. Start or stop the application server, depending on its type.

Table 13. Required application server state

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

3. If your configuration profile is not open in Configuration Manager, open it by select **File** → **Open** and navigating to your *profilename*.cfgp file.
4. Create a task for the additional object store.
   a. Right-click any ***task name*** in the profile pane, such as **Configure Object Store JDBC Data Sources**, and select **Add New Task** → **Configure JDBC Data Sources**. The **New_Configure JDBC Data Sources** task is added to the profile.
   b. Right-click **New_Configure JDBC Data Sources**, and select **Rename Task**.
   c. Enter a useful name for the task, such as **Configure Object Store 2 JDBC Data Sources**.
   d. Click **OK**.
5. Right-click the **Configure Object Store 2 JDBC Data Sources** task in the profile pane, and select **Edit Selected Task**.
6. Provide the property values for the JDBC data sources for the object store by using the values in your worksheet for your additional object store.
7. Select **File** → **Save** to save your changes.
8. Optional: WebSphere and WebLogic only. Click **Test Database Connection** to test the connection to the database by using the database user name, database server name, database name, port number, and password that you provided. The test does not create the data sources.
9. Ensure that the task is enabled. When the task is disabled, the task name includes the text **(disabled)**. To enable the task, right-click **Configure Object Store 2 JDBC Data Sources (disabled)** in the profile pane, and choose **Enable Selected Task** from the context menu.
10. Apply the JDBC property settings by right-clicking **Configure Object Store 2 JDBC Data Sources** 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.
11. Optional: Repeat this procedure as needed to add the data sources for each object store in your environment.

Creating the data sources by using the command line

You must create the JDBC data sources for each object store that Content Engine uses. You must generate, edit, and execute a new `configurejdbc-os.xml` file for each object store in your environment.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

If you generated all of the configuration profiles at the same time, you have already created an initial `configurejdbc-os.xml` file for the initial object store data sources. If you have an existing `configurejdbc-os.xml` file, you can generate another file for each additional object store. Each additional file that you add is named `configurejdbc-os.n.xml`. You can generate multiple `configurejdbc-os.n.xml` files as needed, depending on the number of object stores in your environment. For best results, create an additional file for each object store.

1. Open your completed Installation and Upgrade Worksheet file.

Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values for this task, filter by **CM: Configure Object Store JDBC Data sources (object store 1)** in the **Installation or Configuration Program** column.

2. Log on to the application server as *config_mgr_user*, the user who runs Configuration Manager.
3. If you did not generate all the configuration files at the same time or if you must create another file, generate the `configurejdbc-os.n.xml` file by running the following command:

   ```
   configmgr_cl  generateConfig -appserver  app_server_type -db  db_type
    -task configurejdbcos -profile myprofile
   ```

   where:

   -appserver *appserver_name*
   The **-appserver** *appserver_type* specifies the type of application server and must be WebSphere, WebLogic, or JBoss.

   -db *database_type*
   The **-db** *database_type* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `configurejdbcgcd` or `configurejdbcos` option. This parameter specifies the type of database to be used by Content Engine and must be `mssql`, `oracle`, `oracle_rac`, `db2`, or `db2zos`.

   -profile *myprofile*
   The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

   - The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.
   - The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
   - The absolute path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

   Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.
4. Use a text editor to open the `configurejdbc-os.n.xml` file and edit it as follows:
   a. Provide the entries that are required for your environment by using the values in your worksheet.
   b. Replace each occurrence of `****INSERT VALUE****` with a value appropriate for your site. See 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 **enabled** attribute value in the **<configuration>** tag to `true` so that you can run the configuration task in 6 on page 66.

e. Save your edits.

5. Run the **storepasswords** command to encrypt and store the required passwords.

   ```
   configmgr_cl storepasswords -profile myprofile
   ```

6. Run the following command to execute the `configurejdbc.n.xml` file:

   ```
   configmgr_cl execute -task ConfigureJDBC -profile myprofile
   ```

7. Optional: Check the completion status by running the following command:

   ```
   configmgr_cl checkStatus -task configurejdbcos -task configurejdbc.n.xml
    -profile myprofile
   ```

   Where `configurejdbc.n.xml` is the task file for the object store.

8. Repeat 3 on page 65 through 6 as needed for each additional object store.

Upgrading Content Search Engine software from version 3.5.2

If you used the full-text search feature (CBR) in version 3.5.2, you upgrade by installing and configuring version 4.5.1 of Content Search Engine (Autonomy K2). After the upgrade, you recreate index areas, called *K2 collections*, to replace the version 3.5.2 content search indexes.

Important: If version 4.5.1 of Content Search Engine is already part of your existing version 4.5.1 Content Engine system, omit the tasks in this section.

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 3.5.2 to 4.5.1, you can install and configure the Autonomy K2 product before or after you upgrade Content Engine. After upgrading Content Search Engine, you create new index areas, and specify classes and property templates for those classes (if so desired). Then you run a classes index job, which is part of the upgrade of Content Engine.

1. "Production environment upgrades" on page 67
   Upgrade of Content Search Engine and related Content Engine data must occur as an in-place upgrade. As such, the data is migrated to version 4.5.1 and is no longer usable in the previous version of IBM FileNet P8.
2. "Content Search Engine software upgrade" on page 67
   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.
3. "Upgrading Content Search Engine (Windows)" on page 68
   Install and configure IBM FileNet P8 Content Search Engine,
4. "Updating the style file of user fields" on page 70
   You need to edit the Autonomy K2 style file of user fields to add a data field definition for storing the partitioning value of a document.
5. "Configuring Content Search Engine" on page 70
   You can configure services required on the K2 Master Administration Server, and on additional Administration Servers you might install for IBM FileNet P8 Content Search Engine. All servers are configured through the Master Administration Server Dashboard.
6. "Configuring Autonomy K2 for version 4.5.1 index areas" on page 75
   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.

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 version 4.5.1 and is no longer usable in the previous version of IBM FileNet P8.

To perform an upgrade in a migration scenario, create a duplicate of your FileNet P8 system by performing a backup and then a restore. Using the restored system, complete the migration from version 3.5.2 to 4.5.1. 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 stand-alone 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.

Important: 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).

- 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 to 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, 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 place the `style.stp` file into the `stylefiles` directory to list words you do not want full-text indexed, for example, short words such as a, the, or and. However, any word in the stop word file cannot be searched. See the K2 documentation for more details. To create a stop word file you can typically copy the `vdk30.stp` file from either the main K2 install directory or the foreign language locales package over to the main `stylefile` directory, and then rename the file `style.stp`. You must do this copy operation before you create collections.

  Because indexing is case sensitive, the `style.stp` file should include lower-case and upper-case versions of words in the stop word list. For example, use "the", "The" and "THE" if you think that all of these might be encountered in a search.

Upgrading Content Search Engine (Windows)

Install and configure IBM FileNet P8 Content Search Engine,

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

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 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.

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

To install Autonomy K2:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Search Engine values, filter by **CSE Installer** in the **Installation or Configuration Program** column.
2. Access the host machine and log on as *k2_os_user*.

   Important: Ensure *k2_os_user* has administrator privileges on this machine.
3. Set the JAVA_HOME environment variable as follows:
   a. Open the Windows Control Panel.
   b. Choose **System**.
   c. Click the **Advanced** tab.
   d. Click **Environment Variables**.
   e. Click **New** under System Variables.
   f. Set the variable information as follows:
      Variable name: *JAVA_HOME*
      Variable value: *Java (JDK) install path*

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

4. Access the IBM FileNet Content Search Engine installation package.
5. Start the Content Search Engine installation, choosing either the interactive or silent method.

   "Upgrading Content Search Engine interactively (Windows)"
   To upgrade Content Search Engine interactively, you must run an installation program wizard.

   "Upgrading Content Search Engine silently (Windows)"
   When you upgrade Content Search Engine silently, you run a command in the Content Search Engine software package that references parameters in an installation text file.

Related concepts

Content Search Engine accounts
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Content Search Engine interactively (Windows):

To upgrade Content Search Engine interactively, you must run an installation program wizard.

To upgrade Content Search Engine interactively:

1. Run the `P8CSE-4.5.1.0-WIN.EXE` file.
2. Complete the installation screens using the values from your worksheet.
3. 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_1.txt`
   - *cse_install_path*`\verity\vconfig.log`
4. Verify that the following Autonomy K2 services are installed and running on your Content Search Engine machine after the installation is complete:
   - Verity K2 6.2.1 Administration Server service
   - Verity K2 Administration Web Server service (Tomcat server)

Upgrading Content Search Engine silently (Windows):

When you upgrade Content Search Engine silently, you run a command in the Content Search Engine software package that references parameters in an installation text file.

To upgrade Content Search Engine silently:

1. Run the `P8CSE-4.5.1.0-WIN.EXE` file.
2. Complete the installation screens using the values from your worksheet.
3. 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_1.txt`
   - *cse_install_path* `\verity\vconfig.log`

4. Verify that the following Autonomy K2 services are installed and running on your Content Search Engine machine after the installation is complete:
   - Verity K2 6.2.1 Administration Server service
   - Verity K2 Administration Web Server service (Tomcat server)

Updating the style file of user fields

You need to edit the Autonomy K2 style file of user fields to add a data field definition for storing the partitioning value of a document.

To edit the style file:

1. Navigate to the directory in the Content Search Engine software that contains the `style.ufl` file:

   Windows

   verity_install_path`\data\stylesets\FileNet_FileSystem_PushAPI`
2. Open the Autonomy K2 style file of user fields, `style.ufl`, for editing.
3. If it is not already present, add the CEMP definition at the bottom of the file:

```
data-table: fce
{
fixwidth: cemp_partition_date 4 unsigned-integer
}
```

4. Save your edits and close the file.

Configuring Content Search Engine

You can configure services required on the K2 Master Administration Server, and on additional Administration Servers you might install for IBM FileNet P8 Content Search Engine. All servers are configured through the Master Administration Server Dashboard.

- When you name the servers that you create, it is a best practice to indicate the type of server in the server name. Otherwise, when you configure Content Engine by using Enterprise Manager, it can be difficult to determine which server to select for an action. 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.
  - 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.
- In the following procedure, import the IBM FileNet Styleset only once, regardless how many K2 Administration Server machines you install.

To configure Content Search Engine:

1. (Optional) 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
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: *server_name* _index_server
      - 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: *server_name* _broker
      - 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: *server_name* _search_server
      - 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

        verity_install_path\data\stylesets\FileNet_FileSystem_PushAPI
   e. Click **Import**.

   Tip: 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 Content Search Engine.

8. Navigate to the source path you specified in the preceding step and complete the following substeps:
   a. Open the file `style.ufl` for editing.
   b. If it is not already present, add the CEMP definition at the bottom of the file:

```
data-table: fce
{
fixwidth: cemp_partition_date 4 unsigned-integer
}
```

   c. Save and close the file.

9. 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: *server_name* _ticket_server
      - 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:
        - Windows
        - UNIX

Restriction: LDAP Ticket Servers are not currently supported.

- Default Domain (Windows only): Enter the domain on which this K2 Server is authenticated. If the server is in a workgroup, leave this field blank.

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:

1) Click **Edit Properties**.

2) Click Windows Login Module.

3) Select the **Use Local Credentials** check box.

4) Clear the **Enable Built-in Groups** check box.

5) Click **Modify**.

10. 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*.
- Password: Enter the authentication password.
- Default Domain (Windows only): Enter the domain on which this user and K2 Server are authenticated. If the server is in a workgroup, leave this field blank.

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.

11. Launch the K2 Dashboard and log on.

12. 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 choose **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.

13. 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**.

14. 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 **K2 Servers** 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.

       Important: If you have a multiserver 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 **K2 Brokers** 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.
15. 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 choose **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.

1. "Configuring 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.

Related concepts

Content Search Engine accounts
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Configuring 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.

Configuring Autonomy K2 for version 4.5.1 index areas

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 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**.

1. "Collections directory requirements for Content Search Engine"
   The task of creating a collections directory includes setting up security permissions to allow read and write access.
2. "Windows-specific options" on page 76
   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.
3. "Completing the upgrade" on page 77
   Completing the upgrade of Content Search Engine is part of the process for upgrading Content Engine.

Related concepts

Content Search Engine accounts
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Installation and Upgrade Worksheet
For more information about parameter values, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Collections directory requirements for Content Search Engine:

The task of creating a collections directory includes setting up security permissions to allow read and write access.

Important: 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 using the network (NFS, PCNFS, or CIFS) causes stability problems under load and corrupt your collections. Any existing configurations that contain non-local collections directories must be reconfigured.

To create a collections directory:

1. Create a directory in which to 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*.

   This path must be local to the index server that is assigned to write collections.
2. Create a temp directory (VerityIndexArea.TempDirectoryPath) which is used by the K2 Index Server and Content Engine Server during operations.

   Content Engine and the Autonomy K2 servers, the K2 Administration Server and Content Engine must be on the same machine or 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.

Option	Description

Windows	1. Open the following K2 configuration file in a text editor (default path shown): *verity_install_path*\k2\common\verity.cfg
	2. Modify the next available alias settings by adding the collections path, where new collections are written. For example, change alias6, mapping6, and dirmode6 to the following settings:
	`alias6=path1`
	`mapping6=C:\`*`Collections_Directory`*
	`dirmode6=wr`

4. Set file store access. Each file store that is full text indexed must be accessible by the Autonomy K2 server that performs the full text indexing. Permissions on the file store must be set the same as the permissions on the collections directories. Having the same permissions allows 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.

   Although we are mapping remote collections, which are not supported, indexing is not 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, run 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
```

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

Another solution is to use a tool like the `srvany.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
```

Independent software vendor products are 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

Completing the upgrade:

Completing the upgrade of Content Search Engine is part of the process for upgrading Content Engine.

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.

Updating the CFS-IS settings

If Content Federation Services for FileNet Image Services (CFS-IS) is in your version 3.5.2 system, then you must enable the FileNet Image Services dispatcher. You must also modify the default map between CFS-IS and the object stores in the FileNet P8 domain.

To update the CFS-IS settings:

1. Start Enterprise Manager if it is not already running.
2. Right-click the Enterprise Manager root node in the navigation tree (left pane), and se;ect **Properties**.
3. Click the **IS Import Agent** tab, select the **Enable Dispatcher** check box, and then click **OK**.
4. Start the FileNet Image Services Remote Admin Console by selecting **Start** → **Programs** → **FileNet P8 Platform** → **IS Remote Admin Console**.
5. For each object store that participates in CFS-IS federation, complete the following substeps:
   a. Select **Applications** → **IS Catalog Export Tool**. The Default Mappings window displays the FileNet Image Services document class that is mapped to a FileNet P8 domain/object store combination.
   b. Select the ***document class name*** and click **Remove**, and then click **OK**.
   c. Modify the f_ce_domain_guid and f_ce_domain_name columns in the ce_id_map table on the IS database to match the new Content Engine version 4.5.1 domain GUID and domain name. For example:

      ```
      UPDATE ce_id_map SET f_ce_domain_guid = 'new_domain_guid' ,
      f_ce_domain_name = 'new_domain_name'
      where f_ce_os_name = 'object_store_name';
      ```

      Use Enterprise Manager to determine the *new_domain_guid* and *new_domain_name* values. Right-click the ***P8 Domain node***, and select **Properties**. The ID property is the domain GUID.
6. Restart FileNet Image Services:
   - To restart FileNet Image Services by using the graphical user interface, start FileNet FileNet Image Services Task Manager and click **Restart**.
   - To restart FileNet Image Services from a command line, run the following commands:

     ```
     initfnsw -y stop
     killfnsw -DyAS
     initfnsw start
     ```
7. For each object store that participates in CFS-IS federation, configure the FileNet Image Services documentation class for export to Content Engine.
   a. On the main Remote Admin Console screen, select **Applications** → **IS Catalog Export Tool**.
   b. From the **CE Configured IS Doc Classes** menu, select the IS document class whose index properties you want to export to Content Engine.
   c. From the Available CE Object Store Mappings pane, select the Content Engine domain and object store that you want to export to Content Engine.
   d. Click **Set Default Map**.
8. Stop and start Content Engine.
9. Verify your property mappings.
   a. Start Enterprise Manager if it is not already running.
   b. Right-click the ***object store node*** in the navigation tree (left pane), and select **Properties**.

c. Click the **Content Federation** tab.
d. Select your ***class mapping name*** and click **Add/Edit**.
e. Select **Current Class Mappings**, and click **Map Properties**.
f. Verify your property mappings.
g. Click **OK**.
h. Close Enterprise Manager.

Upgrading Content Engine data

You must upgrade your current Content Engine data (GCD, addons, fixed content devices, object stores, and related information).

There are two tools available to you for upgrading Content Engine data: the IBM FileNet Content Engine Upgrader tool and IBM FileNet Content Engine Upgrader Web Tool. The Content Engine Upgrader tool has both a graphical user interface (GUI) and a command-line interface (CLI). Content Engine Web Upgrade Tool has only a graphical user interface. Choose a tool for upgrading Content Engine data based upon the criteria in the following table:

Interface to be used	Current state of the object stores	Upgrade tool to use
GUI	All object stores are at version 3.5.2.	Content Engine Web Upgrade Tool or Content Engine Upgrader tool
GUI	Some object stores at version 4.5.1 were upgraded using Content Engine Upgrader tool; other object stores in the same domain are still at version 3.5.2.	Content Engine Upgrader tool
GUI	Some object stores at version 4.5.1 were upgraded using Content Engine Web Upgrade Tool; other object stores in the same domain are still at version 3.5.2	Content Engine Web Upgrade Tool
CLI	Not applicable	Content Engine Upgrader tool

Whichever tool you use, keep in mind the following guidelines as you prepare to upgrade the Content Engine data:

- It is not necessary to check in checked-out documents before running either upgrade tool.
- If the maximum heap size of the JVM is 1 GB or more, do not run an upgrade tool on the same machine where any other major application (such as a database) is running unless the machine has at least 2 GB of RAM.
- If you use Content Engine Web Upgrade Tool to upgrade your Content Engine data, you must deploy it on the same Java Virtual Machine where version 4.5.1 of Content Engine is deployed.
- If you are upgrading an IBM FileNet P8 environment with many object stores, use the following approach:
  - Upgrade fewer than 20 object stores at a time.

  - For best performance when Content Engine is deployed on a web application server with a 32-bit JVM, restrict each version 4.5.1 FileNet P8 domain to 50 or fewer object stores. If the version 3.5.2 FileNet P8 domains contain more than 50 object stores, consider partitioning them into multiple 4.5.1 FileNet P8 domains during the upgrade process.
  - Ensure that the version 3.5.2 object stores with the same basic set of system objects (for file stores, fixed file stores, and related objects) are upgraded into the same 4.5.1 FileNet P8 domain.
- The time to upgrade object stores from version 3.5.2 depends on the number of documents the object store contains, the database type, and the resources of the machine on which the database system runs. If you are upgrading version 3.5.2 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, see *IBM FileNet P8 Non-English Support Guide*.

1. "Upgrading Content Engine data using Content Engine Web Upgrade Tool"
   Use Content Engine Web Upgrade Tool to validate and upgrade your version 3.5.2 FileNet P8 domain and object stores.
2. "Upgrading Content Engine data using Content Engine Upgrader tool" on page 91
   Use Content Engine Upgrader tool to upgrade your version 3.5.2 FileNet P8 domain and object stores if you cannot use Content Engine Web Upgrade Tool.

Related information

Product documentation for IBM FileNet P8 Platform
Download the IBM FIleNet P8 Non-English Support Guide, as well as PDF's of the rest of the IBM FileNet P8 Platform documentation.

Upgrading Content Engine data using Content Engine Web Upgrade Tool

Use Content Engine Web Upgrade Tool to validate and upgrade your version 3.5.2 FileNet P8 domain and object stores.

Content Engine Web Upgrade Tool runs on the machine where Content Engine is deployed. You run the tool in two phases: validation and then upgrade.

The validation phase determines whether your object stores and related data are ready for upgrade. You can select all the object stores for validation in one step, or you can select subsets of them for validation in several steps. During the first validation step, even if you have not selected any object stores, Content Engine Web Upgrade Tool validates (by default) the GCD, domain addons, and fixed content devices. During a validation step Content Engine Web Upgrade Tool does not stop at errors; it proceeds until it has validated all the selected object stores. If an object store fails validation, you must edit its associated data and then run the validation again until it succeeds.

The upgrade phase upgrades the successfully validated object stores. You can select all the object stores for upgrading in one step, or you can select subsets of them for upgrading in several steps. The first time you run the upgrade step, even if you have not selected any object stores, Content Engine Web Upgrade Tool upgrades (by default) the GCD, domain addons, and fixed content devices. During an upgrade step Content Engine Web Upgrade Tool stops at the first error. If an object store upgrade fails, you must edit its associated data and then upgrade it again until it succeeds.

"Deploying Content Engine Web Upgrade Tool"
You need to deploy Content Engine Web Upgrade Tool before you can upgrade your Content Engine data.

"Backing up the version 4.5.1 GCD database" on page 83
You need to back up your version 4.5.1 GCD database before you start upgrading Content Engine data so that in case the upgrade fails, you can recover your original system environment.

"Starting Content Engine Web Upgrade Tool" on page 83
To use Content Engine Web Upgrade Tool, you browse to the machine where the tool is running.

"Upgrading a version 3.5.2 FileNet P8 domain into a new version 4.5.1 FileNet P8 domain" on page 84
You have a new version 4.5.1 FileNet P8 domain and are upgrading version 3.5.2 object stores into it.

"Upgrading a version 3.5.2 FileNet P8 domain into an existing version 4.5.1 FileNet P8 domain" on page 87
You have an existing version 4.5.1 FileNet P8 domain (which already contains object stores) and are upgrading version 3.5.2 object stores into it.

Deploying Content Engine Web Upgrade Tool:

You need to deploy Content Engine Web Upgrade Tool before you can upgrade your Content Engine data.

You must deploy Content Engine Web Upgrade Tool on the application server where you installed version 4.5.1 of the Content Engine software. Content Engine Web Upgrade Tool is available as of version 4.5.1 FP2 of Content Engine.

"Deploying Content Engine Web Upgrade Tool (WebSphere Application Server)"
You need to deploy IBM FileNet Content Engine Web Upgrade Tool on the application server where version 4.5.1 of Content Engine is deployed.

Deploying Content Engine Web Upgrade Tool (WebSphere Application Server):

You need to deploy IBM FileNet Content Engine Web Upgrade Tool on the application server where version 4.5.1 of Content Engine is deployed.

If Content Engine is deployed on a managed node, you must deploy Content Engine Web Upgrade Tool on the that node. If Content Engine is deployed in a cluster, you must deploy Content Engine Web Upgrade Tool in that cluster.

To deploy IBM FileNet Content Engine Web Upgrade Tool on WebSphere Application Server:

1. Log in as *ce_install_user* to the application server machine where you installed version 4.5.1 FP2 or later of the Content Engine software.
2. If you are going to upgrade a large object store or a large number of object stores, it is a best practice to deploy Content Engine Web Upgrade Tool to a Java Virtual Machine that has a heap size of at least 512 MB. If the heap size is less than 512 MB, increase the size as needed.
3. Navigate to the directory that contains the `upgrader.war` file, depending on the operating system where Content Engine is installed:

Option	Description
Windows	`C:\Program Files\IBM\FileNet\ ContentEngine\lib`

4. In the WebSphere Application Server administrative console, navigate to **Applications → Enterprise Applications** and click **Install**.
5. (WebSphere 6.1) Specify the path to the `upgrader.war` file, set the context root to `/upgrader`, and complete the following substeps:
   a. In the step to select installation options, set the application name to `upgrader`.
   b. If your deployment environment is WebSphere Application Server Network Deployment, select the node or cluster where Content Engine is deployed; otherwise, skip past the step to map modules to servers and the step to map virtual hosts to Web modules.
   c. Skip to the summary. Click **Finish**, and then click **Save**.
6. (WebSphere 7.0) In the Install New Application page, specify the path to the `upgrader.war` file, click **Next**, and then click **OK** to confirm the path. Then complete the following substeps:
   a. In the step to select installation options, set the application name to `upgrader`.
   b. If your deployment environment is WebSphere Application Server Network Deployment, select the node or cluster where Content Engine is deployed; otherwise, skip past the step to map modules to servers and the step to map virtual hosts to Web modules.
   c. In the step to map context roots for Web modules, set the context root to `/upgrader`.
   d. Skip to the summary. Click **Finish**, and then click **Save**.
7. Ensure that the class loader policy is set to Multiple by completing the following substeps on each server where you are deploying the `upgrader.war` file:
   a. In the WebSphere Application Server administrative console, navigate to **Servers → WebSphere application servers** and click the name of the server where you just deployed the `upgrader.war` file.
   b. Click the **Configuration** tab and under Server-specific Application Settings set the Classloader policy to Multiple.
8. Synchronize nodes if needed.
9. If your deployment environment is WebSphere Application Server Network Deployment, complete the following substeps:
   a. Open for editing the deployed version of the `config.properties` file. You can this file at one of the following locations.

Operating system	Path to config.properties file
UNIX	`/opt/IBM/WebSphere/AppServer/profiles/ profile_name/installedApps/cell_name/ upgrader_war.ear/upgrader.war/WEB-INF/ classes`
Windows	`C:\Program Files\IBM\WebSphere\ AppServer\profiles\profile_name\ installedApps\cell_name\ upgrader_war.ear\upgrader.war\WEB-INF\ classes`

b. Find the line in the file that starts with `SOAPConnectorAddress` and change the port (the value after the =) to the port number that the deployment manager uses.

10. Navigate back to **Applications** → **Enterprise Applications**, select upgrader, and then click **Start**.

Related concepts

Installation and Upgrade Worksheet
For more information about the Content Engine parameter values, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Backing up the version 4.5.1 GCD database:

You need to back up your version 4.5.1 GCD database before you start upgrading Content Engine data so that in case the upgrade fails, you can recover your original system environment.

To back up your version 4.5.1 GCD database:

User your database administration tools to back up the database that contains the GCD.

Starting Content Engine Web Upgrade Tool:

To use Content Engine Web Upgrade Tool, you browse to the machine where the tool is running.

To start Content Engine Web Upgrade Tool:

1. Log on to a machine where version 8.0 of Microsoft Internet Explorer is installed.
2. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine Web Upgrade Tool values, filter by **CE Web Upgrade Tool** in the **Installation or Configuration Program** column.
3. From the machine you logged on to, browse to the Web site `http://ce_server_name:port_number/upgrader`. *ce_server_name* is the host name of the machine where you run the tool, and *port_number* is the WSI port used by the application server on which Content Engine is deployed. (You cannot browse to the Web site using the HTTPS protocol.)

   Important: If Content Engine is in a cluster or farm environment, you can run the tool from any node in the environment. Browse directly to the node where the tool is running, rather than using a load balance URL.
4. At the Log In window, log in as *gcd_admin*, the GCD administrator user. This user must also be an object store administrator with full control permissions on each object store to be upgraded.

   Important: Do not run more than one instance of Content Engine Web Upgrade Tool at a time.

   If this is your first login for the FileNet P8 domain that you are upgrading, continue at step 5 on page 84. Otherwise, Content Engine Web Upgrade Tool displays the Upgrade Information window, where you can resume validating and upgrading the object stores.

5. Enter the location of the GCD file `sysinit.dat` on the Windows machine where version 3.5.2 of Content Engine is installed. If you previously copied `sysinit.dat` to another location to ensure that it is accessible from a UNIX Content Engine server, you can specify that location instead. Do not rename the file: otherwise, Content Engine Web Upgrade Tool prompts you for a file named `sysinit.dat`.

   Important: Do not delete the GCD file on the Windows machine where version 3.5.2 of Content Engine is installed.
6. Verify that a file named `upgrade4512.xml` exists. To find the file, navigate to the directory shown in the working directory entry in the right panel of the Upgrade Information page. Then, navigate within that directory to the `FileNet/upgrader` directory. You might need to edit this file to fix errors that occur during the validation or upgrade phases.
7. Verify that a file named `upgrade_trace-`*`timestamp`*`.log` is in the `FileNet/upgrader/logs` directory. Content Engine Web Upgrade Tool creates this file anew each time you log in, and it moves the file from the previous login to the `FileNet/upgrader/logs/backup` directory. This file records all the validation and upgrade activity.

Upgrading a version 3.5.2 FileNet P8 domain into a new version 4.5.1 FileNet P8 domain:

You have a new version 4.5.1 FileNet P8 domain and are upgrading version 3.5.2 object stores into it.

"Validating object stores"
Validation determines whether your object stores and other Content Engine data are ready to be upgraded. You cannot upgrade your object stores until they are successfully validated.

"Upgrading object stores" on page 86
You need to upgrade your object stores before they can be made available for use in version 4.5.1 FP2 (or later) of Content Engine.

Validating object stores:

Validation determines whether your object stores and other Content Engine data are ready to be upgraded. You cannot upgrade your object stores until they are successfully validated.

To validate object stores:

1. For each fixed content device in the left panel of the Upgrade Information window that needs info (as indicated by its icon in the left panel), select the device and specify the required parameter values in the right panel.

   Important: The SnapLockPassword parameter value is not stored. If you log off Content Engine Web Upgrade Tool and log back on, you must reenter the value.
2. If Hitachi [SnapLock] or IBM [Tivoli] are listed among the fixed content devices in the left panel, complete the following substeps. Otherwise, Content Engine Web Upgrade Tool does not process them:
   a. Choose **Tools → Edit XML**.

b. In the `upgrade4512.xml` file, replace all occurrences of `Unsupported` with `UpgradeFinished` to make Content Engine Web Upgrade Tool ignore these unsupported fixed content devices and fixed file stores (if any) in the object stores you upgrade.

c. Click **Save**.

3. Select the object stores to be validated. Initially, all the object stores are selected for validation. You can validate object stores in any order.

   If you want to validate object stores individually, select them from the left panel of Content Engine Web Upgrade Tool. If you want to select all the object stores at once, choose **Tools → Select All Object Stores**.

   You can clear your selections by choosing **Tools → Clear All Object Stores.** (The **Clear All Object Stores** menu choice is unavailable until you select at least one object store.)

4. For each object store that you selected to be validated, complete the following substeps:

   a. In the right panel, specify the required values from your worksheet.

   b. If the object store uses fixed file stores, set the values for the root directories to their current locations. (The initial values that appear in these fields are from `sysinit.dat` and are not correct for version 4.5.1 of Content Engine.)

   c. When you click **Save**, a prompt reminds you to be sure that you chose the correct data sources for the object store. It also reminds to you to verify that you can read from and write to the file stores of the object stores from the Content Engine server.

5. Click **Validate** to validate the object stores that you selected.

   Each time you click **Validate**, Content Engine Web Upgrade Tool creates the file `validation.log` in the directory `FileNet/upgrader/logs`, and moves the (time-stamped) log file from the previous validation (if any) into the directory `FileNet/upgrader/logs/backup`. Both directories are relative to the location specified in the working directory on the Upgrade Information page.

   Validation errors, such as missing or incorrect parameters, open in the right panel and are also written to `validation.log`.

6. Select **View → Validation Log** to check the `validation.log` file for errors. The file opens in a scrollable window. Errors are also displayed in the right panel.

   You can correct some validation errors within the Content Engine Web Upgrade Tool interface; other errors can be corrected only manually or by using another interface, such as IBM FileNet Enterprise Manager.

7. To correct a validation error within Content Engine Web Upgrade Tool, complete the following substeps:

   a. If the error indicates unspecified or invalid JDBC or JDBC XA data sources, choose the correct data source or fix the data source at the application server.

   b. If the error is in the file store path, specify the correct path.

   c. If the error is in the file store path, ensure that the file store exists, and that Content Engine can read and write to the file store. (Content Engine Web Upgrade Tool checks that the destination directory associated with the file store exists and that the inbound directory is empty.)

   d. Click **Save**.

   e. Click **Validate** and return to step 6.

8. If the validation log indicates an invalid object store state because of pre-upgrade errors (for example, conflicting classes or properties or pending

queue items or publishing requests), log on to version 3.5.2 of IBM FileNet Enterprise Manager and fix the error within the Content Engine 3.5.2 domain.

9. If you successfully validated an object store, you can upgrade it. To validate more object stores, return to step 3 on page 85.

Upgrading object stores:

You need to upgrade your object stores before they can be made available for use in version 4.5.1 FP2 (or later) of Content Engine.

To upgrade object stores:

1. Select the object stores to be upgrade.

   If you want to upgrade object stores individually, select them from the left panel of Content Engine Web Upgrade Tool. If you want to select all the object stores at once, choose **Tools → Select All Object Stores**. You can upgrade object stores in any order. In either case, the first set of Content Engine object store that you select for upgrade includes (by default) the GCD, domain addons, and fixed content devices.

   You can clear your selections by choosing **Tools → Clear All Object Stores.** (The **Clear All Object Stores** menu choice is unavailable until you select at least one object store.

   Tip: The upgrade log file can get long. For ease in viewing the log, upgrade only one object store at a time.

2. Click **Upgrade**. The right panel displays a log showing the progress of the upgrade.

   Each time you click **Upgrade**, Content Engine Web Upgrade Tool creates a file named `upgrade-running.log` in the `FileNet/upgrader/logs` directory, and copies the previous `upgrade-running.log` file to the `upgrader_trace-`*`timestamp`*`.log` file in the `FileNet/upgrader/logs/backup` directory.

   After the upgrade starts, you can pause it by clicking **Pause**. The upgrade pauses as soon as it finishes upgrading whatever object store node it is currently processing. To resume the upgrade, click **Resume**.

   If you exit the browser in which Content Engine Web Upgrade Tool is running, an upgrade that is in progress continues in the background. If you log back in, you see the upgrade status at its current state in the right panel.

   Content Engine Web Upgrade Tool indicates which object store it is upgrading by changing the appearance of the corresponding icon in the left panel. The tool also changes the appearance of each icon to indicate that it has completed the upgrade of an object store.

   Content Engine Web Upgrade Tool also puts the most recent upgrade report file `upgrade.htm` into the directory `FileNet/upgrader/reports` and moves the (time-stamped) report file from the previous upgrade into the directory `FileNet/upgrader/reports/backup`. Both directories are relative to the location specified in the working directory on the Upgrade Information page.

3. If Content Engine Web Upgrade Tool detects an error in upgrading an object store, it halts. To correct the error, complete the following substeps:

   a. Choose **View → Upgrade Log** and search the upgrade log to determine where the error occurred.

   b. Close the error log in the right panel and click the node in the left panel where the error occurred.

   c. If the error can be fixed without requiring you to restore the version 4.5.1 GCD database (in case of a domain upgrade failure) or the object store

database (in case of an object store upgrade failure), fix the condition that caused the error and then click **Reenable Upgrade** next to the failed node to reset the node to the ready state.

d. If the error indicates that you need to restore the version 4.5.1 GCD database to its state before the upgrade, click **Reenable Upgrade** at the top of the right panel for each domain node to reset it to the ready state. Use your database tools to restore the database to its state before the upgrade of Content Engine from version 3.5.2.

e. If the error indicates that you need to restore the object store database to its state before the upgrade, click **Reenable Upgrade** at the top of the right panel to reset all nodes of the object store to ready state. Use your database tools to restore the database to its state before the upgrade of Content Engine from version 3.5.2. If the error occurred during the Upgrade Addons phase because of classes or properties that were removed from the object store and imported by a System Addon, reimport the Addon XML file to replace the missing classes or properties. Then, log in to version 4.5.1 FP2 of IBM FileNet Enterprise Manager and refresh the object stores node. If the object store that failed is visible, delete it.

f. Click **Bring Online** for each object store selected for upgrade that Content Engine Upgrade Tool did not attempt to upgrade (because of the error that stopped processing) if you need the version 3.5.2 object stores available while you are resolving the object store or domain error.

g. Return to step 2 on page 86.

4. If the upgrade succeeds, and you have additional object stores to upgrade, return to step 1 on page 86.

   Important: When you have successfully upgraded an object store, Content Engine Web Upgrade Tool prevents you from trying to upgrade the object store again.

5. When you have upgraded all the object stores, choose **View → Upgrade Report** to see a summary of the results of the upgrades.

Upgrading a version 3.5.2 FileNet P8 domain into an existing version 4.5.1 FileNet P8 domain:

You have an existing version 4.5.1 FileNet P8 domain (which already contains object stores) and are upgrading version 3.5.2 object stores into it.

To upgrade a version 3.5.2 domain into an existing version 4.5.1 FileNet P8 domain:

1. Resolve any conflicts between the GCD objects (such as marking sets and fixed content devices) and object store names in the version 4.5.1 domain with the corresponding GCD objects and object store names in the version 3.5.2 domain.
2. Choose **File → Start New Upgrade** to start an upgrade of version 3.5.2.
3. Enter the location of the GCD file `sysinit.dat` on the Windows machine where version 3.5.2 of Content Engine is installed. If you previously copied `sysinit.dat` to another location to ensure that it is accessible from a UNIX Content Engine server, you can specify that location instead. Do not rename the file: otherwise, Content Engine Web Upgrade Tool prompts you for a file named `sysinit.dat`.

   Important: Do not delete the GCD file on the Windows machine where version 3.5.2 of Content Engine is installed.

4. Verify that a file named `upgrade4512.xml` exists. To find the file, navigate to the directory shown in the working directory entry in the right panel of the Upgrade Information page. Then, navigate within that directory to the `FileNet/upgrader` directory. You might need to edit this file to fix errors that occur during the validation or upgrade phases.
5. Verify that a file named `upgrade_trace-`*`timestamp`*`.log` is in the `FileNet/upgrader/logs` directory. Content Engine Web Upgrade Tool creates this file anew each time you log in, and it moves the file from the previous login to the `FileNet/upgrader/logs/backup` directory. This file records all the validation and upgrade activity.

"Upgrading object stores"
You need to upgrade your object stores before they can be made available for use in version 4.5.1 FP2 (or later) of Content Engine.

"Validating object stores" on page 89
Validation determines whether your object stores and other Content Engine data are ready to be upgraded. You cannot upgrade your object stores until they are successfully validated.

Upgrading object stores:

You need to upgrade your object stores before they can be made available for use in version 4.5.1 FP2 (or later) of Content Engine.

To upgrade object stores:

1. Select the object stores to be upgrade.

   If you want to upgrade object stores individually, select them from the left panel of Content Engine Web Upgrade Tool. If you want to select all the object stores at once, choose **Tools → Select All Object Stores**. You can upgrade object stores in any order. In either case, the first set of Content Engine object store that you select for upgrade includes (by default) the GCD, domain addons, and fixed content devices.

   You can clear your selections by choosing **Tools → Clear All Object Stores.** (The **Clear All Object Stores** menu choice is unavailable until you select at least one object store.

   Tip: The upgrade log file can get long. For ease in viewing the log, upgrade only one object store at a time.
2. Click **Upgrade**. The right panel displays a log showing the progress of the upgrade.

   Each time you click **Upgrade**, Content Engine Web Upgrade Tool creates a file named `upgrade-running.log` in the `FileNet/upgrader/logs` directory, and copies the previous `upgrade-running.log` file to the `upgrader_trace-`*`timestamp`*`.log` file in the `FileNet/upgrader/logs/backup` directory.

   After the upgrade starts, you can pause it by clicking **Pause**. The upgrade pauses as soon as it finishes upgrading whatever object store node it is currently processing. To resume the upgrade, click **Resume**.

   If you exit the browser in which Content Engine Web Upgrade Tool is running, an upgrade that is in progress continues in the background. If you log back in, you see the upgrade status at its current state in the right panel.

   Content Engine Web Upgrade Tool indicates which object store it is upgrading by changing the appearance of the corresponding icon in the left panel. The tool also changes the appearance of each icon to indicate that it has completed the upgrade of an object store.

Content Engine Web Upgrade Tool also puts the most recent upgrade report file `upgrade.htm` into the directory `FileNet/upgrader/reports` and moves the (time-stamped) report file from the previous upgrade into the directory `FileNet/upgrader/reports/backup`. Both directories are relative to the location specified in the working directory on the Upgrade Information page.

3. If Content Engine Web Upgrade Tool detects an error in upgrading an object store, it halts. To correct the error, complete the following substeps:
   a. Choose **View → Upgrade Log** and search the upgrade log to determine where the error occurred.
   b. Close the error log in the right panel and click the node in the left panel where the error occurred.
   c. If the error can be fixed without requiring you to restore the version 4.5.1 GCD database (in case of a domain upgrade failure) or the object store database (in case of an object store upgrade failure), fix the condition that caused the error and then click **Reenable Upgrade** next to the failed node to reset the node to the ready state.
   d. If the error indicates that you need to restore the version 4.5.1 GCD database to its state before the upgrade, click **Reenable Upgrade** at the top of the right panel for each domain node to reset it to the ready state. Use your database tools to restore the database to its state before the upgrade of Content Engine from version 3.5.2.
   e. If the error indicates that you need to restore the object store database to its state before the upgrade, click **Reenable Upgrade** at the top of the right panel to reset all nodes of the object store to ready state. Use your database tools to restore the database to its state before the upgrade of Content Engine from version 3.5.2. If the error occurred during the Upgrade Addons phase because of classes or properties that were removed from the object store and imported by a System Addon, reimport the Addon XML file to replace the missing classes or properties. Then, log in to version 4.5.1 FP2 of IBM FileNet Enterprise Manager and refresh the object stores node. If the object store that failed is visible, delete it.
   f. Click **Bring Online** for each object store selected for upgrade that Content Engine Upgrade Tool did not attempt to upgrade (because of the error that stopped processing) if you need the version 3.5.2 object stores available while you are resolving the object store or domain error.
   g. Return to step 2 on page 88.
4. If the upgrade succeeds, and you have additional object stores to upgrade, return to step 1 on page 88.

   Important: When you have successfully upgraded an object store, Content Engine Web Upgrade Tool prevents you from trying to upgrade the object store again.
5. When you have upgraded all the object stores, choose **View → Upgrade Report** to see a summary of the results of the upgrades.

Validating object stores:

Validation determines whether your object stores and other Content Engine data are ready to be upgraded. You cannot upgrade your object stores until they are successfully validated.

To validate object stores:

1. For each fixed content device in the left panel of the Upgrade Information window that needs info (as indicated by its icon in the left panel), select the device and specify the required parameter values in the right panel.

   Important: The SnapLockPassword parameter value is not stored. If you log off Content Engine Web Upgrade Tool and log back on, you must reenter the value.
2. If Hitachi [SnapLock] or IBM [Tivoli] are listed among the fixed content devices in the left panel, complete the following substeps. Otherwise, Content Engine Web Upgrade Tool does not process them:
   a. Choose **Tools → Edit XML**.
   b. In the `upgrade4512.xml` file, replace all occurrences of `Unsupported` with `UpgradeFinished` to make Content Engine Web Upgrade Tool ignore these unsupported fixed content devices and fixed file stores (if any) in the object stores you upgrade.
   c. Click **Save**.
3. Select the object stores to be validated. Initially, all the object stores are selected for validation. You can validate object stores in any order.

   If you want to validate object stores individually, select them from the left panel of Content Engine Web Upgrade Tool. If you want to select all the object stores at once, choose **Tools → Select All Object Stores**.

   You can clear your selections by choosing **Tools → Clear All Object Stores.** (The **Clear All Object Stores** menu choice is unavailable until you select at least one object store.)
4. For each object store that you selected to be validated, complete the following substeps:
   a. In the right panel, specify the required values from your worksheet.
   b. If the object store uses fixed file stores, set the values for the root directories to their current locations. (The initial values that appear in these fields are from `sysinit.dat` and are not correct for version 4.5.1 of Content Engine.)
   c. When you click **Save**, a prompt reminds you to be sure that you chose the correct data sources for the object store. It also reminds to you to verify that you can read from and write to the file stores of the object stores from the Content Engine server.
5. Click **Validate** to validate the object stores that you selected.

   Each time you click **Validate**, Content Engine Web Upgrade Tool creates the file `validation.log` in the directory `FileNet/upgrader/logs`, and moves the (time-stamped) log file from the previous validation (if any) into the directory `FileNet/upgrader/logs/backup`. Both directories are relative to the location specified in the working directory on the Upgrade Information page.

   Validation errors, such as missing or incorrect parameters, open in the right panel and are also written to `validation.log`.
6. Select **View → Validation Log** to check the `validation.log` file for errors. The file opens in a scrollable window. Errors are also displayed in the right panel.

   You can correct some validation errors within the Content Engine Web Upgrade Tool interface; other errors can be corrected only manually or by using another interface, such as IBM FileNet Enterprise Manager.
7. To correct a validation error within Content Engine Web Upgrade Tool, complete the following substeps:

a. If the error indicates unspecified or invalid JDBC or JDBC XA data sources, choose the correct data source or fix the data source at the application server.
b. If the error is in the file store path, specify the correct path.
c. If the error is in the file store path, ensure that the file store exists, and that Content Engine can read and write to the file store. (Content Engine Web Upgrade Tool checks that the destination directory associated with the file store exists and that the inbound directory is empty.)
d. Click **Save**.
e. Click **Validate** and return to step 6 on page 90.

8. If the validation log indicates an invalid object store state because of pre-upgrade errors (for example, conflicting classes or properties or pending queue items or publishing requests), log on to version 3.5.2 of IBM FileNet Enterprise Manager and fix the error within the Content Engine 3.5.2 domain.
9. If you successfully validated an object store, you can upgrade it. To validate more object stores, return to step 3 on page 90.

Upgrading Content Engine data using Content Engine Upgrader tool

Use Content Engine Upgrader tool to upgrade your version 3.5.2 FileNet P8 domain and object stores if you cannot use Content Engine Web Upgrade Tool.

"Preparing the Content Engine Upgrader tool"
Before using the Content Engine Upgrader tool to update your Content Engine data, you must install the JDBC driver and edit the upgrader batch file.

"Backing up the version 4.5.1 GCD database" on page 93
You need to back up your version 4.5.1 GCD database before you start upgrading Content Engine data so that in case the upgrade fails, you can recover your original system environment.

"Running the Content Engine Upgrader tool by using the graphical user interface" on page 93
You can use the graphical user interface (GUI) version of the Content Engine Upgrader tool to update your object stores. The graphical user interface provides an interactive interface where each upgrade step is tied to the next, and where you can check the accuracy of your upgrade parameters before starting the upgrade.

"Running the Content Engine Upgrader tool by using the command-line interface" on page 98
You can create an XML upgrade status file and run the Content Engine Upgrader tool by using the command-line interface (CLI). The command-line version of the Upgrader tool does not encrypt the passwords or any other sensitive data. If your site requires compliance with FIPS-140, then use the graphical user interface to preserve password secrecy.

Preparing the Content Engine Upgrader tool:

Before using the Content Engine Upgrader tool to update your Content Engine data, you must install the JDBC driver and edit the upgrader batch file.

"Installing the JDBC driver for the Upgrader tool" on page 92
If you have installed the Content Engine Upgrader tool on a computer that does not have version 4.5.1 of Content Engine Server installed, then you must install the JDBC driver file.

"Editing the upgrader batch file"
You must specify the database JDBC driver file. You can also increase the minimum and maximum JVM heap sizes.

Installing the JDBC driver for the Upgrader tool:

If you have installed the Content Engine Upgrader tool on a computer that does not have version 4.5.1 of Content Engine Server installed, then you must install the JDBC driver file.

For example, if you are upgrading and migrating to a UNIX system, you must run the Upgrader tool on a Windows system to upgrade the existing Content Engine data. You can install the Upgrader tool on Windows without installing all the Content Engine components.

1. See the *IBM FileNet P8 Hardware and Software Requirements* for information about the JDBC driver file for the database type that you need for the Global Configuration Data (GCD) or object stores you are upgrading.
2. Depending on your database type, copy the appropriate JDBC driver file to a directory on the system where the Upgrader tool is installed. For example, copy the file to the `C:\jars` directory.

   Important: Do not copy the file to the `...WebSphere\AppServer\lib\ext` directory.

Related information

Product documentation for IBM FileNet P8 Platform
Download the IBM FIleNet P8 Hardware and Software Requirements, as well as PDF's of the rest of the IBM FileNet P8 Platform documentation.

Editing the upgrader batch file:

You must specify the database JDBC driver file. You can also increase the minimum and maximum JVM heap sizes.

To increase the minimum and maximum JVM heap sizes and specify the JDBC driver file:

1. Open the upgrader batch file *ce_install_path*`/tools/upgrade/CE451Upgrader.bat` file in a text editor.
2. Optional: You can edit the upgrader batch file to increase the minimum and maximum JVM heap sizes. The recommended minimum heap size (-Xms) is 512 MB, and the recommended maximum JVM heap sizes (-Xmx) is 1024 MB.

   Tip: If you are upgrading a system that has only a few object stores and custom objects, you can retain the default settings by skipping to 3 on page 93. The defaults for the minimum and maximum heap sizes are 256 MB and 512 MB.

   To edit the JVM sizes:

   Graphical user interface

   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
   ```

Command line interface

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 %*
```

3. Specify the database JDBC driver file.
   a. Uncomment the `set JDBCPATH` 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 "Installing the JDBC driver for the Upgrader tool" on page 92. For example, if *YOURDRIVERPATH* is `C:/jars`, use one of the following commands:

Backing up the version 4.5.1 GCD database:

You need to back up your version 4.5.1 GCD database before you start upgrading Content Engine data so that in case the upgrade fails, you can recover your original system environment.

To back up your version 4.5.1 GCD database:

User your database administration tools to back up the database that contains the GCD.

Running the Content Engine Upgrader tool by using the graphical user interface:

You can use the graphical user interface (GUI) version of the Content Engine Upgrader tool to update your object stores. The graphical user interface provides an interactive interface where each upgrade step is tied to the next, and where you can check the accuracy of your upgrade parameters before starting the upgrade.

"Starting the Content Engine upgrader tool"
You can use the graphical user interface (GUI) version of the Content Engine Upgrader tool to update your object stores.

"Creating a new XML upgrade status file" on page 94
You must create an XML upgrade status file to identify the object stores and Content Engine data to upgrade.

"Configuring authentication, fixed content devices, and object store parameters" on page 94
You must provide authentication information for the upgraded data and provide information about your fixed content devices (FCDs) and object stores before you can upgrade the Content Engine data.

"Performing the upgrade" on page 96
You must complete the Content Engine upgrade by applying the settings from your XML upgrade status file.

Starting the Content Engine upgrader tool:

You can use the graphical user interface (GUI) version of the Content Engine Upgrader tool to update your object stores.

To run the Upgrader tool:

1. Log on to the machine where the Upgrader tool is installed as *ce_upgrader_tool_user*, which is the user who runs the tool.

2. Double-click the icon for `CE450Upgrader.bat` to start the Upgrader tool.

Related information

Specify IBM FileNet P8 accounts
See details on required accounts and related permissions.

Creating a new XML upgrade status file:

You must create an XML upgrade status file to identify the object stores and Content Engine data to upgrade.

1. If the Begin Upgrade screen is not displayed, select **File → New**.
2. Select the **Upgrade type**.
3. If you are upgrading from Content Engine version 3.5, enter the full path to the GCD file `sysinit.dat`. The default location for version 3.5 is *ce_install_path*`\sysconfig\sysinit`. If needed, click **Browse** to locate the file.
4. Enter the XML Upgrade Status File full path and file name. If needed, click **Browse** to select the location.
5. Click **Begin**.

   The XML upgrade status file is created in the location you specified, and the Provide Content Engine Authentication Information screen is displayed.

Configuring authentication, fixed content devices, and object store parameters:

You must provide authentication information for the upgraded data and provide information about your fixed content devices (FCDs) and object stores before you can upgrade the Content Engine data.

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
      - The version 4.5.1 FileNet P8 domain name
      - The Content Engine Server URL. The default is `http://`*server_name*`:`*port_number*`/wsi/FNCEWS40MTOM`.

        where *server_name* is the host name of the machine where Content Engine is deployed, and *port_number* is the port that Content Engine uses.

   b. Click **Test** to verify the authentication information. A confirmation message is displayed.
      - If the Upgrader tool can connect by using the values that 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.

   c. Repeat Step a and Step b as needed until the validation test passes.
   d. 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 **UpgradeItems** → **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 fixed content device are displayed in the right pane in the **FCS Settings** tab.
   b. Enter the values for the fixed content device settings properties. Values with an * (asterisk) are required values.

      Important:

      - (CFS-IS) Leave the value of the **CSMCache** parameter blank. You can specify a value after the upgrade completes.

        For descriptions of these parameters, see IBM FileNet P8 help topic **System Administration** → **Content Engine Administration** → **FileNet P8 Domain** → **How to...** → **View/modify P8 domain properties** → **Fixed Content Devices (General tab)**.
      - For SnapLock fixed devices where Content Engine version 4.5.1 is on UNIX, make sure you have prepared the UNIX NFS mount to the SnapLock device as instructed in "Configuring storage devices for upgrades" on page 59. 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 Content Engine version 4.5.1 is installed on a UNIX Server, make sure that new Centera shared libraries have been properly installed on the Content Engine version 4.5.1 server as instructed in "Installing or updating EMC Centera SDK library files" on page 51.
   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 **UpgradeItems** → **Object Stores**. Click the ***object store name*** to select an item that is in Needs Info state.

      Each object store might have one or more items in Needs Info state. You must supply the required values for the **Database**, **GCDObjectStore**, **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.
   b. Specify the database properties for the selected object store.
      1) Click **Database**. The **Database Settings** tab opens in the right pane.
      2) Specify values for the following properties:
         - **Database user name**
         - **Database password**
         - **Database type**
         - **Database class**

For this database type	Use this value for the database class
Oracle	`oracle.jdbc.OracleDriver`

         - **Database URL**

For this database type	Use this value for the database URL
Oracle	`jdbc:oracle:thin:@db_hostname:port:Oracle_instance_SID`. The default port is 1521.

3) Click **Test** to verify the connection to the database. A confirmation message is displayed.
   - If the Upgrader tool can connect by using the values that 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. Specify the Java Naming and Directory Interface (JNDI) properties for the selected object store. Click **GCDObjectStore** 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.
   1) Click the **name** of a file store that is in Needs Info state. The **File Store Path** tab opens in the right pane.
   2) Click **Save** if you made any changes.
   3) Repeat Step d for each file store.

e. 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.

f. Take all object stores selected to upgrade offline. In the right pane, select the **Description/Online/Offline** tab, and click **Take Offline**.

g. Repeat Step 3 as needed until all the object stores are either in Ready state or disabled for the upgrade.

Performing the upgrade:

You must complete the Content Engine upgrade by applying the settings from your XML upgrade status file.

In order for an item to be upgraded, the check box for the corresponding node in the Upgrade Tree pane must be selected, and the item must be in Ready state. Each selected check box maps to a `yes` value for `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 the upgrade progress.

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 to upgrade an item whose previous upgrade attempt failed, perform the following steps:

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.

   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 Step 8 on page 98. 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 to 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 must increase your application server timeout settings. Complete the following steps:
      1) Increase your application server transaction timeout value. Make a note of your existing values before you make changes. Depending on your hardware, you might increase the timeout value to as much as 6000 seconds.

         IBM WebSphere Application Server
         Navigate to **Application Servers** → **servername** → **Container**

Services → Transaction Services, and increase the values for **Total transaction lifetime timeout** and **Maximum transaction timeout**.

2) Restart the application server.
3) Restart the upgrade for the object store add-ons.
4) After the upgrade completes successfully, you can reset the application server timeout settings to the previous values.

d. Return to Step 1 on page 97.

8. Update the file count and the file bytes parameter values for the database storage areas associated with the upgraded object stores by running the Update Storage Area Statistics function in the Content Consistency Checker tool. For details, see **System Administration → Content Engine Administration → Content storage → Storage area consistency → How to... → Update storage area statistics**.

Running the Content Engine Upgrader tool by using the command-line interface:

You can create an XML upgrade status file and run the Content Engine Upgrader tool by using the command-line interface (CLI). The command-line version of the Upgrader tool does not encrypt the passwords or any other sensitive data. If your site requires compliance with FIPS-140, then use the graphical user interface to preserve password secrecy.

If you do not want to include Content Search Engine as part of your Content Engine upgrade, you must unconfigure content-based retrieval (CBR) from the version 3.5 object store by using the version 3.5Enterprise Manager.

The Upgrader tool gathers data from the Content Engine version 3.5 Global Configuration Data (GCD) and creates an XML upgrade status file that represents the items that can be upgraded.

The XML file contains placeholders, which you must manually edit, for system settings that cannot be derived from the GCD, such as authentication settings. Each placeholder is indicated by the character string ###.

To run the Upgrader tool:

1. Log on to the machine where the Upgrader tool is installed as *ce_upgrader_tool_user*.
2. Navigate to the *ce_install_path*\tools\upgrade directory, which contains the CE451Upgrader.bat file.
3. Record the path *GCD_Path* to the GCD sysinit.dat file on the Content Engine version 3.5 machine.
4. Designate a path *XML_Path* for the XML upgrade status file.
5. Run the following command to create the XML upgrade status file upgrade.xml. Do not enter any line breaks. `CE451Upgrader.bat -i"GCD_Path/sysinit.dat" -o"upgrade.xml"`

1. "Editing the upgrade.xml upgrade status file" on page 99
   You must the XML upgrade status file to provide information about the items you want to upgrade.
2. "Performing the upgrade" on page 99
   You can run the Upgrader tool from the command line to upgrade the items that you selected for upgrade in the upgrade.xml upgrade status file.

Related concepts

Specifying IBM FileNet P8 accounts for upgrades
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Editing the `upgrade.xml` upgrade status file:

You must the XML upgrade status file to provide information about the items you want to upgrade.

The `upgrade.xml` upgrade status file contains placeholders, for system settings that cannot be derived from the Global Configuration Data (GCD), such as authentication settings. Each placeholder is indicated by the character string `###`.

To edit the `upgrade.xml` upgrade status file:

1. Open the `upgrade.xml` file in a text editor.
2. Replace each occurrence of the string `###` with information that is appropriate for your site.
3. Enter any passwords in plain text. The Upgrader tool does not encrypt the passwords or any other sensitive data. If your site requires compliance with FIPS-140, then use the graphical user interface to preserve password secrecy.
4. Set the value for `SelectedForUpgrade` to `yes` to upgrade the item. Set the value for `SelectedForUpgrade` to `no` for items that you do not want to upgrade now.
5. Set the `Status` attribute to `ReadyToUpgrade` for the items that you want to upgrade. An item is upgraded only if the `SelectedForUpgrade` value is `yes` and the Status value is `ReadyToUpgrade`. The following table describes the possible values for the status:

Status Value	Description
NeedsInfo	Additional configuration information is needed. Change this value to `ReadyToUpgrade` only after you have supplied all the required values for the item.
ReadyToUpgrade	The item will be upgraded if the corresponding `SelectedForUpgrade` value is set to `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	The Device is not supported by the Upgrader tool. This status applies to fixed content devices only.

6. Save your edits. If you have no file stores or fixed content devices (FCDs) that contain full-text (CBR) indexes (Verity collections) to upgrade, then you have finished preparing for the upgrade.
7. Save your changes and close the XML upgrade status file.

Performing the upgrade:

You can run the Upgrader tool from the command line to upgrade the items that you selected for upgrade in the `upgrade.xml` upgrade status file.

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 for the object store in the `upgrade.xml` upgrade status file.

1. Log on to the machine where the Upgrader tool is installed as ce_upgrader_tool_user.
2. Navigate to the *ce_install_path*`\tools\upgrade` directory, which contains `CE451Upgrader.bat`.
3. Optional: To see the available options, run the Upgrader tool from a command line, as follows: `CE451Upgrader -h`
4. Run the Upgrader tool by entering the following command:

   ```
   CE451Upgrader -i upgrade.xml -r
   ```

   The `-r` flag is optional. If you include it in the command, the tool generates an HTML report.

   Important: The tool upgrades only the items that have an initial status of ReadyToUpgrade and a SelectedForUpgrading value of `yes`.

   The Upgrader tool sends a status message to the command line and to a log4j logging system as it attempts to upgrade each item. If the upgrade for a specific item fails, the Upgrader tool stops.
5. If the upgrade fails for an item, 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 the `upgrade.xml` file to replace any `Status` value of `UpgradeStarted` or `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 must increase your application server timeout settings.

      Complete the following steps:

      1) Increase your application server transaction timeout value. Make a note of your existing values before you make changes. Depending on your hardware, you might must increase the timeout value to as much as 6000 seconds.

         IBM WebSphere Application Server
         Navigate to **Application Servers → servername → Container Services → Transaction Services**, and increase the values for **Total transaction lifetime timeout** and **Maximum transaction timeout**.

      2) Restart the application server.
      3) Restart the upgrade for the object store add-ons.
      4) After the upgrade completes successfully, you can reset the application server timeout settings to the previous values.

   d. If the failure occurred due to an error after the database upgrade has completed, then restore your database from backup.
6. Update the file count and the file bytes parameter values for the database storage areas associated with the upgraded object stores by running the Update Storage Area Statistics function in the Content Consistency Checker tool. For

details, see **System Administration** → **Content Engine Administration** → **Content storage** → **Storage area consistency** → **How to...** → **Update storage area statistics**.

Related concepts

Specifying IBM FileNet P8 accounts for upgrades
For details on accounts and required permissions, see "Accounts for Content Engine upgrade" in *Plan and Prepare Your Environment for IBM FileNet P8*.

Updating the database storage area parameters

After you have upgraded your object stores, you need to initialize the parameter values for the associated database storage areas.

Having upgraded the object stores, you now need to set the file count and the file bytes parameter values for the associated database storage areas. These values need to match the values for the database storage areas before the object stores were upgraded.

To update the database storage area parameters:

Run the Content Consistency Checker tool to update the file count and the file bytes parameter values for the database storage areas. You update the values by running the Update Storage Area Statistics function in the tool. For details, see **System Administration** → **Content Engine Administration** → **Content storage** → **Storage area consistency** → **How to...** → **Update storage area statistics**.

Completing Content Search Engine upgrade from 3.5.2

After you upgrade Content Engine data, you must create new content-search index areas in Enterprise Manager. Then you can enable indexing for designated classes and properties and reindex your stored data. The reindexing process creates new Autonomy K2 collections.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

This procedure covers the minimum setup and configuration steps to get content-based retrieval (CBR) configured and running with Autonomy K2 for an upgrade from 3.5.2. For more detail on content-based retrieval and Content Engine, see the IBM FileNet P8 help topic **System Administration** → **Content Engine Administration** → **Content-based retrieval** → **How to...** → **Configure CBR**.

Important: Where machine name variables are required, IP addresses will not validate. In these cases, you must enter the host name for the machine.

To complete the Content Search Engine upgrade from version 3.5.2:

1. Start Enterprise Manager and log on as the Global Configuration Data (GCD) Administrator.
2. Create a Verity Domain Configuration (VDC).
   a. Open your completed Installation and Upgrade Worksheet file.

      Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Enterprise Manager values for this task, filter by **EM: Verity Domain Configuration Tab** in the **Installation or Configuration Program** column.

b. Right-click **Enterprise Manager [domain]** in the Enterprise Manager tree and select **Properties**.
c. Click the **Verity Domain Configuration** tab.
d. 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. The default port number is 9950.
   - 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.
e. 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**.

   Important: 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. A given Content Engine server does not call multiple Broker Servers or merge associated search results. See the appropriate steps of the Configuring Content Search Engine task for instructions on how to create Broker Servers and assign Search Servers.

4. To access the Verity Locale Configuration Guide, complete the following substeps.

   Important: For information about how the K2 product uses locales and about performance and indexing options, review the Verity Locale Configuration Guide in the Autonomy-supplied documentation set.
   a. Open the Autonomy K2 Dashboard and click **Help**.
   b. Click **Library** (top right of the screen) to access the Autonomy K2 product guides. Each guide is available in HTML or PDF format.

5. To assign a CBR locale to the object store for which you want to enable indexing, complete the following substeps:
   a. Right-click the object store in the left pane of Enterprise Manager and choose **Properties** from the context menu.
   b. In the Properties dialog box, click the **CBR** tab.
   c. Specify one of the following locales (which are installed by default with Autonomy K2 Content Search Engine software) in the CBR Locale box:
      - uni (multi-language and slower indexing)
      - englishv (enhanced word-stemming and faster indexing)
      - english (limited capabilities and fast indexing)

      If you click **Set to Default CBR Locale**, the CBR locale is set to *uni*.

d. Click **Apply** or **OK**.

6. Create an index area for version 4.5.1 Content Search Engine collections:
   a. Open your completed Installation and Upgrade Worksheet file.

      Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Enterprise Manager values for this task, filter by **EM: Create an Index Area** in the **Installation or Configuration Program** column.

   b. In the Enterprise Manager tree view, expand the **Object Stores** container.
   c. Right-click the object store to which you want to add an index area and select **New** → **Index Area**.
   d. Complete the Create an Index Area wizard by using the values from your worksheet.

      Important: In the wizard, make sure you set the template type to FileNet_FileSystem_PushAPI.

   For more information about creating indexes, see the IBM FileNet P8 help topic **System Administration** → **Content Engine Administration** → **Content-based retrieval** → **How to...** → **Create Verity index area**.
7. Re-enable content-based retrieval for class definitions by activating the CBR Enabled flag for each class:
   a. Right-click ***class_name*** for the class that you want to configure in the Enterprise Manager tree and click **Properties**.
   b. Select the **CBR Enabled** check box, and click **OK**.
   c. Click **Yes** to confirm.
8. For each class property for which you want to enable content-based retrieval, complete the following substeps. The properties you enable must include those that you indexed for content-based retrieval in version 3.5.2 of Content Engine. Refer to the list of properties that you generated by SQL query command on each object store during the pre-upgrade phase of upgrading Content Engine.
   a. Right-click the base class or subclass that contains the property or properties that you want to reindex and click **Properties** from the context menu.
   b. Click the **Property Definitions** tab.
   c. Click the string property you want to enable for indexing and then click **Edit**.
   d. Select the CBR Enabled check box, and then click **OK**.
9. Reindex each class on which you enabled indexing in the preceding two steps by right-clicking the class and choosing one of the following:
   - **All Tasks** → **Index Class for Content Search**.
   - **All Tasks** → **Index Class for Content Search (include subclasses)**.

   For details, see the IBM FileNet P8 help topic **System Administration** → **Content Engine Administration** → **Content-based retrieval** → **How to...** → **Reindex**.
10. To monitor the reindexing progress, complete the following substeps:
    a. Select and right-click the object store node that contains the index areas that are being reindexed.
    b. Choose **All Tasks** → **Index Jobs Management**.

c. Click **Refresh** to monitor the progress. Click **Close** when reindexing is complete, as indicated by the job status <TERMINATED NORMALLY>.

11. Because the version 3.5.2 Content Search Engine collections (indexes) are no longer used, you can save hard drive space by deleting the index directories and all subdirectories. For example, `D:\CE_storage\FS_object_store_name\index`.

Related tasks

"Determining the CBR-enabled properties in an object store" on page 17
For each object store to be upgraded, you must determine the associated classes and properties that are currently enabled for content-based retrieval (CBR). You enable these properties after the upgrade is complete.

Upgrading Enterprise Manager

If you did not upgrade Enterprise Manager as part of a Content Engine upgrade, you can upgrade Enterprise Manager interactively or silently.

Be sure that you have available the Installation and Upgrade Worksheet that was filled out during your planning activities.

Important: You must keep one running version of Enterprise Manager version 3.5.2 until after you upgrade the Content Engine data. You must use Enterprise Manager version 3.5.2 to prepare your version 3.5.2 object stores for the Content Engine Upgrader tool.

To upgrade Enterprise Manager:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CE Installer** in the **Installation or Configuration Program** column.
2. On the machine where you are upgrading Enterprise Manager, log on as a member of the Local Administrators group or the Power Users group.
3. Access the Content Engine software package.
4. Start the Enterprise Manager installation.

Table 14. Installation methods

Installation method	Description
To install interactively	1. Run the following command in the software package: `P8CE-4.5.1-Win.exe` 2. Complete the installation program by using the values in your installation worksheet.

Table 14. Installation methods (continued)

Installation method	Description

To install silently	1. Open the `CE_silent_install.txt` file in the software package for editing.
	2. 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`
	3. Save your edits.
	4. Run the following command in the software package:
	`P8CE-4.5.1-WIN.EXE -f CE_silent_install.txt -i silent`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading from version 4.0.1 or 4.5.0

Upgrading Content Engine and Content Search Engine from version 4.0.1 or 4.5.0 is a multi-step process.

Important: Before you start to upgrade the Content Engine software, ensure that you are at the correct version and fix pack level, as indicated in *Plan and Prepare Your Environment for IBM FileNet P8*.

1. "Completing pre-upgrade Content Engine configuration" on page 106
   You must complete several pre-upgrade procedures to prepare the Content Engine for an upgrade from version 4.0.1 or 4.5.0.
2. "Upgrading Content Engine software from version 4.0.1 or 4.5.0" on page 109
   On UNIX application servers, you will upgrade Content Engine Server and install Configuration Manager. On Windows application servers, you will upgrade or install these components as needed: Content Engine Server, Configuration Manager, .NET Clients (including Enterprise Manager), Content Engine Upgrader, or FileNet Deployment Manager. You can run the upgrade interactively or silently.
3. "Upgrading Enterprise Manager" on page 111
   If you did not upgrade Enterprise Manager as part of a Content Engine upgrade, you can upgrade Enterprise Manager interactively or silently.
4. "Installing Content Engine software updates" on page 112
   You must apply any updates, fix packs, or interim fixes for the Content Engine software that have been released.
5. "Installing the latest Content Search Engine Client files on Content Engine servers" on page 112
   If your environment includes Content Search Engine, you must install the files that Content Engine uses to communicate with Content Search Engine.
6. "Granting directory permissions to the Configuration Manager user" on page 115

You must grant the file and directory permissions required by *config_mgr_user*, which is the user who runs Configuration Manager.

7. "Configuring Content Engine instances upgraded from version 4.0.1 or 4.5.0" on page 116
   You can configure your upgraded Content Engine instances with Configuration Manager. You must upgrade the Content Engine bootstrap properties for the upgraded Content Engine instance. A single Content Engine application instance equates to one deployed application on your application server.
8. "Installing the latest Process Engine client files on Content Engine servers" on page 121
   You must upgrade the Process Engine Client files on all application server machines where Content Engine Server is deployed.
9. "Deploying upgraded Content Engine instances" on page 123
   You must deploy the upgradedContent Engine on the web application server. Deploying makes the Content Engine application available for use.
10. "Installing storage device source files" on page 127
    If your upgraded IBM FileNet P8 system includes Tivoli Storage Manager or EMC Centera devices, you must install files on the Content Engine server.
11. "Completing Content Engine post-deployment steps" on page 130
    You must complete several Content Engine post-deployment steps before you can put an IBM FileNet P8 system into production.
12. "Verifying the Content Engine deployment" on page 131
    You can verify that the Content Engine deployment was successful by accessing the IBM FileNet P8 System Health page.
13. "Checking the automatic upgrade status for Content Engine data" on page 132
    When you deploy the upgraded Content Engine application on the web application server and start the application, the existing Content Engine data upgrade begins. You can check the progress on the upgrade to confirm that all object stores have been upgraded successfully
14. "Installing the latest Content Engine client files on other IBM FileNet P8 servers (for staged upgrades)" on page 134
    When you upgrade Content Engine 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.
15. "Upgrading Content Search Engine software from version 4.0.1 or 4.5.0" on page 134
    If you used the full-text search feature (CBR) in version 4.0.1 or 4.5.0, to upgrade you must export your current K2 server configurations on each machine, install the new version of Content-Search Engine (Autonomy K2) software, and then import your saved configuration.

Related information

General requirements for all FileNet P8 Platform systems
Check to make sure your software is at the correct fix pack level before you upgrade.

Completing pre-upgrade Content Engine configuration

You must complete several pre-upgrade procedures to prepare the Content Engine for an upgrade from version 4.0.1 or 4.5.0.

1. "Verifying that publishing requests have been completed"
   You must verify that all publishing requests have completed for each object store before you begin the upgrade from version 4.0.1 or 4.5.0.
2. "Backing up the database" on page 108
   You must back up the database before you begin the upgrade.
3. "Shutting down CFS Exporter" on page 108
   If your system includes version 4.0.0 or 4.5 of Content Federation Services (CFS), you must shut down the CFS Exporter before upgrading Content Engine.
4. "Preventing name conflicts with reserved words" on page 108
   You must verify that the object store names, custom classes, or custom properties in your current version do not conflict with reserved words before you begin the upgrade from version 4.0.1 or 4.5.0.
5. "Removing the deployed FileNetEngine application" on page 108
   You must remove the existing FileNetEngine application from the web application server to undeploy or uninstall the application EAR file. Removing the existing version ensures a clean deployment of the upgraded version 4.5.1 Content Engine EAR file.
6. "Clearing the web application server cache" on page 109
   You must clear the cache for the web application server to remove data for the Content Engine version 3.5.2 application to prevent conflicts with the upgraded version.

Verifying that publishing requests have been completed

You must verify that all publishing requests have completed for each object store before you begin the upgrade from version 4.0.1 or 4.5.0.

To verify that publishing requests complete:

1. Start Enterprise Manager if it is not already running.
2. Search for publishing requests in the queue by expanding the **Publishing** folder and clicking **Queue**. Then, click **View → All requests**.
3. Verify that the queue (right pane) of publishing requests is empty. If the queue is not empty, wait until the publish requests are processed. 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).
4. In the list view, under the object store icon, right-click the **Search Results** folder, and choose **New Search**.
5. In the Content Engine Query Builder window, click **Select From Table → PublishRequest**.
6. Retain the default settings and click **OK**.
7. Click **Yes** at the prompt for a WHERE clause. Any remaining event items in the queue are displayed in the Query Status window.
8. Remove unwanted items from the queue.
   a. In the list view, under the object store icon, right-click the **Search Results** folder, and choose **New Search**.
   b. In the Content Engine Query Builder window, click **Select From Table → PublishRequest**.
   c. Select the **Delete objects** check box in the **Actions** tab of the Search window.
   d. Click **OK**. Click **OK** again to confirm the deletion.
9. Repeat this procedure for each object store in your environment.

Backing up the database

You must back up the database before you begin the upgrade.

1. Use your existing database backup solution to back up each of the Content Engine object store databases.
2. Backup the Global Configuration Data GCD database. The default GCD database name is FNGCDDB.
3. Backup the database for each object store in your environment.

Shutting down CFS Exporter

If your system includes version 4.0.0 or 4.5 of Content Federation Services (CFS), you must shut down the CFS Exporter before upgrading Content Engine.

Leave the CFS Exporter shut down until you upgrade CFS to version 4.5.1. See *IBM FileNet Content Federation Services Installation and Upgrade Guide* for instructions.

Preventing name conflicts with reserved words

You must verify that the object store names, custom classes, or custom properties in your current version do not conflict with reserved words before you begin the upgrade from version 4.0.1 or 4.5.0.

Verify that your custom classes and properties do not conflict with the reserved words listed in "New Content Engine classes and properties" in *Plan and Prepare Your Environment for IBM FileNet P8* that describes how you must change any custom class or custom property names in your existing object stores that match the reserved names.

Upgrading from version 4.0.1 to 4.5.1

Upgrades from version 4.0.1 use the automatic upgrade facility, which automatically renames any conflicting class or property symbolic name that it detects during the upgrade. The upgrade facility writes warning messages for each renamed class or property symbolic name to the `p8_server_error.log` file on the application server where Content Engine is deployed. It also writes these messages to the automatic upgrade status web page. If you know of naming conflicts with version 4.5.0 classes or properties, it is a best practice to resolve these conflicts before you upgrade to version 4.5.1 of Content Engine.

Upgrading from version 4.5.0 to 4.5.1

Upgrades from version 4.5.0 use the automatic upgrade facility, which will not encounter any conflicting class or property symbolic names.

Related concepts

New Content Engine classes and properties
Learn about new reserved names and how to prevent naming conflicts during an upgrade.

Removing the deployed FileNetEngine application

You must remove the existing FileNetEngine application from the web application server to undeploy or uninstall the application EAR file. Removing the existing version ensures a clean deployment of the upgraded version 4.5.1 Content Engine EAR file.

To remove the deployed FileNetEngine application:

Undeploy or uninstall the Content Engine EAR file.

Option	Description
WebSphere Application Server	Use the administrative console to undeploy the FileNetEngine application, `Engine-ws.ear`.

Clearing the web application server cache

You must clear the cache for the web application server to remove data for the Content Engine version 3.5.2 application to prevent conflicts with the upgraded version.

To clear the cache:

Delete the cache files for you web application server.

Option	Description
WebSphere Application Server	`Program Files/IBM/WebSphere/AppServer/profiles/`*`profilename`*`/temp/`*`profilenameserver1`*`/FileNetEngine/*.*` Where: • *profilename* is profile for Content Engine. • *server_name* is the name of the Content Engine server instance.

Upgrading Content Engine software from version 4.0.1 or 4.5.0

On UNIX application servers, you will upgrade Content Engine Server and install Configuration Manager. On Windows application servers, you will upgrade or install these components as needed: Content Engine Server, Configuration Manager, .NET Clients (including Enterprise Manager), Content Engine Upgrader, or FileNet Deployment Manager. You can run the upgrade interactively or silently.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

FileNet Deployment Manager is an optional tool that 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.

"Upgrading Content Engine software interactively (Windows)" on page 110
You can upgrade the Content Engine software interactively. On Windows application servers, you will upgrade or install these components as needed: Content Engine Server, Configuration Manager, .NET Clients (including Enterprise Manager), Content Engine Upgrader, or FileNet Deployment Manager.

"Upgrading Content Engine software silently (Windows)" on page 110
You can upgrade the Content Engine software silently. On Windows application servers, you will upgrade or install these components as needed: Content Engine Server, Configuration Manager, .NET Clients (including Enterprise Manager), Content Engine Upgrader, or FileNet Deployment Manager.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Content Engine software interactively (Windows)

You can upgrade the Content Engine software interactively. On Windows application servers, you will upgrade or install these components as needed: Content Engine Server, Configuration Manager, .NET Clients (including Enterprise Manager), Content Engine Upgrader, or FileNet Deployment Manager.

You must upgrade the Content Engine components that are in your existing installation, and you can install new components as needed.

To upgrade Content Engine software interactively:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values, filter by **CE Installer** in the **Installation or Configuration Program** column.
2. Run the following command in the software package: `P8CE-4.5.1-WIN.EXE`
3. Complete the installation program screens by using the values in your worksheet.
4. When the installation completes, click **Done** and check for errors in the Content Engine *ce_install_path*`/ce_install_log_4_5_1.txt` error log file, where *ce_install_path* is the location where Content Engine is installed.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Content Engine software silently (Windows)

You can upgrade the Content Engine software silently. On Windows application servers, you will upgrade or install these components as needed: Content Engine Server, Configuration Manager, .NET Clients (including Enterprise Manager), Content Engine Upgrader, or FileNet Deployment Manager.

To upgrade Content Engine software silently:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values, filter by **CE Installer** in the **Installation or Configuration Program** column.
2. Edit the `CE_silent_install.txt` file by providing the values from your worksheet.
3. Start the installation program silently: `P8CE-4.5.1-WIN.EXE -f CE_silent_install.txt -i silent`
4. When the installation completes, check for errors in the Content Engine error log file *ce_install_path*`/ce_install_log_4_5_1.txt`, where *ce_install_path* is the location where Content Engine is installed.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Enterprise Manager

If you did not upgrade Enterprise Manager as part of a Content Engine upgrade, you can upgrade Enterprise Manager interactively or silently.

Be sure that you have available the Installation and Upgrade Worksheet that was filled out during your planning activities.

To upgrade Enterprise Manager:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CE Installer** in the **Installation or Configuration Program** column.
2. On the machine where you are upgrading Enterprise Manager, log on as a member of the Local Administrators group or the Power Users group.
3. Access the Content Engine software package.
4. Start the Enterprise Manager installation.

Table 15. Installation methods

Installation method	Description
To install interactively	1. Run the following command in the software package: `P8CE-4.5.1-Win.exe` 2. Complete the installation program by using the values in your installation worksheet.

To install silently	1. Open the `CE_silent_install.txt` file in the software package for editing.
	2. 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`
	3. Save your edits.
	4. Run the following command in the software package:
	`P8CE-4.5.1-WIN.EXE -f CE_silent_install.txt -i silent`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing Content Engine software updates

You must apply any updates, fix packs, or interim fixes for the Content Engine software that have been released.

If no Content Engine software updates are available, skip this procedure.

To install the Content Engine software updates:

Open the readmes for the Content Engine software updates, and perform the installation procedures in the readmes on each Content Engine instance.

Installing the latest Content Search Engine Client files on Content Engine servers

If your environment includes Content Search Engine, you must install the files that Content Engine uses to communicate with Content Search Engine.

Important: With the initial release of Content Engine 4.5.1, the Content Search Engine 4.5.1 client files are included. Therefore, you are not required to manually install these client files on a new Content Engine server. However, if fix packs of these client files become available, install them manually before you use Configuration Manager to configure and deploy Content Engine. For instructions on how to obtain the latest Content Search Engine Client software updates, access the IBM FileNet P8 Platform support site.

You can manually install Content Search Engine Client files either interactively or silently:

1. "Removing the existing Content Search Engine Client 4.0.1 files from Content Engine Server machines"
   Remove any previously installed Content Search Engine Client 4.0.1 files from each Content Engine Server machine.
2. "Collecting current Content Engine deployment data" on page 113
   Content Engine deployment data provides confirmation that installation of Content Search Engine Client files on Content Engine Server machines has succeeded.
3. "Installing Content Engine Search Client files" on page 113
   You can install the Content Search Engine Client files interactively or silently. These files make it possible for the Content Search Engine server component to communicate with the Content Engine server component.

Removing the existing Content Search Engine Client 4.0.1 files from Content Engine Server machines

Remove any previously installed Content Search Engine Client 4.0.1 files from each Content Engine Server machine.

You must explicitly remove any previously installed version 4.0.1 of the Content Search Engine Client files because version 4.5.1 of the Content Search Engine Client installer does not completely remove them. If you have no version 4.0.1 files, then return to the parent topic and complete the task.

Remove the version 4.0.1 Content Search Engine Client files, as appropriate for your operating system:

Option	Description
Windows	Navigate to **Add/Remove Programs** and remove the Content Search Engine Client Updater.

Collecting current Content Engine deployment data

Content Engine deployment data provides confirmation that installation of Content Search Engine Client files on Content Engine Server machines has succeeded.

To collect current Content Engine deployment data:

1. Enter the following address in a Web browser: `http://` *`ce_app_server_machine_name`*`:`*`port`* `/FileNet/Engine` *ce_app_server_machine_name* is the host name of the application server machine on which you are deploying Content Engine. *port* is one of the default port numbers used by the application server:

Option	Description
Application Server Type	Default Port Number
WebSphere	9080

2. Record the following data on the Web page,

Option	Description
Key	Value
Startup Message	Version number of Content Engine
Process Engine	Version number of Process Engine Client files

Installing Content Engine Search Client files

You can install the Content Search Engine Client files interactively or silently. These files make it possible for the Content Search Engine server component to communicate with the Content Engine server component.

"Installing Content Search Engine Client files interactively"
You can install the Content Search Engine Client files interactively by running the installation program on all application server machines where Content Engine Server is installed.

"Installing Content Search Engine Client files silently" on page 114
You can install the Content Search Engine Client files silently by editing a silent input file and running the installation program from a command line. You must install Content Search Engine Client files on all application server machines where Content Engine Server is installed.

Installing Content Search Engine Client files interactively:

You can install the Content Search Engine Client files interactively by running the installation program on all application server machines where Content Engine Server is installed.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install Content Search Engine Client files:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Search Engine Client values, filter by **CSE Client Installer** in the **Installation or Configuration Program** column.
2. 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.
3. On the machine where Content Engine is to be deployed, log on as *ce_install_user*.
4. Locate the Content Search Engine Client installation software. It must be the same version as your Content Search Engine Server software. You must install Content Search Engine and Content Engine software on the same operating system. For example, if Content Engine runs on Windows, locate the Content Search Engine Client installation software that runs on Windows.
5. Start the installation program:

Operating System	Install Program
Windows	`P8CSE-CLIENT-4.5.1-WIN.EXE`

6. Complete the Content Search Engine Client installation screens by using the values in your worksheet.
7. Review the following Content Search Engine Client log files:
   - Windows - *cse_client_install_path*`\CSEClient_install_log_4.5.1.0.log`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing Content Search Engine Client files silently:

You can install the Content Search Engine Client files silently by editing a silent input file and running the installation program from a command line. You must install Content Search Engine Client files on all application server machines where Content Engine Server is installed.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install Content Search Engine Client files:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Search Engine Client values, filter by **CSE Client Installer** in the **Installation or Configuration Program** column.
2. To download the latest software updates, and to determine which of these updates might be required with other components and expansion products, contact your service representative.

3. On the machine where Content Engine is to be deployed, log on as *ce_install_user*.
4. Locate the Content Search Engine Client installation software. It must be the same version as your Content Search Engine Server software. You must install Content Search Engine and Content Engine software on the same operating system. For example, if Content Engine runs on Windows, locate the Content Search Engine Client installation software that runs on Windows.
5. Find the `CSE_silent_install.txt` file within the directory that contains the Content Search Engine Client installation software. Then edit the file to specify the location where you want to install the Content Search Engine Client files.

   The default installation paths are as follows:

   Windows

   `C:\Program Files\IBM\FileNet\ContentEngine\CSEClient`
6. Start the silent installation of Content Search Engine Client files by running the following command.

Operating System	Install Program
Windows	`P8CSE-CLIENT-4.5.1-WIN.EXE –f CSEClient_silent_install.txt –i silent`

7. Review the following Content Search Engine Client log files:
   - Windows - *`cse_client_install_path`*`\CSEClient_install_log_4.5.1.0.log`

Related concepts

Installation and upgrade worksheet

For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Granting directory permissions to the Configuration Manager user

You must grant the file and directory permissions required by *config_mgr_user*, which is the user who runs Configuration Manager.

To grant permissions to the Configuration Manager user:

1. Log on as *ce_install_user* to the server where you installed Content Engine.
2. Grant permissions to the *config_mgr_user* user for the executable file that you intend to use:

Option	Description
Windows - graphical user interface	Grant read and execute permission to `configmgr.exe`
Windows - command line	Grant read and execute permission to `configmgr_cl.exe`

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

   If you do not specify the profile 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 server and log on again as *config_mgr_user*.

Configuring Content Engine instances upgraded from version 4.0.1 or 4.5.0

You can configure your upgraded Content Engine instances with Configuration Manager. You must upgrade the Content Engine bootstrap properties for the upgraded Content Engine instance. A single Content Engine application instance equates to one deployed application on your application server.

Configuration is a multiple step process. You must provide information about your Content Engine application environment, then you apply the settings by running the configuration tasks, and then you deploy the application. You can configure multiple instances before you deploy any of them, or you can configure and deploy one instance at a time.

Remember the following points when you prepare to configure Content Engine:

- (WebSphere Application Server only) For best results, configure no more than one Content Engine instance in a WebSphere profile.
- If you need an accessible software version of Configuration Manager for people with disabilities, use the command-line version of Configuration Manager.
- If your FileNet P8 domain uses multiple non-managed application servers, then you use a copy of a single EAR file with the bootstrap settings on all the servers. After you complete the tasks on the initial server, you copy the EAR file with the bootstrap settings to the additional servers.

  "Configuring upgraded instances by using the graphical user interface"
  You can configure a Content Engine instance by using the graphical user interface version of Configuration Manager.

  "Configuring upgraded instances by using the command line" on page 119
  You can configure an upgraded Content Engine instance on a web application server by using the command-line version of Configuration Manager.

Configuring upgraded instances by using the graphical user interface

You can configure a Content Engine instance by using the graphical user interface version of Configuration Manager.

See the appendix "Configuration Manager user interface reference" on page 234 for complete information about using the graphical user interface. If you need an accessible version of Configuration Manager, use the command-line interface instead of the graphical user interface.

1. "Starting the Configuration Manager graphical user interface" on page 117
   You can start the graphical interface version of Configuration Manager to configure a Content Engine application instance on a web application server.
2. "Changing the password save preference" on page 117
   By default, any passwords that you enter in the graphical user interface in Configuration Manager are not saved to a file. The passwords are stored in memory as long as you have the profile open in Configuration Manager. You can change the password save preference to save the passwords each time that you save your changes to a profile.
3. "Creating an upgrade configuration profile" on page 117
   To upgrade Content Engine Server, you must use Configuration Manager to create an upgrade configuration profile. The profile contains deployment, authentication, and database-connection information.
4. "Configuring the upgraded Content Engine instance" on page 119
   You must provide the bootstrap property values to upgrade Content Engine.

Starting the Configuration Manager graphical user interface:

You can start the graphical interface version of Configuration Manager to configure a Content Engine application instance on a web application server.

To start Configuration Manager:

1. Start Configuration Manager by running one of the following commands, depending on the operating system that runs on the machine where you installed Content Engine:

Option	Description
Windows	Perform one of the following actions: • Double-click the **FileNet Configuration Manager** desktop shortcut. • Click **Start → All Programs → IBM FileNet P8 Platform → FileNet Configuration Manager**. • Run the following command: *ce_install_path*\tools\configure\configmgr.exe

   The first time that you start Configuration Manager, the Welcome is displayed.
2. Select one of the links in the Welcome to learn more or to start working in a wizard, or close the Welcome by clicking the **X** in the tab at the upper left. You can reopen the Welcome later, as needed, from the **Help** menu.

Changing the password save preference:

By default, any passwords that you enter in the graphical user interface in Configuration Manager are not saved to a file. The passwords are stored in memory as long as you have the profile open in Configuration Manager. You can change the password save preference to save the passwords each time that you save your changes to a profile.

When you close the profile, the passwords are erased from memory. Each time that you start Configuration Manager or open a saved profile, you must specify any passwords required by the tasks and for the application server properties before you run the tasks; otherwise, the tasks won't run successfully. If your site security requirements permit you to save passwords to a file, you can change the password save preference setting.

To change the password save preference:

1. Click **Window → Preferences**.
2. Complete one of the following actions:

Option	Description
To save passwords to file	Select the **Save all passwords to file when saving a task or profile** check box.
To prevent writing passwords to file	Clear the **Save all passwords to file when saving a task or profile** check box.

3. Click **OK**.

Creating an upgrade configuration profile:

To upgrade Content Engine Server, you must use Configuration Manager to create an upgrade configuration profile. The profile contains deployment, authentication, and database-connection information.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CM: Create Upgrade Profile** in the Installation or Configuration Program column.
2. Start the Create Upgrade Configuration Profile wizard by using one of the following methods:
   - Select **File → New Upgrade Profile**.
   - Click the **Create a profile for an upgrade installation** icon in the toolbar.
3. Complete the configuration screens by referring to the values in your worksheet.
4. The wizard screens that are displayed depend on whether an existing `Servers.xml` file was found in the *`ce_install_path`*`\ContentEngine` directory, where *ce_install_path* is the location where Content Engine is installed.

Option	Description
Servers.xml contains 1 server	The upgrade wizard reads the server information from the `Servers.xml` file. You must name the profile and provide a location for the profile. If the `Servers.xml` file does not contain information on the deployment type, you must select a deployment type. The wizard creates a profile with the Configure Bootstrap Properties task and the Deploy Application task.
Servers.xml contains more than 1 server	The upgrade wizard reads the server information from the `Servers.xml` file. You must select a single server to upgrade from the list of servers that was found in `Servers.xml`. You must name the profile and provide a location for the profile. If the `Servers.xml` file does not contain information on the deployment type, you must select a deployment type. The wizard creates a profile for the server that you selected with the Configure Bootstrap Properties task and the Deploy Application task.
Servers.xml was not found	The upgrade wizard cannot determine any information about your existing server. You must name the profile, provide a location for the profile, and provide the application server properties. The wizard creates a profile with the Configure Bootstrap Properties task and the Deploy Application task.

5. The upgrade profile is displayed as an icon in the left pane with icons for the Configure Bootstrap and Deploy Application tasks.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Configuring the upgraded Content Engine instance:

You must provide the bootstrap property values to upgrade Content Engine.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CM: Upgrade Bootstrap** in the Installation or Configuration Program column.
2. With your upgrade profile open, right-click **Configure Bootstrap Properties** in the profile pane, and select **Edit Selected Task**.
3. In the **Bootstrap operation** field, select **Upgrade**.
4. In the **Bootstrapped EAR file location** field, enter the fully qualified path to the currently deployed Content Engine EAR file.
5. Select **File** → **Save** to save your changes.
6. Apply the bootstrap property settings by right-clicking **Configure Bootstrap Properties** 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.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Configuring upgraded instances by using the command line

You can configure an upgraded Content Engine instance on a web application server by using the command-line version of Configuration Manager.

Ensure that you have the required accounts and appropriate permissions before you begin.

To configure the upgraded Content Engine instance:

1. Log on to the machine where Content Engine is installed as *config_mgr_user*, which is the Configuration Manager user.
2. Change 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 **generateupgrade** command to generate the upgrade profile. Enter the command on one line without line breaks.

   ```
   configmgr_cl generateupgrade [-appserver app_server_type] -server server_name
    [-deploy deploy_type] -profile myprofile [-silent] [-force] [-help]
   ```

   Where:

   -appserver *appserver_type*
   The **-appserver** *appserver_type* parameter is required only if the

ce_install_path/Servers.xml file does not exist or does not contain any servers. This parameter specifies the type of application server and must be one of the following values: WebSphere, WebLogic, or JBoss.

-server *server_name*
The **-server** *server_name* parameter indicates the server to create the upgrade profile for. Use the **listservers** command to display a list of valid *server_name* values before you run the **generateupgrade** command.

-deploy *deploy_type*
The **-deploy** *deploy_type* parameter is required only if the *ce_install_path*/Servers.xml file does not exist or does not contain the deployment type for the selected server. This parameter specifies the type of Content Engine deployment. If a value for the deployment type exists in the Servers.xml file for the selected server, then the value from the Servers.xml file is used instead the value you specify on the command line.

Select one of the following values: standard, cluster, or netdeploy (network deployment).

Specify standard if you are deploying Content Engine to a stand-alone (that is, a server that is neither managed nor clustered) WebSphere Application Server, Oracle WebLogic Server, or JBoss Application Server.

Specify cluster if you are deploying Content Engine to a WebSphere Application Server, Oracle WebLogic Server, or JBoss Application Server cluster

Specify netdeploy if you are deploying Content Engine to a managedWebSphere Application Server instance. That is, you are using Network Deployment to manage individual servers that are not necessarily in a cluster.

-profile *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
- The absolute path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".

-silent
The **-silent** parameter is optional. When **-silent** is specified, then no prompts or informational messages are displayed in the console, but the

errors are written to the log. Failure messages and validation error messages are displayed as needed, such as messages about missing passwords or invalid port numbers. If you run the execute command to run all the tasks in a profile, and you specify the **-silent** parameter, you must also specify the **-force** parameter.

-help
The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

The `upgrade.xml` file and one directory named for each existing Content Engine instance is created in the profile directory.

Important: If the **generateupgrade** command returns a message saying that an upgrade profile already exists, skip to 4.

4. (IBM WebSphere Application Server or Oracle WebLogic Server only) Set the application server administrator properties:
   a. Navigate to the *myprofile/mycontent_engine_instance* directory.
   b. Open the `applicationserver.xml` file in a text editor.
   c. Set the value for the `ApplicationServerAdminUsername` property.

```
<propertyname="ApplicationServerAdminUsername">
 <value>administrator_user_name </value>
</property>
```

   d. Save your changes and close the file.
   e. Run the **storepasswords** command, which prompts you (respond with `yes` or `no`) to choose whether to encrypt and store the web application server administrator password to the `applicationserver.xml` file. If you choose to not save the password, you will need to edit `applicationserver.xml` by specifying the clear text of the password for the ApplicationServerAdminPassword property.

```
configmgr_cl storepasswords -profile myprofile
```

   f. Repeat this step as needed to edit the application server properties for each Content Engine instance directory that was created.
5. At a command prompt, run the **execute** command.

```
configmgr_cl execute -task configurebootstrap -profile myprofile
```

   Status messages are displayed in the console.
6. Optional: At a command prompt, check the completion status of the task by running the **checkStatus** command.

```
configmgr checkStatus -task configurebootstrap -profile myprofile
```

Related concepts

"Configuration Manager command-line reference" on page 250
Configuration Manager can be run from a command line. This section covers the syntax for the command-line version of Configuration Manager.

Specifying IBM FileNet P8 accounts for upgrades
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing the latest Process Engine client files on Content Engine servers

You must upgrade the Process Engine Client files on all application server machines where Content Engine Server is deployed.

"Upgrading the latest Process Engine client files on Content Engine servers interactively"
The upgrade wizard provides an interactive way to upgrade the Process Engine Client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

"Upgrading the latest Process Engine client files on Content Engine servers silently" on page 123
You can upgrade the Process Engine Client software on the Content Engine server by using a silent input text file and running the upgrade program from the command line. Use the values in your installation and upgrade worksheet to edit the silent input text file before you run the upgrade.

Upgrading the latest Process Engine client files on Content Engine servers interactively

The upgrade wizard provides an interactive way to upgrade the Process Engine Client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To upgrade the Process Engine Client files:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Engine values, filter by **PE Client Installer** in the **Installation or Configuration Program** column.
2. 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.
3. On the machine where Content Engine is to be deployed, log on as *ce_upgrade_user*.
4. 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.
5. Expand the (TAR or ZIP) Process Engine Client install software.
6. Shut down all instances of Enterprise Manager and any other Content Engine client applications, such as Application Engine.
7. Run the command for the installation program according to your operating system.

Operating System	Install Program
Windows	`P8PE-CLIENT-4.5.1-WIN.EXE`

8. Complete the Process Engine client install screens.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading the latest Process Engine client files on Content Engine servers silently

You can upgrade the Process Engine Client software on the Content Engine server by using a silent input text file and running the upgrade program from the command line. Use the values in your installation and upgrade worksheet to edit the silent input text file before you run the upgrade.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install the Process Engine Client files silently:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Engine values, filter by **PE Client Installer** in the **Installation or Configuration Program** column.
2. 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.
3. On the machine where Content Engine is to be deployed, log on as *ce_upgrade_user*.
4. 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.
5. Expand the (TAR or ZIP) Process Engine Client install software.
6. Shut down all instances of Enterprise Manager and any other Content Engine client applications, such as Application Engine.
7. In the expanded install software, open the file `PEClient_silent_install.txt` and edit it as follows: Change the `Variable_CheckboxCE` line to the following line:

   ```
   -V Variable_CheckboxCE="true"
   ```
8. Save your edits.
9. Run one of the commands in the following table to perform the silent install:

Operating System	Install Program
Windows	`P8PE-CLIENT-4.5.1-WIN.EXE -silent -options "PEClient_silent_install.txt"`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Deploying upgraded Content Engine instances

You must deploy the upgradedContent Engine on the web application server. Deploying makes the Content Engine application available for use.

Restriction: Use the command-line version of Configuration Manager if any of these conditions is true:

- You need an accessible software version of Configuration Manager for people with disabilities to use.

  "Deploying upgraded instances by using the graphical user interface"
  You can deploy an upgraded Content Engine instance on the web application server by using the graphical user interface version of Configuration Manager. Deploying makes the Content Engine application available for use.

  "Deploying upgraded instances by using the command line" on page 125
  You can deploy an upgraded Content Engine instance on a web application server by using the command-line version of Configuration Manager. Deploying makes the Content Engine application available for use.

Deploying upgraded instances by using the graphical user interface

You can deploy an upgraded Content Engine instance on the web application server by using the graphical user interface version of Configuration Manager. Deploying makes the Content Engine application available for use.

Make sure that the application server is running or stopped, depending on its type:

Table 16. Required Application Server State

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

For more information about the properties and values you set in the Configuration Manager, roll your mouse over the property name to view the hover help for the property. See the appendix "Configuration Manager user interface reference" on page 234 for complete information about using the graphical user interface.

To deploy Content Engine:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Configuration Manager values, filter by **CM: Deploy Application** in the Installation or Configuration Program column. For general information about the worksheet file, such as filtering details, see "Using the installation and upgrade worksheet" in *Plan and Prepare Your Environment for IBM FileNet P8*.
2. Log on to the application server machine as *config_mgr_user*, the Configuration Manager user.
3. Start Configuration Manager by running one of the following commands, depending on the operating system that runs on the machine where you installed Content Engine:

Option	Description
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\configmgr.exe.

4. If you upgraded your application server and then redeployed Content Engine before upgrading Content Engine, click the **Edit Application Server Properties** icon and correct any obsolete parameter values for your application server type.
5. Select **File → Open Configuration Profile**, and use the information in your worksheet to specify the values for the parameters in the wizard screens.
6. In the Open Configuration Profile wizard, enter the path to the profile for the Content Engine instance, and then click **Finish**.
7. Right-click the **Deploy Application** task in the profile pane (left pane), and select **Edit Selected Task**.
8. Provide the property values for your deployment, by using the values in your worksheet.
9. Select **File → Save**.
10. Enable the task. By default, the **Deploy Application** task is disabled. When the task is disabled, the task name includes the text **(Disabled)**. To enable the task, select **Deploy Application (Disabled)** in the profile pane, and then either right-click and choose **Enable Selected Task** from the context menu, or click the **Enable the Selected Task** icon in the task toolbar.
11. Right-click the **Deploy Application** task in the left pane, and select **Run Task**.

    Running the deploy task can take a few minutes. The task execution status messages are displayed in the Console pane below the deploy application properties.
12. Repeat this procedure as needed for each Content Engine instance.

Related concepts

Specifying IBM FileNet P8 accounts for upgrades
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Deploying upgraded instances by using the command line

You can deploy an upgraded Content Engine instance on a web application server by using the command-line version of Configuration Manager. Deploying makes the Content Engine application available for use.

Ensure that the application server is running or stopped:

Table 17. Required Application Server State

Option	Description
WebSphere Application Server	Start the application server if it is not already running.

See "Configuration Manager command-line reference" on page 250 for syntax details.

To deploy a Content Engine instance from the command line:

1. Log on to the application server machine as the *config_mgr_user* user, which is the Configuration Manager user.
2. If you upgraded the version of your application server, or if you moved it to a new directory or device and then redeployed Content Engine before upgrading Content Engine to version 4.5.1 from version 4.0.1 or 4.5.0, perform 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.
3. Set the current directory to *ce_install_path*`/tools/configure`, where *ce_install_path* is the path where you installed Content Engine.
4. Run the following command to apply the settings in the `deployapplication.xml` file:

   ```
   configmgr execute -task deployapplication -profile myprofile
   ```

   where the *myprofile* value can be one of the following items:
   - The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.
   - The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
   - The absolute path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

   Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.
5. Optional: Run the following command to check the completion status of the DeployApplication task.

   ```
   configmgr checkstatus -task deployapplication -profile myprofile
   ```
6. Repeat this procedure as needed to deploy any additional Content Engine instances.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing storage device source files

If your upgraded IBM FileNet P8 system includes Tivoli Storage Manager or EMC Centera devices, you must install files on the Content Engine server.

"Installing Tivoli Storage Manager client and adding native API library paths (WebSphere)"
The client software and the native API library paths enable you to use Tivoli Storage Manager to access a fixed content device.

"Installing or updating EMC Centera SDK library files" on page 128
EMC Center SDK library files enable access between the IBM FileNet P8 environment and EMC Centera fixed content devices.

Installing Tivoli Storage Manager client and adding native API library paths (WebSphere)

The client software and the native API library paths enable you to use Tivoli Storage Manager to access a fixed content device.

1. "Installing Tivoli Storage Manager client"
   Install the Tivoli Storage Manager client software on each application server where Content Engine is deployed.
2. "Copying the Tivoli Storage Manager API libraries to additional servers"
   If you are running a Content Engine server farm, the Tivoli Storage Manager API libraries must be on each server in the farm.
3. "Creating a shared library definition for Tivoli Storage Manager native API library files" on page 128
   The shared library definition specifies the location of the Tivoli Storage Manager JAR file.

Installing Tivoli Storage Manager client:

Install the Tivoli Storage Manager client software on each application server where Content Engine is deployed.

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

Copying the Tivoli Storage Manager API libraries to additional servers:

If you are running a Content Engine server farm, the Tivoli Storage Manager API libraries must be on each server in the 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. For example:

Option	Description
Windows	`C:\Program Files\IBM\FileNet\ ContentEngine\tsm100`

Creating a shared library definition for Tivoli Storage Manager native API library files:

The shared library definition specifies the location of the Tivoli Storage Manager JAR file.

1. Log on to the WebSphere administrative console.
2. Create a shared library definition according to the type of deployment (stand-alone or clustered), the version of WebSphere, and the operating system on which WebSphere runs, as shown in the following substeps. For the detailed procedure on creating the shared library, visit http://www.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`.

Installing or updating EMC Centera SDK library files

EMC Center SDK library files enable access between the IBM FileNet P8 environment and EMC Centera fixed content devices.

Update the EMC Centera SDK library files if Centera fixed content devices are in your existing environment or if Centera fixed content devices will be added to your IBM FileNet P8 environment.

1. "Installing EMC Centera SDK version 3.2 library files"
   EMC Center SDK library files enable access between the IBM FileNet P8 environment and EMC Centera fixed content devices.
2. "Configuring EMC Centera SDK environment variables for version 3.2" on page 129
   You must specify values for the environment variables so that Content Engine can access the EMC Centera SDK library files.

Installing EMC Centera SDK version 3.2 library files:

EMC Center SDK library files enable access between the IBM FileNet P8 environment and EMC Centera fixed content devices.

1. Log on to the Content Engine Server machine as *ce_install_user*.
2. Back up or delete any existing EMC Centera SDK library files, which are located in the Default Destination Installation Location column of the following table:

Operating System	Default Destination Installation Location
Windows	`C:\Centera_SDK`

3. The `Centera` directory in the Content Engine software package 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 `Centera` directory

4. On the Content Engine Server machine, navigate within the `Centera` directory (at its copied location) to the `install` subdirectory, which contains the installer script.
5. 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.

Option	Description
Windows	`install.bat C:\Centera_SDK`

6. 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.

Configuring EMC Centera SDK environment variables for version 3.2:

You must specify values for the environment variables so that Content Engine can access the EMC Centera SDK library files.

1. Locate the sample setup script on the Content Engine installation media. The file name of the sample setup script depends on your operating system:

Option	Description
Windows	`setCenteraLibPath.bat`

2. 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

Windows	From:
	`set CENTERA_LIB_PATH=C:\Centera_SDK\lib\32`
	`set PATH=%PATH%;%CENTERA_LIB_PATH%`
	
	to:
	`set CENTERA_LIB_PATH=`*`install_path`*` \lib\32`
	`set PATH=%PATH%;%CENTERA_LIB_PATH`
	
	or:
	`set CENTERA_LIB_PATH=`*`install_path`*` \lib\64`
	`set PATH=%PATH%;%CENTERA_LIB_PATH`

3. 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`

4. Stop and start the application server.

Completing Content Engine post-deployment steps

You must complete several Content Engine post-deployment steps before you can put an IBM FileNet P8 system into production.

Perform one of the following post-deployment procedures in this topic, depending on your application server type, and then perform the remaining verification procedures.

When you deploy Content Engine after upgrading from version 4.0.1 or 4.5.0, an upgrader servlet automatically upgrades the Global Configuration Data (GCD) database and the object stores.

"Completing post-deployment steps (WebSphere Application Server)"
If you are using IBM WebSphere Application Server federated user repositories, you must specify the primary administrative user for the web application server.

Completing post-deployment steps (WebSphere Application Server)

If you are using IBM WebSphere Application Server federated user repositories, you must specify the primary administrative user for the web application server.

To set the administrative user

1. Log in to the WebSphere administrative console.
2. Navigate to **Security → Secure administration, applications, and infrastructure**, and click **Configure**.
3. If you have not already done so, specify a unique user (short name) for the **Primary administrative user name**.

   Important: This name must exist in one of the realms and must be unique.

4. Specify the **Server user identity**. You can specify **Automatically generated server identity**, or specify a user name that exists in one of the repositories. This name must exist in one of the realms and must be unique.
5. Save your changes to the master configuration.
6. Restart the web application server where Content Engine is deployed, as follows:
   - For a stand-alone server, stop and start the application server.
   - For a network deployment on WebSphere Application Server Network Deployment, stop and start the application server whereContent Engine is deployed, including the Deployment Manager and all managed nodes.
   - For a cluster, stop and start the cluster.

Verifying the Content Engine deployment

You can verify that the Content Engine deployment was successful by accessing the IBM FileNet P8 System Health page.

1. Verify the state of Content Engine deployment by browsing to the IBM FileNet P8 System Health page:

   `http://server:port/P8CE/Health`

   where:

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

   port is the WSI port used by the Web application server on the machine where Content Engine is deployed.

   The following table lists an example address for your application server:

Table 18. Example FileNet P8 System Health page address

Application Server Type	Web Page Address
IBM WebSphere Application Server	`http://server:9080/P8CE/Health`

2. Verify that the FileNet P8 System Health page contains the Content Engine instance host name and port number. The FileNet P8 System Health page provides status for the items in the following table.

   Tip: At this point, red icons appear on the page at the left of those entries that do not yet exist. In particular, if you are upgrading from version 3.5.2, a red icon appears before the GCD, directory configurations, object stores, storage areas, and sites entries. Also, if you are upgrading from version 3.5.2, no domain name appears yet in the Domain entry.

Table 19. FileNet P8 System Health page contents

Section	Description
Domain	Displays the FileNet P8 domain name if a domain was found.
Global Configuration Database	Verifies that the GCD contains a valid domain object, that the XA and non-XA data sources are defined and have unique names, and that the bootstrap user name and password are defined. If any of these verification tests fail, then the failed icon is displayed.
Directory Configurations	Verifies that at least one directory service is configured and lists the number of configured directory service providers.
PE Connection Points	Displays the number of Process Engine connection points.
PE Isolated Regions	Displays the number of Process Engine isolated regions.

Table 19. FileNet P8 System Health page contents (continued)

Section	Description
Fixed Content Devices	Lists the number of fixed content devices (FCDs) For each FCD listed, there is at least one associated fixed storage area that is in the open state.
Object Stores	Verifies that at least one object store exists and lists the number of object stores.
Storage Areas	Verifies that at least one storage area is defined, lists the number of storage areas, and the status for each storage area, such as online or offline.
Content Cache Areas	Displays the number of content cache areas.
Sites	Verifies that at least one site is defined and lists the number of sites. For each site listed, at least one virtual server or server instance exists.

3. Optional: Bookmark the FileNet P8 System Health page Web page address in your browser for later use.
4. Browse to the FileNet Engine Web page:

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

   where:

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

   port is the HTTP port used by the application server where Content Engine is deployed.

   The following table lists an example address for your application server:

Table 20. Example FileNet Engine Web page address

Application Server Type	Web Page Address
IBM WebSphere Application Server	http://myserver:9080/FileNet/Engine

5. Verify that the FileNet Engine Web page contains the following information:
   - Verify the value in the **Startup Message** key. The Content Engine build and version (for example, dap451.097), must match the build and version in the *ce_install_path*`/ce_version.txt` file, where *ce_install_path* is the location where the Content Engine software is installed.
   - Verify the value in the **Process Engine** key. The Process Engine Client build and version (for example, pui451.075), must match the build and version in the `version.txt` file in the TAR or ZIP file of the Process Engine Client installation software.
   - Verify that the values for JDBC driver, server instance, operating system, and other properties match the values that you entered when you configured Content Engine.
6. Optional: Bookmark the FileNet Engine Web page in your browser for later use.

Checking the automatic upgrade status for Content Engine data

When you deploy the upgraded Content Engine application on the web application server and start the application, the existing Content Engine data upgrade begins. You can check the progress on the upgrade to confirm that all object stores have been upgraded successfully

To check the status of the automatic data upgrade:

1. Enter the URL for the automatic upgrade status page into your browser.
   `http://server_name:port/FileNet/AutomaticUpgradeStatus`
2. Review the status for the FileNet P8 domain or object store.

Table 21. Automatic upgrade status descriptions

Status	Description
Ready	The FileNet P8 domain or object store is ready for use. No automatic upgrade work was performed since theContent Engine server was started.
Completed	The FileNet P8 domain or object store is ready for use. Automatic upgrade work was performed after the Content Engine server was started. Click **Completed** to view the detailed status for the object store upgrade process. In a multi-server configuration, automatic upgrade work might be in progress on additional servers.
In Progress	The FileNet P8 domain or object store is not available. Automatic upgrade work is currently being performed. The Schema Revision column in the Status for object stores section displays the upgrade phase that was completed. Content Engine version 4.5.1 uses schema revision 15.1.23. Click **Completed** to view the detailed status for the object store upgrade process.
Not Available	The FileNet P8 domain or object store is not available. The Content Engine server cannot determine the status of the object store. The server is still starting the Content Engine application and cannot access the object store to determine its status, or the object store did not load the object store cache. Wait a while for the server to finish starting. If the server cannot load the object store cache, then the object store cannot be upgraded automatically. The automatic upgrade does not work for upgrades from version 3.5.2 to version 4.5.1.
Asynchronous Upgrade In Progress	Object stores only. The object store is available. Automatic upgrade work was completed and additional asynchronous upgrade work is in progress. The work involves tasks that take a long time to complete, usually due to the large number of documents or custom objects in the object store.

Installing the latest Content Engine client files on other IBM FileNet P8 servers (for staged upgrades)

When you upgrade Content Engine 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:

- "Upgrading the Content Engine client files on Process Engine servers" on page 156
- "Installing the latest Content Engine client files on Application Engine servers" on page 179

Important:

- You must install the Content Engine client files for any expansion products that use Content Engine Client files, such as:
  - IBM FileNet Workplace XT
  - IBM InfoSphere Enterprise Records
  - IBM FileNet Business Process Framework
- You must redeploy any components that are web-application-server-based, such as Application Engine, Workplace XT, and InfoSphere Enterprise Records, after you upgrade the Content Engine Client files on the associated machines.

Upgrading Content Search Engine software from version 4.0.1 or 4.5.0

If you used the full-text search feature (CBR) in version 4.0.1 or 4.5.0, to upgrade you must export your current K2 server configurations on each machine, install the new version of Content-Search Engine (Autonomy K2) software, and then import your saved configuration.

1. "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 4.5.1 and is no longer usable in the previous version of the IBM FileNet P8 Platform.
2. "Upgrading Content Search Engine" on page 135
   Upgrade Content Search Engine on all machines running Autonomy K2 software. Upgrade the K2 Master Administration Server first, before upgrading the K2 Administration Servers.

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 4.5.1 and is no longer usable in the previous version of the IBM FileNet P8 Platform.

The index areas are upgraded at the same time as the Content Engine data is upgraded.

To perform an upgrade in a migration scenario, create a duplicate of your IBM FileNet P8 system by performing a backup and then a restore. Using the restored system, complete the migration to 4.5.1. 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.

Upgrading Content Search Engine

Upgrade Content Search Engine on all machines running Autonomy K2 software. Upgrade the K2 Master Administration Server first, before upgrading the K2 Administration Servers.

If you have a multi-server configuration, do not start any K2 services until after all machines have been upgraded.

"Upgrading Content Search Engine software (Windows)"
To upgrade Content Search Engine, you must upgrade the underlying Autonomy K2 software.

"Updating the style file of user fields" on page 139
You must edit the Autonomy K2 style file of user fields to add a data field definition for storing the partitioning value of a document.

Upgrading Content Search Engine software (Windows):

To upgrade Content Search Engine, you must upgrade the underlying Autonomy K2 software.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

Important: If you have a multiserver configuration, do not start any K2 services until after all Content Search Engine servers have been upgraded. You will need to upgrade the Master Administration Server first.

To upgrade Autonomy K2 Server software on Windows:

"Upgrading Content Search Engine interactively (Windows)"
To upgrade Content Search Engine interactively, you run a program wizard.

"Upgrading Content Search Engine silently (Windows)" on page 137
When you upgrade Content Search Engine silently, you run a command in the Content Search Engine software package that references parameters in an installation text file.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Content Search Engine interactively (Windows):

To upgrade Content Search Engine interactively, you run a program wizard.

To upgrade Content Search Engine interactively:

1. Open your completed Installation and Upgrade Worksheet file.

Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Search Engine values, filter by **CSE Installer** in the **Installation or Configuration Program** column.

2. Access the Autonomy K2 machine and log on as *k2_os_user*.
3. Access Windows Services and stop the two Verity K2 services.
4. Copy the IBM FileNet Content Search Engine installation package to the Autonomy K2 machine.
5. Open a command window and change directory to the location of the IBM FileNet Content Search Engine installation package.
6. Run the following commands:

   `backup_k2.bat "verity_install_path" "temporary_location_path"`

   where:

   "verity_install_path" is the path to the `verity` directory in the current installation path.

   "temporary_location_path" is the location in which you want to temporarily back up your Autonomy K2 configuration files, outside of the current installation path, and not used by any other application. 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\IBM\FileNet\ContentEngine\verity" "C:\temp"`
7. (Upgrading from version 4.0.1 only) Access the Windows control panel and remove, in reverse order of installation, each Autonomy-related entry that is listed in the Add or Remove Programs control panel. Ensure that each program has been removed before continuing.

   Important: The order in which you remove the programs 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 start in order to identify the version number. This step removes only the added Service Pack and fix pack updates and does not remove the base Content Search Engine software.
8. (Upgrading from version 4.0.1 only) Complete the manual program removal procedure for Content Search Engine 4.0.1 by removing the K2 Dashboard service:
   a. From a command window, access the following directory: `C:\Progam Files\Filenet\ContentEngine\verity\appserver\bin`.
   b. Enter the following command: `service remove k2`
9. 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.
10. Access the IBM FileNet Content Search Engine installation package.
11. Run the `P8CSE-4.5.1.0-WIN.EXE` file.
12. Complete the Content Search Engine installation program screens by using the values from your worksheet:
13. Review the following Content Search Engine log files for installation errors. The files are located in the `verity` directory of the installation path:

    verity_install_path`\cse_install_log_4_5_1.txt`

    verity_install_path`\vconfig.log`

It is a best practice to review log files even if the Content Search Engine installation program does not indicate any errors. Some errors noted in the log files are benign. If an error is not benign (that is, you cannot subsequently index or search for documents), refer to the log file for help in determining the cause.

14. Access Windows Services and stop the two running Verity K2 services.
15. Open a command window and change directory to the location of the IBM FileNet Content Search Engine installation package.
16. To restore your configuration from the backup files, run the following commands:

    `restore_k2.bat "temporary_location_path" "verity_install_path"`

    where:

    "temporary_location-path" is the temporary path you entered earlier in this procedure when you ran `backup_k2.bat`.

    "verity_install_path" is the path to the `verity` directory in the Autonomy K2 installation path.

    For example: `restore_k2.bat "C:\temp" "C:\Program Files\IBM\FileNet\ ContentEngine\verity"`
17. If you moved collections earlier in this procedure, restore your *collections* directory and *temp* directory to their original locations.
18. For a single-machine configuration, access Windows Services and start the two Autonomy K2 services. For multiserver configurations, do not start the services until all Autonomy K2 servers are upgraded.
19. Access the K2 Dashboard and verify that the services from your previous installation are restored and running.

Related concepts

Installation and upgrade worksheet

For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Content Search Engine silently (Windows):

When you upgrade Content Search Engine silently, you run a command in the Content Search Engine software package that references parameters in an installation text file.

To upgrade Content Search Engine silently:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Content Search Engine values, filter by **CSE Installer** in the **Installation or Configuration Program** column.
2. Access the Autonomy K2 machine and log on as *k2_os_user*.
3. Access Windows Services and stop the two Verity K2 services.
4. Copy the IBM FileNet Content Search Engine installation package to the Autonomy K2 machine.
5. Open a command window and change directory to the location of the IBM FileNet Content Search Engine installation package.
6. Run the following commands:

   `backup_k2.bat "verity_install_path" "temporary_location_path"`

where:

"verity_install_path" is the path to the `verity` directory in the current installation path.

"temporary_location_path" is the location in which you want to temporarily back up your Autonomy K2 configuration files, outside of the current installation path, and not used by any other application. 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\IBM\FileNet\ContentEngine\verity" "C:\temp"`

7. (Upgrading from version 4.0.1 only) Access the Windows control panel and remove, in reverse order of installation, each Autonomy-related entry that is listed in the Add or Remove Programs control panel. Ensure that each program has been removed before continuing.

   Important: The order in which you remove the programs 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 start in order to identify the version number. This step removes only the added Service Pack and fix pack updates and does not remove the base Content Search Engine software.
8. (Upgrading from version 4.0.1 only) Complete the manual program removal procedure for Content Search Engine 4.0.1 by removing the K2 Dashboard service:
   a. From a command window, access the following directory: `C:\Progam Files\Filenet\ContentEngine\verity\appserver\bin`.
   b. Enter the following command: `service remove k2`
9. 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.
10. Access the IBM FileNet Content Search Engine installation package.
11. Edit the `CSE_silent_install.txt` file to reflect the appropriate responses for your installation by using the values from your worksheet.
12. Start the Autonomy K2 Master Administration server installer by running the following command:

    ```
    P8CSE-4.5.1.0-WIN.EXE -f CSE_silent_install.txt -i silent
    ```

    Important: Ensure that 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 installation path:

    verity_install_path`\cse_install_log_4_5_1.txt`

    verity_install_path`\vconfig.log`

    It is a best practice to review log files even if the Content Search Engine installation program does not indicate any errors. Some errors noted in the log files are benign. If an error is not benign (that is, you cannot subsequently index or search for documents), refer to the log file for help in determining the cause.
14. Access Windows Services and stop the two running Verity K2 services.
15. Open a command window and change directory to the location of the IBM FileNet Content Search Engine installation package.

16. To restore your configuration from the backup files, run the following commands:

    `restore_k2.bat "temporary_location_path" "verity_install_path"`

    where:

    "temporary_location-path" is the temporary path you entered earlier in this procedure when you ran `backup_k2.bat`.

    "verity_install_path" is the path to the `verity` directory in the Autonomy K2 installation path.

    For example: `restore_k2.bat "C:\temp" "C:\Program Files\IBM\FileNet\ ContentEngine\verity"`
17. If you moved collections earlier in this procedure, restore your *collections* directory and *temp* directory to their original locations.
18. For a single-machine configuration, access Windows Services and start the two Autonomy K2 services. For multiserver configurations, do not start the services until all Autonomy K2 servers are upgraded.
19. Access the K2 Dashboard and verify that the services from your previous installation are restored and running.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Updating the style file of user fields:

You must edit the Autonomy K2 style file of user fields to add a data field definition for storing the partitioning value of a document.

To edit the style file:

1. Navigate to the directory in the Content Search Engine software that contains the `style.ufl` file:

   Windows

   verity_install_path`\data\stylesets\FileNet_FileSystem_PushAPI`
2. Open the Autonomy K2 style file of user fields, `style.ufl`, for editing.
3. If it is not already present, add the CEMP definition at the bottom of the file:

```
data-table: fce
{
fixwidth: cemp_partition_date 4 unsigned-integer
}
```

4. Save your edits and close the file.

Upgrading and configuring Process Engine

Upgrade the Process Engine by performing several pre-upgrade steps, installing the Process Engine software and performing multiple post-upgrade steps.

Important: Before you start to upgrade the Process Engine software, ensure that you are at the correct version and fix pack level, as indicated in *Plan and Prepare Your Environment for IBM FileNet P8*.

The pre-upgrade and post-upgrade steps you perform will depend on which version of Process Engine software you are upgrading from.

1. "Completing 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.
2. "Upgrading Process Engine" on page 149
   Upgrade Process Engine software either interactively or silently.
3. "Upgrading the Content Engine client files on Process Engine servers" on page 156
   Installing or upgrading the Content Engine Client files on all Process Engine enables communication between the Content Engine and the Process Engine. For upgrades from 4.0, you must first remove the Content Engine Client files before upgrading them.
4. "Completing post-upgrade Process Engine configuration" on page 160
   You must perform several procedures to complete the upgrade of all Process Engine data and objects. The steps vary depending on what release you are upgrading from.
5. "Installing Process Engine software updates" on page 169
   After installing Process Engine, software updates such as fix packs or interim fixes might also be required.
6. "Installing the latest Process Engine client files on other IBM FileNet P8 servers (for staged upgrades)" on page 169
   When you upgrade Process Engine server software, you must also upgrade the associated Process Engine Client files installed on other machines running FileNet P8 components, for example, on Content Engine and Application Engine servers.

Related information

General requirements for all FileNet P8 Platform systems
Check to make sure your software is at the correct fix pack level before you upgrade.

Completing 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.

"Completing pre-upgrade steps for upgrades from Process Engine Version 3.5" on page 142
Verify that prerequisites have been completed and run a number of pre-upgrade steps before upgrading Process Engine software from Version 3.5.

"Completing pre-upgrade steps for upgrades from Process Engine 4.0 or 4.5" on page 147

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Verify that prerequisites have been completed and run a number of pre-upgrade steps before upgrading Process Engine software from Version 4.0 or 4.5.

Completing pre-upgrade steps for upgrades from Process Engine Version 3.5

Verify that prerequisites have been completed and run a number of pre-upgrade steps before upgrading Process Engine software from Version 3.5.

- Verify that you have a current backup of the Process Engine and Process Engine database.
- Verify that you have run the **vwverify** command on all regions to repair any inconsistencies between database queues and rosters.
- Verify that you have reconciled the Process Engine user security information. This reconciliation and repair of inconsistencies discussed above were a part of the steps described in Preparing Process Engine for upgrade in the Planning guide.
- Determine when to run the upgrade SQL script for Oracle databases. This script must be run by using one of the following methods:
  - Run the script manually before you run the Process Engine installation program.
  - Run the script automatically from the Process Engine installation program, which allows the installation program to prompt for the sys password for Oracle in an xterm window.
  - Run the script automatically from the Process Engine installation program, by running silently using operating system authentication. Use operating system authentication only in a trusted environment or when configured with a local 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.

  Important: 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 by using the procedures in "Completing post-upgrade Process Engine configuration" on page 160.
- 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 Process Analyzer is installed, complete the steps in Verifying that all Process Engine 3.5 events have been transmitted and Verifying that all Process Analyzer 3.5 events have been published before purging event logs and statistics records.

1. "Updating all isolated regions" on page 143
   Update all isolated regions before upgrading the Process Engine software by performing a transfer of the `upgrade.cdl` file. This assures that there are no pending transfers.
2. "Completing pre-upgrade steps for Process Analyzer installations" on page 143
   For Process Analyzer production installations, perform the following tasks before upgrading Process Engine software from version 3.5 to 4.5.1.

3. "Purging event logs and statistics records" on page 145
   Optionally, purge event log and statistics records before you upgrade to reduce the time necessary for the database upgrade to complete.
4. "Stopping all Process Engine-related services and applications (Windows)" on page 146
   Stop all Process Engine-related services and applications before upgrading from version 3.5.

Related tasks

Preparing Process Engine for upgrade
For more information about preparing to upgrade, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Updating all isolated regions

Update all isolated regions before upgrading the Process Engine software by performing a transfer of the `upgrade.cdl` file. This assures that there are no pending transfers.

1. Restart the Process Engine software by entering the following command:
   `initfnsw -y restart`
2. Save any custom settings for CE_Operations including the login and password for the adaptor and any user exposed data fields.
3. Change directories to the following location of the *upgrade.cdl* file, depending on your operating system:

Option	Description
Windows	`\fnsw_loc\sd`

4. Initiate a transfer on all working isolated regions by entering the following command: `vwtfer -o upgrade.cdl -r XXX`
   where -r XXX indicates a region number for a single working region.
5. At the prompt, log on as *pe_service_user*.
6. Repeat for every isolated region.
7. Restore the custom settings for CE_Operations saved before running the transfer. You will need to restore these custom settings again after competing the steps in "Updating the Process Engine security" on page 162.

Completing pre-upgrade steps for Process Analyzer installations

For Process Analyzer production installations, perform the following tasks before upgrading Process Engine software from version 3.5 to 4.5.1.

1. "Verifying that all Process Analyzer 3.5 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.
2. "Verifying that all Process Engine 3.5 events have been transmitted to Process Analyzer" on page 144
   The steps in this procedure apply only if you are using a production Process Analyzer, they are not necessary for a simulation Process Analyzer.

Verifying that all Process Analyzer 3.5 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.

Verifying that all Process Engine 3.5 events have been transmitted to Process Analyzer:

The steps in this procedure apply only if you are using a production Process Analyzer, they are not necessary for a simulation Process Analyzer.

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 by 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 run a query on the Process Engine database by using the converted date/time value as one parameter in the SQL query.

To verify that all Process Engine 3.5 events have been transmitted to Process Analyzer 3.5:

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. Complete 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, run 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. Enter the following at the **vwtool** prompt:

      ```
      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 ran on Process Analyzer VMAEDM in 3a on page 144. (for example, 09/11/2006 16:23:59). Your input must match the format of the current system mask from 3d 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, run 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, by 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:

   physical_table name is the table name from 3k.

   The *PAInstallDate* is the number returned in 3f.

Note that the physical table name must be preceeded 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.

Purging event logs and statistics records

Optionally, purge event log and statistics records before you upgrade to reduce the time necessary for the database upgrade to complete.

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 reduce the amount of time necessary for the upgrade to complete. Purging these records can take a significant amount of time, so plan this activity accordingly.

Run the command by logging on with the following service user name: *pe_service_user*.
The following examples show the **vwlog** command syntax. If you use Process Analyzer, do not use the `-P` option when you purge logging records.

Table 22. vwlog command syntax

Description	Command
The following command removes the statistics from the specified isolated region.	`vwlog -X -r region number`
The following command removes all log records from the isolated region. Use this command only if all workflows terminated and you no longer need tracking or milestone information.	`vwlog -L -r region number`

You can use other parameters for the **vwlog** utility to select log records for deletion that meet specific conditions, such as log records for terminated workflows, for tracker related records, and so on. For more information, see the FileNet P8 help topics under **System Administration → Process Engine → Administration → Administrative tools → vwlog**.

Stopping all Process Engine-related services and applications (Windows)

Stop all Process Engine-related services and applications before upgrading from version 3.5.

1. 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. Shut down any active windows displaying Process Engine log files.
5. Enter the following at a command prompt to stop the Process Engine software:
   ```
   initfnsw -y stop
   ```
6. Enter the following at a command prompt after the FileNet P8 software is shut down.
   ```
   killfnsw -D -y -S
   ```

7. If the Process Engine server has IBM Tivoli Monitor software running on it, the Process Engine installation program might be unable to overwrite two Process Engine files during an upgrade. Take the following steps to avoid the issue.
   a. Stop the IBM Tivoli Monitor software.
   b. Rename the following files:
      ```
      C:\fnsw\lib\shobj\sysv.dll
      C:\fnsw\lib\shobj\fn_snmpd.dll
      ```
   c. Restart the IBM Tivoli Monitor software.

Completing pre-upgrade steps for upgrades from Process Engine 4.0 or 4.5

Verify that prerequisites have been completed and run a number of pre-upgrade steps before upgrading Process Engine software from Version 4.0 or 4.5.

- Verify that you have a current backup of the Process Engine and Process Engine database.
- Verify that you have run **vwverify** on all regions to repair any inconsistencies between database queues and rosters.
- Determine when to run 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.
  – automatically, from the Process Engine installation program, allowing the installation program to prompt for the sys password for Oracle in an xterm window.
  – automatically, from the Process Engine installation program, running silently by using operating system authentication. Use operating system authentication only in a trusted environment or when configured with a local database.

"Updating all isolated regions"
Update all isolated regions before upgrading the Process Engine software by performing a transfer of the `upgrade.cdl` file. This assures that there are no pending transfers.

"Purging event logs and statistics records" on page 148
Optionally, purge event log and statistics records before you upgrade to reduce the time necessary for the database upgrade to complete.

"Stopping all Process Engine-related services and applications (Windows)" on page 148
Stop all Process Engine-related services and applications before upgrading from version 4.0 or 4.5.

Related tasks

Preparing Process Engine for upgrade
For more information about preparing to upgrade, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Updating all isolated regions

Update all isolated regions before upgrading the Process Engine software by performing a transfer of the `upgrade.cdl` file. This assures that there are no pending transfers.

1. Restart the Process Engine software by entering the following command:
   ```
   initfnsw -y restart
   ```
2. Save any custom settings for CE_Operations including the login and password for the adaptor and any user exposed data fields.

3. Change directories to the following location of the *upgrade.cdl* file, depending on your operating system:

Option	Description
Windows	`\fnsw_loc\sd`

4. Initiate a transfer on all working isolated regions by entering the following command: `vwtfer -o upgrade.cdl -r XXX`

   where -r XXX indicates a region number for a single working region.
5. At the prompt, log on as *pe_service_user*.
6. Repeat for every isolated region.
7. Restore the custom settings for CE_Operations saved before running the transfer. You will need to restore these custom settings again after competing the steps in "Completing the upgrade from Process Engine 4.0, 4.5.0, or higher" on page 167.

Purging event logs and statistics records

Optionally, purge event log and statistics records before you upgrade to reduce the time necessary for the database upgrade to complete.

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 reduce the amount of time necessary for the upgrade to complete. Purging these records can take a significant amount of time, so plan this activity accordingly.

Run the command by logging on with the following service user name: *pe_service_user*.
The following examples show the **vwlog** command syntax. If you use Process Analyzer, do not use the `-P` option when you purge logging records.

Table 23. vwlog command syntax

Description	Command
The following command removes the statistics from the specified isolated region.	`vwlog -X -r region number`
The following command removes all log records from the isolated region. Use this command only if all workflows terminated and you no longer need tracking or milestone information.	`vwlog -L -r region number`

You can use other parameters for the **vwlog** utility to select log records for deletion that meet specific conditions, such as log records for terminated workflows, for tracker related records, and so on. For more information, see the FileNet P8 help topics under **System Administration** → **Process Engine** → **Administration** → **Administrative tools** → **vwlog**.

Stopping all Process Engine-related services and applications (Windows)

Stop all Process Engine-related services and applications before upgrading from version 4.0 or 4.5.

1. Log on as fnsw (or alias).
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 Process Engine software is shut down.

   ```
   killfnsw -D -y -S
   ```

6. If the Process Engine server has IBM Tivoli Monitor software running on it, the Process Engine installation program might be unable to overwrite two Process Engine files during an upgrade. Take the following steps to avoid the issue.
   a. Stop the IBM Tivoli Monitor software.
   b. Rename the following files:

      ```
      C:\fnsw\lib\shobj\sysv.dll
      C:\fnsw\lib\shobj\fn_snmpd.dll
      ```

   c. Restart the IBM Tivoli Monitor software.

Upgrading Process Engine

Upgrade Process Engine software either interactively or silently.

"Upgrading Process Engine interactively"
Several Process Engine upgrade screens will display only if the upgrade is from Process Engine version 3.5. Those screens are noted in the Installation and Upgrade Worksheet.

"Upgrading Process Engine silently" on page 152
Modify the silent installation response file according to the values in the installation worksheet before upgrading the software.

Upgrading Process Engine interactively

Several Process Engine upgrade screens will display only if the upgrade is from Process Engine version 3.5. Those screens are noted in the Installation and Upgrade Worksheet.

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

To verify the database connection:

1. "Verifying the Process Engine database connection" on page 150
   Verify the ability to connect to the Process Engine database. The Process Engine installation program will connect to the database during software installation.
2. "Upgrading Process Engine interactively" on page 150
3. "Setting the f_maint and f_sw passwords" on page 152
   Set or reset the passwords for the f_sw and f_maint users,. This will verify that the encrypted version matches the database or operating system version of the passwords.

Verifying the Process Engine database connection

Verify the ability to connect to the Process Engine database. The Process Engine installation program will connect to the database during software installation.

"Verifying the Process Engine database connection (Oracle)"
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 run the SQL scripts.

Verifying the Process Engine database connection (Oracle):

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 run 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.

To verify the Process Engine database connection:

1. Run the following at a command prompt on the Process Engine:

   ```
   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.
   - *HQVWBUCS* is the database server name.
   - *10.2.0.2.0* is the Oracle server version.

Upgrading Process Engine interactively

Several Process Engine upgrade screens will display only if the upgrade is from Process Engine version 3.5. Those screens are noted in the Installation and Upgrade Worksheet.

"Upgrading the Process Engine software interactively (Windows)"
You can upgrade the Process Engine by using the Process Engine installation wizard.

Upgrading the Process Engine software interactively (Windows):

You can upgrade the Process Engine by using the Process Engine installation wizard.

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Process Engine values, filter by **PE Installer** in the **Installation or Configuration Program** column.
2. Log on as *fnsw*.
3. Navigate to the Process Engine software package, and start the `P8PE-4.5.1-WIN.exe` installation program. 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
   4.5.1\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. Check for any `.log` files that were generated when the upgrade program ran. The files could be in any of the following locations, depending on whether the upgrade was successful and, if not, where errors occurred. Correct any errors or failures indicated before proceeding to the next step.
   - `C:\Program Files\IBM\FileNet\PE\PE451_setup.log`
   - `C:\Program Files\IBM\FileNet\PE`
   - `C:\FNSW\tmp_installer`
   - `C:\Program Files\IBM\FileNet\IS\mini_installer.log`, Windows Event logs, and log files under `\FNSW_LOC\logs`
   - For 64-bit Windows, these paths will be `C:\Program Files(x86)\..`
5. Start the following services:
   - IMS ControlService
   - Process Engine Services Manager

Related concepts

Specifying accounts
For details on accounts and required permissions, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Setting the f_maint and f_sw passwords

Set or reset the passwords for the f_sw and f_maint users,. This will verify that the encrypted version matches the database or operating system version of the passwords.

"Setting the f_maint and f_sw passwords (Oracle and Microsoft SQL Server)"
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 Microsoft SQL Server database. The encrypted password and the database user's passwords must match.

Setting the f_maint and f_sw passwords (Oracle and Microsoft SQL Server):

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 Microsoft SQL Server database. The encrypted password and the database user's passwords must match.

To verify that the passwords match between the encrypted file and the Oracle or SQL Server database, use the following procedure to start the Xdbconnect utility. Xdbconnect works only if the passwords in the encrypted file and the database match.

You must change the passwords for the f_maint and f_sw users. For Oracle and Microsoft SQL Server databases, both the encrypted file and the database passwords are updated.

On UNIX, several Process Engine utilities are configured with setuid *fnsw.* (or its alias), and will therefore run with that user's X Window settings, regardless of which user is currently logged on.

1. Log on as the fnsw user.
2. Start the Database Server Connect application by running the following command: `Xdbconnect -r`
3. Change the primary password for the users f_sw and f_maint to match the database password.
4. Exit the application.

Upgrading Process Engine silently

Modify the silent installation response file according to the values in the installation worksheet before upgrading the software.

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

1. "Verifying the Process Engine database connection"
   Verify the ability to connect to the Process Engine database. The Process Engine installation program will connect to the database during software installation.
2. "Upgrading Process Engine silently" on page 154
3. "Setting the f_maint and f_sw passwords" on page 155
   Set or reset the passwords for the f_sw and f_maint users,. This will verify that the encrypted version matches the database or operating system version of the passwords.

Verifying the Process Engine database connection

Verify the ability to connect to the Process Engine database. The Process Engine installation program will connect to the database during software installation.

"Verifying the Process Engine database connection (Oracle)"
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 run the SQL scripts.

Verifying the Process Engine database connection (Oracle):

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 run 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.

To verify the Process Engine database connection:

1. Run the following at a command prompt on the Process Engine:
   ```
   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.

- *HQVWBUCS* is the database server name.
- *10.2.0.2.0* is the Oracle server version.

Upgrading Process Engine silently

Modify the silent installation response file according to the values in the installation worksheet before upgrading the software.

"Upgrading the Process Engine software silently (Windows)"
Take the following steps to silently upgrade Process Engine.

"Encrypting passwords for Process Engine" on page 155
Several passwords are required to configure Process Engine components. To accommodate your security requirements, you can encrypt these passwords before you enter them into the configuration files.

Upgrading the Process Engine software silently (Windows):

Take the following steps to silently upgrade Process Engine.

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Process Engine values, filter by **PE Installer** in the **Installation or Configuration Program** column.
2. Log on as *fnsw*.
3. Navigate to the Process Engine software package.
4. Edit the `PE_silent_install.txt` file to reflect the appropriate responses for your installation. All passwords in the response file must be encrypted.
5. Save the edited response file to your temporary directory.
6. Navigate to the temporary directory on the local disk.
7. Open a command prompt and start the installation program:
   ```
   P8PE-4.5.1-WIN.exe -silent -options PE_silent_install.txt
   ```
8. Check for any `.log` files that were generated when the upgrade program ran. The files could be in any of the following locations, depending on whether the upgrade was successful and, if not, where errors occurred. Correct any errors or failures indicated before proceeding to the next step.
   - `C:\Program Files\IBM\FileNet\PE\PE451_setup.log`
   - `C:\Program Files\IBM\FileNet\PE`
   - `C:\FNSW\tmp_installer`
   - `C:\Program Files\IBM\FileNet\IS\mini_installer.log`, Windows Event logs, and log files under `\FNSW_LOC\logs`
   - For 64-bit Windows, these paths will be `C:\Program Files(x86)\..`
9. Start the following services:
   - IMS ControlService
   - Process Engine Services Manager

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Related tasks

"Encrypting passwords for Process Engine"
Several passwords are required to configure Process Engine components. To accommodate your security requirements, you can encrypt these passwords before you enter them into the configuration files.

Encrypting passwords for Process Engine:

Several passwords are required to configure Process Engine components. To accommodate your security requirements, you can encrypt these passwords before you enter them into the configuration files.

Ensure that Java is installed and that the location to your Java runtime environment (JRE) is in your PATH environment variable.

1. Copy the following files from the `\Tools` directory on the installation media for Process Engine software to a local drive:
   - `fnencryptutils` - an executable .jar file
   - `RunEncryptApp` - a batch file
2. Run one of the following executable files to start the password application:

Option	Description
Windows	`RunEncryptApp.bat`

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.

Related tasks

"Upgrading the Process Engine software silently (Windows)" on page 154
Take the following steps to silently upgrade Process Engine.

Setting the f_maint and f_sw passwords

Set or reset the passwords for the f_sw and f_maint users,. This will verify that the encrypted version matches the database or operating system version of the passwords.

"Setting the f_maint and f_sw passwords (Oracle and Microsoft SQL Server)"
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 Microsoft SQL Server database. The encrypted password and the database user's passwords must match.

Setting the f_maint and f_sw passwords (Oracle and Microsoft SQL Server):

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 Microsoft SQL Server database. The encrypted password and the database user's passwords must match.

To verify that the passwords match between the encrypted file and the Oracle or SQL Server database, use the following procedure to start the Xdbconnect utility. Xdbconnect works only if the passwords in the encrypted file and the database match.

You must change the passwords for the f_maint and f_sw users. For Oracle and Microsoft SQL Server databases, both the encrypted file and the database passwords are updated.

On UNIX, several Process Engine utilities are configured with setuid *fnsw.* (or its alias), and will therefore run with that user's X Window settings, regardless of which user is currently logged on.

1. Log on as the fnsw user.
2. Start the Database Server Connect application by running the following command: `Xdbconnect -r`
3. Change the primary password for the users f_sw and f_maint to match the database password.
4. Exit the application.

Upgrading the Content Engine client files on Process Engine servers

Installing or upgrading the Content Engine Client files on all Process Engine enables communication between the Content Engine and the Process Engine. For upgrades from 4.0, you must first remove the Content Engine Client files before upgrading them.

1. "Uninstalling Content Engine client 4.0.x instances"
   If you have the 4.0 version of the Content Engine client files installed, you must remove them before you run the upgrade installation to version 4.5.1. You must remove the 4.0 Content Engine client file for all Process Engine server machines.
2. "Upgrading the Content Engine client files" on page 157
   Installing or upgrading the Content Engine client files on all Process Engine enables communication between the Content Engine and the Process Engine. You can install these files interactively by using the installation wizard, or silently by using the command line and a silent input file.

Uninstalling Content Engine client 4.0.x instances

If you have the 4.0 version of the Content Engine client files installed, you must remove them before you run the upgrade installation to version 4.5.1. You must remove the 4.0 Content Engine client file for all Process Engine server machines.

"Uninstalling Content Engine Client 4.0.x instances on Windows"
You can use the Microsoft Windows Control Panel to remove the 4.0 version of the Content Engine Client files from your Windows Process Engine Server machines.

Uninstalling Content Engine Client 4.0.x instances on Windows

You can use the Microsoft Windows Control Panel to remove the 4.0 version of the Content Engine Client files from your Windows Process Engine Server machines.

Depending on the Content Engine client fix pack versions that you have installed, you might have more than one instance of the Content Engine client 4.0 installed.

Additionally, the version 4.0 Content Engine client installer supported installing multiple instance of the Content Engine client on the same server. You must uninstall all instances before upgrading to the 4.5.1 version of Content Engine client.

1. Locate and uninstall all instances of the Content Engine client on the Process Engine server.
2. On the Process Engine, select **Start → Settings → Control Panel → Add/Remove Programs** .
3. 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.
4. Click **Change/Remove** to start the uninstaller.
5. In the Uninstall IBM FileNet Client Installer screen, click **Next**.
6. In the Select Components screen, select **Complete Uninstall**. Click **Next**.
7. In the Uninstall Complete screen, click **Done**.
8. Repeat the steps for each additional instance of *Content Engine Client Updater* or *IBM FileNet Content Engine Client Installer* listed in Add/Remove Programs list.

Upgrading the Content Engine client files

Installing or upgrading the Content Engine client files on all Process Engine enables communication between the Content Engine and the Process Engine. You can install these files interactively by using the installation wizard, or silently by using the command line and a silent input file.

"Upgrading the latest Content Engine client files on Process Engine servers interactively"
The installation wizard provides an interactive way to install the Content Engine client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

"Upgrading the latest Content Engine client files on Process Engine servers silently" on page 158
The command line method provides a way to silently install the Content Engine client files. You can use the values in your installation worksheet to edit the silent input text file before you run the installation.

Related concepts

Installation and Upgrade Worksheet
For more information about the Content Engine parameter values, see *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading the latest Content Engine client files on Process Engine servers interactively

The installation wizard provides an interactive way to install the Content Engine client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install the Content Engine client files:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Engine values, filter by **CE Client Installer** in the **Installation or Configuration Program** column.
2. 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.
3. On the machine where Process Engine is installed, log on as fnsw, 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

   The default password for fnsw was BPMtemp1pzwd.
4. Verify that there is a current backup of Process Engine.
5. 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.
6. Access the IBM FileNet P8 Content Engine Client update software.
7. Run one of the commands in the table below, *CE_version* is the version of Content Engine you intend to run, for example, 4.5.1.

Operating System	Install Program
Windows	P8CE-CLIENT-*CE_version* -WIN.EXE

8. Complete the installation program wizard by using the values from your worksheet.
9. When the installation completes, check the Content Engine Client log file for errors. The path to the log file depends on the type of operating system on the machine where you installed the Content Engine Client files:

Operating System	Path to Log File
Windows	C:\Program Files\IBM\FileNet\CEClient\ ceclient_install_log_4_5_1.txt

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading the latest Content Engine client files on Process Engine servers silently

The command line method provides a way to silently install the Content Engine client files. You can use the values in your installation worksheet to edit the silent input text file before you run the installation.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install the Content Engine client files:

1. Open your completed Installation and Upgrade Worksheet file.

Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Engine values, filter by **CE Client Installer** in the **Installation or Configuration Program** column.

2. 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.
3. On the machine where Process Engine is installed, log on as fnsw, 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

   The default password for fnsw was BPMtemp1pzwd.
4. Verify that there is a current backup of Process Engine.
5. 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.
6. Make a back up copy of the `CEClient_silent_install.txt` input file.
7. 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.
8. 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:
9. 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.

   CE_version is the version of Content Engine you intend to run, for example, 4.5.1.

   path is the path that contains the installation program.

Operating System	Install Program
Windows	`P8CE-CLIENT-` *`CE_version`* `-WIN.EXE -f` *`path`* `\CEClient.Windows\ CEClient_silent_install.txt -i silent`

10. When the installation completes, check the Content Engine Client log file for errors. The path to the log file depends on the type of operating system on the machine where you installed the Content Engine Client files:

Operating System	Path to Log File
Windows	`C:\Program Files\IBM\FileNet\CEClient\ ceclient_install_log_4_5_1.txt`

11. When the installation completes, check the Content Engine Client log file for errors. The path to the log file depends on the type of operating system on the machine where you installed the Content Engine Client files:

Operating System	Path to Log File
Windows	`C:\Program Files\IBM\FileNet\CEClient\ ceclient_install_log_4_5_1.txt`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Completing post-upgrade Process Engine configuration

You must perform several procedures to complete the upgrade of all Process Engine data and objects. The steps vary depending on what release you are upgrading from.

"Completing the upgrade from Process Engine 3.5"
Complete the following tasks when upgrading Process Engine from Version 3.5.

"Completing the upgrade from Process Engine 4.0, 4.5.0, or higher" on page 167
Perform the following steps to update a Process Engine database to version 4.5.1. A database update will take place automatically by restarting the software.

Completing the upgrade from Process Engine 3.5

Complete the following tasks when upgrading Process Engine from Version 3.5.

1. "Completing the upgrade from Process Engine 3.5 by database type"
   Complete the following tasks when upgrading Process Engine from Version 3.5.
2. "Removing existing routers in Process Task Manager" on page 162
   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.
3. "Updating the Process Engine security" on page 162
   Update the Process Engine security by using the **vwtaskman** tool.
4. "Configuring contiguous free memory for Process Engine (Windows)" on page 164
   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.
5. "Migrating routers and updating isolated regions" on page 165
   Convert all routers to connection points and assign passwords to any existing isolated regions.
6. "Updating email notification" on page 166
   Enable email notification in order to use it. Process Engine also supports localized email notification.
7. "Backing up the database and restarting software" on page 166
   Back up and restart the database software after upgrading.

Completing the upgrade from Process Engine 3.5 by database type

Complete the following tasks when upgrading Process Engine from Version 3.5.

"Completing the upgrade from Process Engine 3.5 (Oracle)"
Complete the upgrade by initiating an automatic schema change in the database.

Completing the upgrade from Process Engine 3.5 (Oracle):

Complete the upgrade by initiating an automatic schema change in the database.

Important: Throughout this procedure there are multiple software restarts. Run all restarts as documented. Do not start or restart Process Task Manager or other IBM FileNet software unless specifically instructed to do so in the procedures. When you restart Process Task Manager it accesses the database, which must not be done until the database has been upgraded.

To update the Process Engine database objects:

1. After you update the Process Engine software, log onto the Process Engine server.

Option	Description
Windows	Log on as a local administrator.

2. (Windows only) Ensure that the following Process Engine services are started:
   - IMS™ ControlService
   - Process Engine Services Manager
3. Restart the Process Engine software by entering the following command:
   `initfnsw -y restart`
4. 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 tracing when prompted as to whether you want to initiate tracing to capture the changes made to a file. Accept the defaults to trace database access and transfer.

      Important: 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 and updates the schema accordingly.

      Important: If the upgrade fails at this point, you must restore the Process Engine database backup.

      See the FileNet Image Services error log to monitor the progress of the updates and ensure that no errors occur. Check the logs to verify that messages like the following examples are captured:

```
2009/10/17 16:23:43.261 <fnsw> VW/Process (14952) ...
[INFO] VW: Database upgrade successful to version 46,
please follow instructions to perform the next step.

2009/10/17 16:23:43.303 <fnsw> 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.
```

5. Exit vwtool when you get a message that the procedure is complete.
6. Back up the Process Engine database. This backup can serve as a checkpoint if an error occurs later that requires you to restore the database.
7. Restart the Process Engine software. At a Windows command prompt or UNIX command line, enter the following command: `initfnsw -y restart`.

Removing existing routers in Process Task Manager

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.

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.

   You can do this immediately or wait until the corresponding connection points are created. On a Process Engine that is installed on the same server with an Application Engine, the routers cannot be removed until after the Application Engine and Process Engine client files have been upgraded. After 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 this procedure until you have deleted all Process Routers.

Updating the Process Engine security

Update the Process Engine security by using the **vwtaskman** tool.

Before you update the Process Engine security, ensure the following is true:

- Your directory server is running and correctly configured.
- Content Engine 4.5 is running.
- You have the CE_Operations custom settings saved in "Updating all isolated regions" on page 143.

When the Process Task Manager starts, a message is displayed that indicates that routers must be migrated. Routers will be migrated in a subsequent task. 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 → IBM FileNet P8 Platform → Process Engine → Process Task Manager** .
   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*. The service user name should be entered as a short name, not a distinguished name. See the IBM FileNet P8 help topic **System Administration → Enterprise-wide Administration → Process Task Manager → Process Engine → Configure the Process Engine → Security** for details on the user and groups.

d. Click **Apply.** If you get an error applying security settings, click **Close** on the message, correct the problem if noted, and start this procedure again.

   Additional information is available in:

   Windows

   ```
   \fnsw_loc\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 format to the 4.5 format.

   a. Enable tracing when prompted.

   b. 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. Monitor that log by executing:

      ```
      vl -t
      ```

   c. Address any errors that occurred run **vwtool** again. You might be prompted to ignore issues related to the user environment record upgrades. If all users did not successfully migrate to the 4.5 format, look at the messages in the error log and resolve the problems. Examples of the types of resolution required could include fixing a problem with the configuration of the Content Engine and its application server's access to the directory server or creating users in the underlying directory server itself.

      Important: Always 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. If 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.

   If **vwtool** fails with a shared memory error, configure contiguous free memory for Process Engine and try again.

3. Check the error log to verify that the database version number has been updated to 55. 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
   ```

5. This restart of the software starts an automatic transfer of the upgrade.cdl file for all isolated regions. Monitor the syslogs for progress by executing:
   ```
   vl -t
   ```
   If messages in the log indicate that any isolated region failed for phase 2 of the upgrade, the isolated region will be locked and the upgrade will proceed for other isolated regions. Make note of any region numbers where this phase of the upgrade failed.
6. Run the following substeps for any isolated region where the transfer failed.
   a. Start vwtool and enter the following at the prompt:
      ```
      reg XXX
      ```
      where:
      XXX indicates a region where the automatic transfer failed
   b. Enter at the vwtool prompt:
      ```
      unlockreg
      ```
   c. Repeat the unlock for every region that failed.
   d. Change directories to the following location of the *upgrade.cdl* file, depending on your operating system:
      Windows
      ```
      \fnsw_loc\sd
      ```
   e. Initiate a transfer on isolated regions that failed the automatic upgrade by entering the following command:
      ```
      vwtfer -o upgrade.cdl -r XXX
      ```
      where:
      -r XXX indicates a region where the automatic transfer failed
      At the prompt, log on as *pe_service_user*.
   f. Repeat the transfer on every region that failed.
   g. Restore the custom settings for CE_Operations saved before the upgrade in "Updating all isolated regions" on page 143.

Configuring contiguous free memory for Process Engine (Windows)

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.

To configure contiguous free memory for Process Engine:

1. Log on as the fnsw (or alias) user.
2. Restart the Process Engine software. At a Windows command prompt, enter: `initfnsw -y restart`
3. Find the largest available shared memory block and create an executable file with a `.reg` file extension. That file will be run to update the registry to create a new DWORD value.
   a. Create the file by entering the following at a Windows command prompt: `set_shm_address -r shmaddress.reg` where:
      - -r indicates an input file
      - *shmaddress*`.reg` is the name of the file that contains registry information. This file must have the `.reg` file extension.

b. Verify the contents of the output file. The following are examples of the file content.

32-bit Windows

```
[HKEY_LOCAL_MACHINE\SOFTWARE\FileNET\IMS\CurrentVersion]
"StartShmAddress"=dword:12230000
```

64-bit Windows

```
[HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\FileNET\IMS\CurrentVersion]
"StartShmAddress"=dword:12230000
```

4. Run the executable file to update the registry by typing the following at a Windows command: *shmaddress*.reg *shmaddress*.reg is the file you just created.
5. Restart the Process Engine software. At a Windows command prompt, enter: `initfnsw -y restart`
6. Verify the setting that you just applied for the shared memory address by entering the following command at a command prompt: `set_shm_address -v`

Migrating routers and updating isolated regions

Convert all routers to connection points and assign passwords to any existing isolated regions.

1. "Configuring new regions in IBM FileNet Enterprise Manager"
   You must configure an isolated region for each unique Process Engine / isolated region combination. These new regions replace the routers that were removed in earlier steps in the upgrade.
2. "Configuring new regions in Process Task Manager"
   Configure new regions by using the Process Task Manager.

Configuring new regions in IBM FileNet Enterprise Manager:

You must configure an isolated region for each unique Process Engine / isolated region combination. These new regions replace the routers that were removed in earlier steps in the upgrade.

1. Start Enterprise Manager.
2. Navigate to the Process Engine Region IDs node and start the wizard.
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 EngineThis is the network name for 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 must 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 Process Engine Connection Points node, start the wizard, and create new connection points for each region.
6. Close Enterprise Manager.

Configuring new regions in Process Task Manager:

Configure new regions by using the Process Task Manager.

1. Start Process Task Manager on the Process Engine server as follows, depending on your operating system:

Option	Description
Windows	Select **Start** → **Programs** → **IBM FileNet P8 Platform** → **Process Engine** → **Process Task Manager**

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. The password you enter here must match the password entered for the region as it is defined in the Enterprise Manager.

   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:

Option	Description
Windows	`\fnsw_loc\logs\TM_daemon\ PEDirectoryServerConnectionDebug.txt`

Updating email notification

Enable email notification in order to use it. Process Engine also supports localized email notification.

1. Add a language pack for the Default Authoring Locale.

   See the IBM FileNet P8 help topic *System 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.
2. Verify that the Default Authoring Locale is correct (it has defaulted to the operating system's locale).
3. Process Engine supports localized email notification. For details on configuring this, see the *IBM FileNet P8 Non-English Support Guide*.

Related information

Product documentation for IBM FileNet P8 Platform
Download the IBM FIleNet P8 Non-English Support Guide, as well as PDF's of the rest of the IBM FileNet P8 Platform documentation.

Backing up the database and restarting software

Back up and restart the database software after upgrading.

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. Restart the Process Engine software, as follows:

   At a Windows command prompt, or UNIX command line, type the following command:

```
initfnsw -y restart
```

Completing the upgrade from Process Engine 4.0, 4.5.0, or higher

Perform the following steps to update a Process Engine database to version 4.5.1. A database update will take place automatically by restarting the software.

Before starting this procedure, ensure you have the CE_Operations custom settings saved in "Updating all isolated regions" on page 147. To update the database to version 4.5.1:

1. Run the following command to restart the Process Engine:
   ```
   initfnsw -y restart
   ```
2. Monitor the syslogs for progress by executing:
   ```
   vl -t
   ```
3. Verify that messages similar to the following are captured:
   ```
   2009/07/27 15:47:14.632 <fnsw> VW/Process (3564.2552.12 0xdec.9f8)
    ... [INFO]VW (vwcemp):
   Database upgrade successful to version 55
   2009/07/27 15:47:14.679 <fnsw> VW/Process (3564.2552.12 0xdec.9f8)
    ... [INFO]VW (vwcemp):
   Create report 'C:\FNSW_LOC\logs\peconfig\dbUpgradeRpt_55_20090727'
   2009/07/27 15:47:17.240 <fnsw> VW/Process (3564.2552.12 0xdec.9f8)
    ... [INFO]VW (vwcemp):
   Completed report 'C:\FNSW_LOC\logs\peconfig\dbUpgradeRpt_55_20090727'
   2009/07/27 15:47:17.256 <fnsw> VW/Process (3564.2552.12 0xdec.9f8)
    ...VW (vwcemp):
   Completed phase 1 upgrade
   ```
4. Continue to monitor the syslogs for progress by executing:
   ```
   vl -t
   ```

   The software will automatically be restarted again to complete phase 2 of the upgrade process. The automatic restart of the software occurs in the background and will not be reflected in the command window. If the software cannot be restarted, messages will be logged. Manually restart the software if the automatic restart fails.
5. This restart of the software starts an automatic transfer of the upgrade.cdl file for all isolated regions. Monitor the syslogs for progress by executing:
   ```
   vl -t
   ```
6. Verify that messages similar to the following are captured:
   ```
   2009/07/27 15:48:30.488 <fnsw> VW/Process (2040.3388.10 0x7f8.d3c)
    ... [INFO]VW (vwcemp):
   PE upgrade phase 2 completed.
   2009/07/27 15:48:30.503 <fnsw> VW/Process (2040.3388.10 0x7f8.d3c)
   ... [INFO]VW (vwcemp):
   Enable PE daemon processes
   2009/07/27 15:48:30.519 <fnsw> VW/Process (2040.3388.10 0x7f8.d3c)
   ... [INFO]VW (vwcemp):
   Start PE daemon processes ...
   ```

   If messages in the log indicate that any isolated region failed for phase 2 of the upgrade, the isolated region will be locked and the upgrade will proceed for other isolated regions. Make note of any region numbers where this phase of the upgrade failed.
7. Complete the following substeps for any isolated region where the transfer failed.

a. Start vwtool and enter the following at the prompt:

   ```
   reg XXX
   ```

   where:

   XXX indicates a region where the automatic transfer failed

b. Enter at the vwtool prompt:

   ```
   unlockreg
   ```

c. Repeat the unlock for every region that failed.

d. Change directories to the following location of the *upgrade.cdl* file, depending on your operating system:

   Windows

   ```
   \fnsw_loc\sd
   ```

e. Initiate a transfer on isolated regions that failed the automatic upgrade by entering the following command:

   ```
   vwtfer -o upgrade.cdl -r XXX
   ```

   where:

   -r XXX indicates a region where the automatic transfer failed

   At the prompt, log on as *pe_service_user*.

f. Repeat the transfer on every region that failed.

g. Restore the custom settings for CE_Operations saved before the upgrade in "Updating all isolated regions" on page 147.

1. "Configuring contiguous free memory for Process Engine (Windows)"
   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.
2. "Backing up the database and restarting software" on page 169
   Back up and restart the database software after upgrading.

Configuring contiguous free memory for Process Engine (Windows)

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.

To configure contiguous free memory for Process Engine:

1. Log on as the fnsw (or alias) user.
2. Restart the Process Engine software. At a Windows command prompt, enter:
   ```
   initfnsw -y restart
   ```
3. Find the largest available shared memory block and create an executable file with a `.reg` file extension. That file will be run to update the registry to create a new DWORD value.

   a. Create the file by entering the following at a Windows command prompt:
   `set_shm_address -r shmaddress.reg` where:
   - -r indicates an input file
   - *shmaddress*`.reg` is the name of the file that contains registry information. This file must have the `.reg` file extension.

   b. Verify the contents of the output file. The following are examples of the file content.

32-bit Windows

```
[HKEY_LOCAL_MACHINE\SOFTWARE\FileNET\IMS\CurrentVersion]
"StartShmAddress"=dword:12230000
```

64-bit Windows

```
[HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\FileNET\IMS\CurrentVersion]
"StartShmAddress"=dword:12230000
```

4. Run the executable file to update the registry by typing the following at a Windows command: *shmaddress*.reg *shmaddress*.reg is the file you just created.
5. Restart the Process Engine software. At a Windows command prompt, enter: `initfnsw -y restart`
6. Verify the setting that you just applied for the shared memory address by entering the following command at a command prompt: `set_shm_address -v`

Backing up the database and restarting software

Back up and restart the database software after upgrading.

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. Restart the Process Engine software, as follows:

   At a Windows command prompt, or UNIX command line, type the following command:

   ```
   initfnsw -y restart
   ```

Installing Process Engine software updates

After installing Process Engine, software updates such as fix packs or interim fixes might also be required.

If you installed an instance into a high availability environment, perform the procedure on every node.

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 readme files for the Process Engine software updates and perform the installation procedures in the readme files on the Process Engine.

Installing 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 FileNet P8 components, for example, on Content Engine and Application Engine servers.

In a standard upgrade of your FileNet P8 system, you would install these client files in the course of upgrading each respective component.

However, if you are staging your FileNet P8 upgrade over a period of time and not upgrading one or more of the other FileNet P8 components at this time, you must still perform the Process Engine Client install on the other component machines.

- You will have this same client-installation requirement for any expansion products that use Process Engine Client files, such as:
  - IBM FileNet Workplace XT
  - IBM InfoSphere Enterprise Records
  - IBM FileNet Business Process Framework
- You must redeploy any components that are web-application-server based, such as Content Engine, Application Engine, Workplace XT, and FileNet Records Manager after you upgrade the Process Engine Client files on the associated machines.

Upgrading and configuring Application Engine

You can upgrade Application Engine from version 3.5 or version 4.0 to version 4.0.2. The procedures for upgrading Application Engine vary depending on the version that you are upgrading.

Important: Before you start to upgrade the Application Engine software, ensure that you are at the correct version and fix pack level, as indicated in *Plan and Prepare Your Environment for IBM FileNet P8*.

1. "Preparing for Application Engine upgrade" on page 172
   Before you upgrade your Application Engine installation, you must prepare your existing configuration for the upgrade. This preparation includes backing up existing files and undeploying your web application.
2. "Upgrading Application Engine" on page 175
   After you have prepared your existing configuration, you can begin the Application Engine upgrade. The tasks for upgrading Application Engine differ depending on whether you start from version 3.5 or version 4.0.
3. "Installing Application Engine software updates" on page 179
   If any required fix packs and interim fixes exist for Application Engine, you must install these software updates.
4. "Installing the latest Content Engine client files on Application Engine servers" on page 179
   The Content Engine Client software enables communication between the Application Engine and the Content Engine. Install the latest release or fix pack version of the Content Engine Client files on all Application Engine servers.
5. "Installing the latest Process Engine client files on Application Engine servers" on page 183
   The Process Engine Client software enables communication between the Application Engine and the Process Engine. You must install the Process Engine Client files on all Application Engine servers.
6. "Configuring Application Engine upgrades from 3.5" on page 186
   After you complete the Application Engine upgrade from 3.5, you must configure Application Engine files and your application sever to enable communication between Application Engine and Content Engine. You can choose the appropriate configuration tasks for your application server type and environment.
7. "Manually copying custom data" on page 198
   If your custom data was not retained in the upgrade, you must manually copy the data from the version 3.5 or 4.0.1 backup files (`deploy_backup`) to the upgraded directories.
8. "Deploying upgraded instances of Application Engine" on page 198
   After you upgrade and configure Application Engine, deploy your client application, Workplace, on your application server. It might be necessary to re-create the WAR or WAR and EAR files before you deploy.
9. "Completing post-upgrade Application Engine configuration" on page 202
   After you upgrade and deploy your Application Engine instances, you can complete additional configuration. Actions include modifying a configuration file, verifying Workplace sign-in, and establishing the Process Engine connection point.

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Related information

General requirements for all FileNet P8 Platform systems
Check to make sure your software is at the correct fix pack level before you upgrade.

Preparing for Application Engine upgrade

Before you upgrade your Application Engine installation, you must prepare your existing configuration for the upgrade. This preparation includes backing up existing files and undeploying your web application.

- (Upgrades from 3.5 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*.
- Review the steps needed to retain the Application Engine 3.5 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 or 4.0.1 configuration files.
  - During the upgrade, a number of existing configuration files will be moved to the newly created *AE_install_path*/Config/AE directory.
  - As part of the upgrade, the installation program automatically creates a backup of your existing Application Engine 3.5 or 4.0.1 configuration files, appending the suffix .old to the file names.
  - The existing version 3.5 or 4.0.1 Actions.xml and web.xml files will be merged with the 4.0.2 versions during the upgrade.
  - 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 and Upgrade Guide*.

To prepare for the Application Engine upgrade:

1. Log on to the Application Engine server:

Option	Description
Windows	Log on as a member of the local Administrators group or a user with equivalent permissions.

2. (Upgrades from 3.5 only) Verify that the Process Router is stopped.

   Tip: 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 :

Windows

```
routercmd.bat
```

b. Stop the router, if running.

This is the router configured and started as part of the FileNet P8 Platform 3.5 installation. For more information, see the *IBM FileNet P8 Platform 3.5 Installation and Upgrade Guide* task "Start the Process Router."

c. Exit the Process Task Manager.

3. (Windows) 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, right-click the item and click **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. Back up, 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.

Even though the installer automatically creates a backup of your existing Application Engine 3.5 or 4.0.1 configuration files, it is a best practice to back up the following directories to get a complete backup of your deployed system. You might need these files in later steps to retain your 3.5 or 4.0.1 settings. For example, when you copy modified files to the installed Workplace directory and perform the upgrade and configuration of Application Engine,

Option	Description
WebSphere Application Server	1. 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 Your path might vary if you created a new profile or renamed your WAR file. 2. Stop the Workplace application from the WebSphere administrative console. 3. Uninstall the Workplace application from **Enterprise Applications**. 4. Save the changes and stop the WebSphere Application Server. 5. Delete the temp Workplace directory (default: *app_engine_war*) from: *WAS_HOME*/profiles/default/temp/*node_name*/*instance*/app_engine.war

5. Copy modified files to the installed Workplace directory. During the upgrade, the configuration files will be moved from the following directory:

AE_install_path/Workplace/WEB-INF to

AE_install_path/Config/AE

If you have made modifications to any of these files directly in the deployed Workplace directory (app_engine.war for WebSphere Application Server or Workplace.war for JBoss) in your 3.5. or 4.0.1 environment, you must copy the 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.

- actions.xml
- bootstrap.properties
- ClassFilter.xml
- ConfigurableLabels.xml
- containericons.properties
- content_redir.properties
- customobjecticons.properties
- download_redir.properties
- fnsoap.xml
- icons.properties
- InfoPages.xml
- PagingConfiguration.xml
- PolicyProcessors.xml
- PrimaryViews.xml
- PropertiesPages.xml
- SimpleSearch.xml
- SystemsPropertiesView.xml

As part of the upgrade the installation program automatically creates a backup of your existing Application Engine 3.5 or 4.0.1 configuration files, appending the suffix .old to the file names.

- actions.xml.old
- ClassFilter.xml.old
- ConfigurableLabels.xml.old
- containericons.properties.old
- content_redir.properties.old
- icons.properties.old
- SystemsPropertiesView.xml.old
- UpdateActions.xml.old
- UpdateClassFilter.xml.old
- UpdateConfigurableLabels.xml.old
- UpdateProps.xml.old
- UpdateSystemPropertiesView.xml.old
- UpdateWeb.xml.old
- web.xml.old

The backed up files are located in: *AE_install_path*/backup-4_0_2

Related tasks

"Manually copying custom data" on page 198
If your custom data was not retained in the upgrade, you must manually copy the data from the version 3.5 or 4.0.1 backup files (`deploy_backup`) to the upgraded directories.

Upgrading Application Engine

After you have prepared your existing configuration, you can begin the Application Engine upgrade. The tasks for upgrading Application Engine differ depending on whether you start from version 3.5 or version 4.0.

"Upgrading Application Engine from 3.5"
An upgrade from version 3.5 resembles a new install. You can choose to upgrade Application Engine interactively by using the upgrade wizard, or silently by using a silent input file.

"Upgrading Application Engine from 4.0" on page 177
In an upgrade from version 4.0 or later, the upgrade tool verifies that the currently installed version of Application Engine can be upgraded. You can choose to upgrade Application Engine interactively by using the upgrade wizard, or silently by using a silent input file.

Upgrading Application Engine from 3.5

An upgrade from version 3.5 resembles a new install. You can choose to upgrade Application Engine interactively by using the upgrade wizard, or silently by using a silent input file.

- If you plan to install and use the IBM FileNet Workplace XT product, you do not need to install Application Engine.
- To ensure proper functionality and performance, only install one instance of Application Engine per application server (or virtual machine or WebSphere Application Server LPAR). You can, however, deploy multiple instances of a single Application Engine version per application server.
- 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.
- You can install a new Application Engine 4.0.2 server within an existing 4.0 IBM 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.

"Upgrading Application Engine interactively"
You can use the installation wizard to upgrade Application Engine. To complete the upgrade, provide the necessary parameter values to enable the Application Engine client application, Workplace to access the information that is managed by Content Engine.

"Upgrading Application Engine silently" on page 176
You can include the parameters for your Application Engine upgrade in a silent input file, and then run the upgrade from a command line.

Upgrading Application Engine interactively

You can use the installation wizard to upgrade Application Engine. To complete the upgrade, provide the necessary parameter values to enable the Application Engine client application, Workplace to access the information that is managed by Content Engine.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install the Application Engine software interactively:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Engine values, filter by **AE Installer** in the **Installation or Configuration Program** column.
2. Log on to the application server.

Option	Description
Windows	Log on as a member of the local Administrators group or a user with equivalent permissions.

3. Access the IBM FileNet P8 Application Engine 4.0.2.0 installation software.
4. Start the installation program.

Platform	Command
Windows	`P8AE-4.0.2.0-WIN.exe`

5. Complete the Application Engine installer screens by using the values from your worksheet.
6. View the `app_engine_install_log_4_0_2.txt` file, 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.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Application Engine silently

You can include the parameters for your Application Engine upgrade in a silent input file, and then run the upgrade from a command line.

To upgrade the Application Engine software silently:

1. Log on to the application server, as appropriate for your operating system:

Option	Description
Windows	Log on as a member of the local Administrators group or a user with equivalent permissions.

2. Locate the IBM FileNet P8 Application Engine 4.0.2 installation software package, and copy the appropriate `AE_silent_input.txt` file to a local directory.
3. Follow the instructions in the silent input file to edit the file to record the appropriate responses for your installation.
4. Modify all instances of *AE_install_path* in the script as follows.

   Windows

   Change `..\FileNet\AE` to `..\FileNet`

Change `.\\Filenet\\AE` to `..\\FileNet`

5. From a command prompt, navigate to and run the installer.

   Windows

   ```
   P8AE-4.0.2.0-Win.exe -options
   path_to_edited_input_file\AE_silent_input.txt -silent
   ```

6. View the `app_engine_install_log_4_0_2.txt` file, 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.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Application Engine from 4.0

In an upgrade from version 4.0 or later, the upgrade tool verifies that the currently installed version of Application Engine can be upgraded. You can choose to upgrade Application Engine interactively by using the upgrade wizard, or silently by using a silent input file.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

- If you plan to install and use the IBM FileNet Workplace XT product, installing Application Engine is not required.
- 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.
- 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.

  "Upgrading Application Engine from 4.0 interactively"
  You can use the installation wizard to upgrade Application Engine. To complete the upgrade, provide the necessary parameter values to enable the Application Engine client application, Workplace, to access the information that is managed by Content Engine.

  "Upgrading Application Engine from 4.0 silently" on page 178
  You can include the parameters for your Application Engine upgrade in a silent input file, and then run the upgrade from a command line.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Application Engine from 4.0 interactively

You can use the installation wizard to upgrade Application Engine. To complete the upgrade, provide the necessary parameter values to enable the Application Engine client application, Workplace, to access the information that is managed by Content Engine.

To upgrade Application Engine:

1. Open your completed Installation and Upgrade Worksheet file.

Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Application Engine values, filter by **AE Installer** in the **Installation or Configuration Program** column.

2. Log on to the server where Application Engine is installed:

Option	Description
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.

   Although the installing user must have write access to the `/bin` directory, the Application Engine installer does not write to that directory.

3. Access the IBM FileNet Application Engine 4.0.2 installation software.
4. Start the installation program.

Platform	Command
Windows	`P8AE-4.0.2.0-WIN.exe`

5. Complete the Application Engine installation program screens by using the values in your worksheet.

   In addition to the prompts for system-specific information, 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.

6. 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.

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading Application Engine from 4.0 silently

You can include the parameters for your Application Engine upgrade in a silent input file, and then run the upgrade from a command line.

To install the Application Engine software silently:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Application Engine values, filter by **AE Installer** in the **Installation or Configuration Program** column.

2. Log on to the server where Application Engine is installed:

Option	Description
Windows	Log on as a member of the local Administrators group or a user with equivalent permissions.

Although the installing user must have write access to the /bin directory, the Application Engine installer does not write to that directory.

3. Edit the silent input file to reflect the appropriate responses for your upgrade by following the instructions in the file and the values in your worksheet.
4. From a command prompt, navigate to the installer and run it.

   Windows

   ```
   P8AE-4.0.2.0-Win.exe -options
   path_to_edited_input_file\AE_silent_input.txt -silent
   ```

5. View the app_engine_install_log_4_0_2.txt file, 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.

Related concepts

Installation and upgrade worksheet

For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing Application Engine software updates

If any required fix packs and interim fixes exist for Application Engine, you must install these software updates.

To install the Application Engine software updates:

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 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 Application Engine Client files using the subsequent tasks.

Installing the latest Content Engine client files on Application Engine servers

The Content Engine Client software enables communication between the Application Engine and the Content Engine. Install the latest release or fix pack version of the Content Engine Client files on all Application Engine servers.

Important: If you are performing a staged upgrade, and you are upgrading Application Engine before you upgrade Content Engine, it is not necessary to complete this task at this time. When you upgrade Content Engine to version 4.5.1, you must then use this task to run the version 4.5.1 Content Engine Client installer on your Application Engine, and redeploy the Workplace application.

Depending on the Content Engine Client versions that you have installed, you might have more than one instance of the Content Engine Client version 4.0 installed. Additionally, the version 4.0 Content Engine Client installer supported installing multiple instance of the Content Engine Client on the same server. Uninstall all instances before upgrading to Content Engine Client version 4.5.1.

"Removing the Content Engine 4.0 Client files from Application Engine servers"
Before you upgrade the Content Engine Client files to version 4.5.1, you must remove the version 4.0 Client files.

"Installing the latest Content Engine Client files on Application Engine servers interactively" on page 181
The installation wizard provides an interactive way to install the Content Engine Client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

"Installing the Content Engine Client files silently" on page 182
The command line method provides a way to silently install the Content Engine Client files. You can use the values in your installation worksheet to edit the silent input text file before you run the installation.

Removing the Content Engine 4.0 Client files from Application Engine servers

Before you upgrade the Content Engine Client files to version 4.5.1, you must remove the version 4.0 Client files.

If you are performing a staged upgrade, and are upgrading Application Engine before you upgrade Content Engine, it is not necessary to do this task at this time. When you upgrade Content Engine to 4.5, you must then use this task to run the 4.5 Content Engine Client installer on your Application Engine, and redeploy the Workplace application.

Perform the following procedure to identify and uninstall all Content Engine Client version 4.0 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 might have more than one instance of the CE Client 4.0 installed. Additionally, the version 4.0 CE Client installer supported installing multiple instance of the CE Client on the same server. You must uninstall all instances before upgrading to the 4.5 version of CE Client.

"Removing Content Engine 4.0 Client files from Application Engine servers (Windows)"
The Content Engine 4.0 Client installation includes a Windows tool for uninstalling the Client files.

Removing Content Engine 4.0 Client files from Application Engine servers (Windows)

The Content Engine 4.0 Client installation includes a Windows tool for uninstalling the Client files.

To uninstall Content Engine Client 4.0 instances:

1. Select **Start** → **Settings** → **Control Panel** → **Add/Remove Programs**.
2. 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.

3. Click **Change/Remove** to start the uninstaller.
4. In the Uninstall IBM FileNet Content Engine Client Installer screen, click **Next**.
5. In the Select Components screen, select Complete Uninstall. Click **Next**.
6. In the Uninstall Complete screen, click **Done**.
7. Repeat these steps for each additional instance of Content Engine Client updater or installer programs in the **Add/Remove Programs** list.

Installing the latest Content Engine Client files on Application Engine servers interactively

The installation wizard provides an interactive way to install the Content Engine Client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To install the Content Engine Client files interactively:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Engine values, filter by **CE Client Installer** in the **Installation or Configuration Program** column.
2. On the machine where Application Engine is installed, 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 Content Engine Client install software
3. Verify that there is a current backup of the Application Engine.
4. Copy the Content Engine Client installation software from the Content Engine installation software to the temporary directory. The version of the client installation software must match the version of Content Engine.
5. Expand the compressed Content Engine Client installation software file in the temporary directory.
6. Close all instances of Workplace and any other Application Engine client applications. From the application server administrative console, stop and undeploy Application Engine.

Option	Description
WebSphere Application Server	Stop and undeploy the Application Engine Web application.

7. Access the IBM FileNet Content Engine client update software in the temporary directory.
8. Start the installation program by running the following command, where *CE_version* is the version of Content Engine you intend to run, for example, 4.5.1.

Operating System	Install Program
Windows	`P8CE-CLIENT-`*`CE_version`*`-WIN.EXE`

9. Complete the installation screens by using the values from your installation worksheet.
10. When the installation completes, check the Content Engine Client log file for errors. The path to the log file depends on the type of operating system on the machine where you installed the Content Engine Client files:

Operating System	Path to Log File
Windows	`C:\Program Files\IBM\FileNet\CEClient\ceclient_install_log_4_5_1.txt`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing the Content Engine Client files silently

The command line method provides a way to silently install the Content Engine Client files. You can use the values in your installation worksheet to edit the silent input text file before you run the installation.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Content Engine values, filter by **CE Client Installer** in the **Installation or Configuration Program** column.
2. On the machine where Application Engine is installed, 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 Content Engine Client install software
3. Verify that there is a current backup of the Application Engine.
4. Copy the Content Engine Client installation software from the Content Engine installation software to the temporary directory. The version of the client installation software must match the version of Content Engine.
5. Expand the compressed Content Engine Client installation software file in the temporary directory.
6. Close all instances of Workplace and any other Application Engine client applications. From the application server administrative console, stop and undeploy Application Engine.

Option	Description
WebSphere Application Server	Stop and undeploy the Application Engine Web application.

7. Make a backup copy of the `CEClient_silent_install.txt` input file in the temporary directory.
8. 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.

9. Navigate to the temporary directory path containing the Content Engine Client installation program.
10. Start the installation program by running the following command, where:

    CE_version is the version of Content Engine you intend to run, for example, 4.5.1.

    path is the path that contains the installation program.

Operating System	Install Program
Windows	`P8CE-CLIENT-`*`CE_version`*`-WIN.EXE -f `*`path`*`\CEClient.Windows\ CEClient_silent_install.txt -i silent`

11. When the installation completes, check the Content Engine Client log file for errors. The path to the log file depends on the type of operating system on the machine where you installed the Content Engine Client files:

Operating System	Path to Log File
Windows	`C:\Program Files\IBM\FileNet\CEClient\ ceclient_install_log_4_5_1.txt`

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Installing the latest Process Engine client files on Application Engine servers

The Process Engine Client software enables communication between the Application Engine and the Process Engine. You must install the Process Engine Client files on all Application Engine servers.

"Upgrading the latest Process Engine Client files interactively"
The installation wizard provides an interactive way to upgrade the Process Engine Client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

"Upgrading the latest Process Engine Client files silently" on page 184
You can upgrade the Process Engine Client software on the Application Engine by using a silent input text file and running the installation program from the command line. Use the values in your upgrade worksheet to edit the silent input text file before you run the upgrade.

Upgrading the latest Process Engine Client files interactively

The installation wizard provides an interactive way to upgrade the Process Engine Client files. You can use the values you collected on your worksheet to fill in the required value for each field on the wizard screens.

To upgrade the Process Engine Client files:

1. Open your completed Installation and Upgrade Worksheet file.

   Tip: In the worksheet file, verify that the **Data** → **Filter** → **AutoFilter** command is enabled. To view only Process Engine values, filter by **PE Client Installer** in the **Installation or Configuration Program** column.

2. 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.
3. 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.
4. Expand the compressed Process Engine Client install software file 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.
5. The expanded install software contains the Process Engine Client install program specific to the operating system on the machine where Application Engine is deployed.

   To run the program interactively, run one of the commands in the table below, and complete the screens.

Operating System	Install Program
Windows	P8PE-CLIENT-*PE_version*-WIN.EXE

6. For Process Engine upgrades from version 4.0 only, add required JAR files to the Component Manager library. 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:

Option	Description
Windows	`routercmd.bat`

   a. In the Process Task Manager console, under Application Engine, **Component Manager** node, before starting up any existing router, click the **Required** libraries tab.
   b. Click **Add** and browse to `/Router/lib`.
   c. Select the following files to add:

```
ContentExtendedOps.jar
smtp.jar
pe3pt.jar
```

Related concepts

Installation and upgrade worksheet

For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Upgrading the latest Process Engine Client files silently

You can upgrade the Process Engine Client software on the Application Engine by using a silent input text file and running the installation program from the command line. Use the values in your upgrade worksheet to edit the silent input text file before you run the upgrade.

To upgrade the Process Engine Client files:

1. Open your completed Installation and Upgrade Worksheet file.

Tip: In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Process Engine values, filter by **PE Client Installer** in the **Installation or Configuration Program** column.

2. 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.
3. 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.
4. Expand the compressed Process Engine Client install software file 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.
5. The expanded install software contains the Process Engine Client install program specific to the operating system on the machine where Application Engine is deployed.
6. In the expanded install software, open the file `PEClient_silent_install.txt` and change the `Variable_CheckboxAE` line to the following value:

   ```
   -V Variable_CheckboxAE="true"
   ```
7. Choose one of the following commands to run the silent installation:

Operating System	Install Program
Windows	P8PE-CLIENT-*PE_version*-WIN.EXE -silent -options "PEClient_silent_install.txt"

8. For Process Engine upgrades from version 4.0 only, add required JAR files to the Component Manager library. 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:

Option	Description
Windows	`routercmd.bat`

   a. In the Process Task Manager console, under Application Engine, **Component Manager** node, before starting up any existing router, click the **Required** libraries tab.
   b. Click **Add** and browse to `/Router/lib`.
   c. Select the following files to add:

      ```
      ContentExtendedOps.jar
      smtp.jar
      pe3pt.jar
      ```

Related concepts

Installation and upgrade worksheet
For more information about the installation and upgrade worksheet, see the worksheet topics in *Plan and Prepare Your Environment for IBM FileNet P8*.

Configuring Application Engine upgrades from 3.5

After you complete the Application Engine upgrade from 3.5, you must configure Application Engine files and your application sever to enable communication between Application Engine and Content Engine. You can choose the appropriate configuration tasks for your application server type and environment.

"Configuring Application Engine upgrades from 3.5 on WebSphere Application Server"
After you upgrade the Application Engine server from 3.5, you must configure WebSphere Application Server to work with Application Engine. You can also configure changes for optional modes like SSO.

Configuring Application Engine upgrades from 3.5 on WebSphere Application Server

After you upgrade the Application Engine server from 3.5, you must configure WebSphere Application Server to work with Application Engine. You can also configure changes for optional modes like SSO.

"Editing web.xml for container-managed authentication" on page 187
You can choose to use WebSphere Application Server with container-managed authentication. To enable this optional authentication approach, edit the `web.xml` file on the WebSphere Application Server.

"Editing web.xml for SSO" on page 189
You can use SSO with a proxy server in your Application Engine environment. To enable this optional approach, edit the `web.xml` file on the WebSphere Application Server.

"Configuring Java Virtual Machine settings for JAAS login and memory" on page 193
You can use the Java Virtual Machine settings in the WebSphere Application Server to set up JAAS login information for authentication and memory settings for resource usage.

"Configuring Lightweight Third Party Authentication (LTPA)" on page 194
To set up LTPA security, configure settings to match on both the Content Engine application server and the Application Engine application server. If your Application Engine and Content Engine are on the same WebSphere Application Server, it is not necessary to configure LTPA.

"Configuring stand-alone Lightweight Directory Access Protocol (LDAP)" on page 196
To enable LDAP communication between Application Engine and Content Engine, you must configure settings on the WebSphere Application Server.

"Configuring Lightweight Directory Access Protocol (LDAP) for federated repositories" on page 197
If you have a multiple domain environment, configure LDAP settings for federated repositories on the WebSphere Application Server to enable LDAP communication between Application Engine and Content Engine.

Editing web.xml for container-managed authentication

You can choose to use WebSphere Application Server with container-managed authentication. To enable this optional authentication approach, edit the web.xml file on the WebSphere Application Server.

1. Make a backup copy of web.xml.

   AE_install_path/Workplace/WEB-INF/web.xml

2. Open web.xml for editing, search for the parameter challengeProxyEnabled, and set it to false.

```
<param-name>challengeProxyEnabled</param-name>
<param-value> false </param-value>
```

3. Search for the first instance of <web-resource-collection>, and uncomment the <url-pattern> as noted in the file comments below.

```
<web-resource-collection>
<web-resource-name>action</web-resource-name>
<description>Define thecontainer 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>
```

4. Locate the section <auth-constraint>, comment the wild-card (*) <role-name> as noted in the file comments below.

```
<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>
```

5. Locate the section <auth-constraint>, comment the wild-card (*) <role-name> as noted in the file comments below.

```
<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>
```

6. 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>
```

7. Search for the first instance of a <security-constraint> tag, and add the following <security-constraint> tag before that tag.

   Important: Enter the information below 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>
```

8. Save your changes to web.xml and close the file.

Editing web.xml for SSO

You can use SSO with a proxy server in your Application Engine environment. To enable this optional approach, edit the web.xml file on the WebSphere Application Server.

1. Make a backup copy of web.xml.

   AE_install_path/Workplace/WEB-INF/web.xml

2. Open web.xml for editing, search for the parameter challengeProxyEnabled, and set it to false.

```
<param-name>challengeProxyEnabled</param-name>
<param-value> false </param-value>
```

3. Search for the first instance of <web-resource-collection>, and uncomment the <url-pattern> as noted in the file comments below.

```
<web-resource-collection>
<web-resource-name>action</web-resource-name>
<description>Define thecontainer 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>
```

4. Locate the section <auth-constraint>, comment the wild-card (*) <role-name> as noted in the file comments below.

```
<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>
```

5. 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>
```

6. Search for the first instance of a <security-constraint> tag, and add the following <security-constraint> tag before that tag.

   Important: Enter the information below 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>
```

7. 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>
-->
```

8. 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** below):

```
<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 must 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 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>/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 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 and/or used to access Workplace pages.

For example:

```
<param-name>ssoProxySSLPort</param-name>
<param-value>443</param-value>
```

9. Save your changes to `web.xml` and close the file.

Configuring Java Virtual Machine settings for JAAS login and memory

You can use the Java Virtual Machine settings in the WebSphere Application Server to set up JAAS login information for authentication and memory settings for resource usage.

1. Log in to the WebSphere administrative console.
2. Navigate to the Java Virtual Machine settings.

Option	Description
WebSphere Application Server 6.1	**Servers** → **Application Servers** → *server_name* → **Java & Process Management** → **Process Definition** → **Java Virtual Machine**
WebSphere Application Server 7.0	**Servers** → **Server Types** → **WebSphere application servers** → *server_name* > **Java & Process Management** → **Process Definition** → **Java Virtual Machine**

3. In the **Generic JVM arguments** field, add the following entry:

   ```
   -Djava.security.auth.login.config=AE_install_path\CE_API\config\
   jaas.conf.WebSphere
   ```

   Replace *AE_install_path* in the entry above with your actual installation path, such as:

Windows

```
C:\Progra~1\FileNet\AE
```

Your path might be slightly different based on the version of your client installations, or whether you have chosen a custom path for the installation. Verify the location of this file and specify the install path location before you enter the path.

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.

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 described above.

If *AE_install_path* is: `C:\Program Files\FileNet\AE`

use: `C:\Progra~1\FileNet\AE`

4. Set the Initial heap size and Maximum heap size, and save your changes.

   For example, you might set the Initial heap size to 512 and the Maximum heap size to 1024. However, these values vary significantly depending on your machine size.

   Refer to your application server vendor recommendation for Initial heap size and Maximum heap size values. For IBM specific recommendations, see the *IBM FileNet P8 Performance Tuning Guide*.

5. (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, create a new Custom Property:

      `com.ibm.websphere.orb.uniqueServerName`

   b. Set the **Value** to true.

   c. Save your changes.

   d. Restart WebSphere Application Server.

Related information

Product documentation for IBM FileNet P8 Platform
Download the IBM FIleNet P8 Performance Tuning Guide, as well as PDF's of the rest of the IBM FileNet P8 Platform documentation.

Configuring Lightweight Third Party Authentication (LTPA)

To set up LTPA security, configure settings to match on both the Content Engine application server and the Application Engine application server. If your Application Engine and Content Engine are on the same WebSphere Application Server, it is not necessary to configure LTPA.

If you are already using LTPA with your Content Engine application server, export the existing keys and copy the key file to the Application Engine server. Check with your Content Engine administrator.

To configure LTPA, take the following steps:

1. On the Content Engine server, log in to the WebSphere administrative console.
2. Navigate to the LTPA settings page.

Option	Description
WebSphere Application Server 6.1	1. Navigate to **Security > Secure administration, applications, and infrastructure**. 2. From the right side of the panel, select **Authentication Mechanisms and expiration**.
WebSphere Application Server 7.0	1. Navigate to **Security > Global security**. 2. From the right side of the panel, select **LTPA**.

3. Enter a value for the **LTPA timeout** that is larger than the default. For example, if the timeout value is left at the default value of 120 minutes, the LTPA key expires after 2 hours. Users will not be able to log in to Workplace after being logged in for 2 hours.
4. Save your changes.
5. In the box for **Cross-cell single sign-on**, type a password to create the **LTPA password**.

   For password restrictions, see the WebSphere Application Server documentation. If you have already configured Content Engine for LTPA, use the existing password in the Application Engine configuration below.
6. Enter the fully qualified path for the **Key File Name**. For example, `/opt/LTPA/ltpa_key_name`.
7. Click **Export keys**. Verify that a message similar to the following message is displayed: The keys were successfully exported to the file *ltpa_key_name*.
8. Click **OK**, then click **Save changes directly to the master configuration**.
9. Stop and restart WebSphere Application Server.
10. Copy the key file from the Content Engine server location you specified above to a directory on the Application Engine server. For example, `/opt/LTPA/ltpa_key_name`
11. On the Application Engine server, log in to the WebSphere administrative console.
12. Navigate to the LTPA settings page.

Option	Description
WebSphere Application Server 6.1	1. Navigate to **Security > Secure administration, applications, and infrastructure**. 2. From the right side of the panel, select **Authentication Mechanisms and expiration**.
WebSphere Application Server 7.0	1. Navigate to **Security > Global security**. 2. From the right side of the panel, select **LTPA**.

13. Enter a value for the **LTPA timeout** that is larger than the default. For example, if the timeout value is left at the default value of 120 minutes, the LTPA key expires after 2 hours. Users will not be able to log in to Workplace after being logged in for 2 hours.
14. Save your changes.
15. In the box for **Cross-cell single sign-on**, type and confirm the **LTPA password** you created for Content Engine.

    For password restrictions, see the WebSphere Application Server documentation. If you have already configured Content Engine for LTPA, use the existing password in the Application Engine configuration below.
16. Specify the path for the key file that you copied to the Application Engine server. For example, `/opt/LTPA/ltpa_key_name`.
17. Click **Import keys**. Verify that a message similar to the following one is displayed: The keys were successfully imported from the file *ltpa_key_name*.
18. Save your changes.

Configuring stand-alone Lightweight Directory Access Protocol (LDAP)

To enable LDAP communication between Application Engine and Content Engine, you must configure settings on the WebSphere Application Server.

To configure stand-alone Lightweight Directory Access Protocol (LDAP):

1. Open the WebSphere administrative console.
2. Navigate to **Security > Secure administration, applications, and infrastructure**.
3. Disable security using the following Security settings:
   - Clear the **Enable Administrative Security** flag.
   - Clear the **Enable application security** flag.
   - Clear the **Java 2 security** flag.
4. From the bottom of the panel, in the dropdown list called **Available realm definitions**, select **Standalone LDAP registry** and click **Configure**.
5. Configure the LDAP provider to exactly match the corresponding settings on the Content Engine application server.

   Tip: Open the WebSphere administrative console for Content Engine to the same panels to see and copy all settings.
   - Primary administrative user name
   - Select Automatically generated server identity.
   - Type
   - Host
   - Port
   - Base distinguished name (DN)
   - Bind distinguished name (DN)
   - Bind password
6. Configure the LDAP user registry settings to exactly match the corresponding settings on the Content Engine application server.

   Tip: Open the WebSphere administrative console for Content Engine to the same panel to see and copy all settings.
   - User filter

- Group filter
- User ID map
- Group member ID map
- Certificate map mode
- Certificate filter

7. Save these settings.
8. Next to **Available realm definitions**, ensure that **Standalone LDAP registry** is still selected, and click **Set as current**.
9. Re-enable the following Security settings:
   - Select the **Enable Administrative Security** flag.
   - Select the **Enable application security** flag.
   - Clear the **Java 2 security** flag.

   The IBM FileNet P8 Platform utilizes LDAP-based security, and does not support Java 2 security. Enabling Java 2 security will cause unexpected behavior.
10. Save your changes to the master configuration.
11. 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.

Configuring Lightweight Directory Access Protocol (LDAP) for federated repositories

If you have a multiple domain environment, configure LDAP settings for federated repositories on the WebSphere Application Server to enable LDAP communication between Application Engine and Content Engine.

Important: If you are using federated repositories, your WebSphere administrative console user cannot have the same username or ID as a user in the LDAP repository.

To configure Lightweight Directory Access Protocol (LDAP) for federated repositories:

1. Open the WebSphere administrative console.
2. Navigate to the security settings page.

Option	Description
WebSphere Application Server 6.1	Navigate to **Security > Secure administration, applications, and infrastructure**.
WebSphere Application Server 7.0	Navigate to **Security > Global security**.

3. Disable the following Security settings:
   - Clear the **Enable Administrative Security** flag.
   - Clear the **Enable application security** flag.
   - Clear the **Java 2 security** flag.
4. From the bottom of the panel, in the dropdown list called **Available realm definitions**, select **Federated Repositories** and click **Configure**.
5. Configure the LDAP provider to exactly match the corresponding **General Properties** on the Content Engine application server.

Tip: Open the WebSphere administrative console for Content Engine to the same panels to see and copy all settings.

- Realm name
- Primary administrative user name
- Select Automatically generated server identity.
- Ignore case for authorization
- Repositories in the realm

6. Save these settings.
7. Next to **Available realm definitions**, ensure that **Federated repositories** is still selected, and click **Set as current**.
8. Re-enable the following Security settings:
   - Select the **Enable Administrative Security** flag.
   - Select the **Enable application security** flag.
   - Clear the **Java 2 security** flag.

   The IBM FileNet P8 Platform utilizes LDAP-based security, and does not support Java 2 security. Enabling Java 2 security will cause unexpected behavior.
9. Save your changes to the master configuration.
10. Restart the WebSphere instance.
11. Test the connection to the repository.
    a. In the WebSphere administrative console, navigate to **Users and Groups** → **Manage Users**.
    b. Click **Search By User ID** , and enter a known user.
    c. Click **Search**. This should return the user from the configured LDAP repository.

Manually copying custom data

If your custom data was not retained in the upgrade, you must manually copy the data from the version 3.5 or 4.0.1 backup files (`deploy_backup`) to the upgraded directories.

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 "Preparing for Application Engine upgrade."

When you have completed the manual copy of your custom data, deploy the Workplace application.

Related tasks

“Preparing for Application Engine upgrade” on page 172
Before you upgrade your Application Engine installation, you must prepare your existing configuration for the upgrade. This preparation includes backing up existing files and undeploying your web application.

Deploying upgraded instances of Application Engine

After you upgrade and configure Application Engine, deploy your client application, Workplace, on your application server. It might be necessary to re-create the WAR or WAR and EAR files before you deploy.

"Deploying upgraded instances of Application Engine on WebSphere Application Server"
After you upgrade and configure Application Engine, deploy your client application, Workplace, on your WebSphere Application Server. It might be necessary to re-create the WAR or WAR and EAR files before you deploy.

Deploying upgraded instances of Application Engine on WebSphere Application Server

After you upgrade and configure Application Engine, deploy your client application, Workplace, on your WebSphere Application Server. It might be necessary to re-create the WAR or WAR and EAR files before you deploy.

"Re-creating 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 re-create the WAR or EAR file and redeploy your changes.

"Deploying Application Engine" on page 200
The method for deploying Application Engine varies depending on your WebSphere Application Server version.

Re-creating 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 re-create the WAR or EAR file and redeploy your changes.

Remember: Before re-creating the EAR file, you must first re-create the WAR file.

To re-create the WAR or EAR files:

1. Verify that all modified `/Workplace` directory files have been saved.
2. Recreate the `app_engine.war` file by running the script for your platform.

Option	Description
Windows	*AE_install_path*\deploy\create_app_engine_war.bat

3. (For WAR file deployment) Rename the newly recreated `app_engine.war` file to `Workplace.war` or *custom_name*`.war` to create the context root for your application. For 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`.

   Important: You must rename the WAR file every time you regenerate it. The `create_app_engine_war` script will by default create a file with the name `app_engine.war`.

   Important: Do not rename the WAR file if you are using the WAR file to recreate the EAR file for deployment.
4. (For EAR file deployments only) Re-create the `app_engine.ear` file by running the script for your platform.

Option	Description
Windows	*AE_install_path*\deploy\ create_app_engine_ear.bat

Deploying Application Engine

The method for deploying Application Engine varies depending on your WebSphere Application Server version.

"Deploying the application (WebSphere Application Server 6.1)"
To use Workplace as a web application, you must deploy it as an application in the WebSphere 6.1 administrative console. You can specify the context root for the application URL during the deployment.

"Deploying the application (WebSphere Application Server 7.0)" on page 201
To use Workplace as a web application, you must deploy it as an application in the WebSphere 7.0 administrative console. You can specify the context root for the application URL during the deployment.

Deploying the application (WebSphere Application Server 6.1):

To use Workplace as a web application, you must deploy it as an application in the WebSphere 6.1 administrative console. You can specify the context root for the application URL during the deployment.

To deploy Application Engine:

1. Log on to the WebSphere administrative console.
2. Navigate to **Applications > Enterprise Applications > Install**
3. Select the file to deploy.
   - (If the administrative console is running *locally*) Select **Local file system** and enter or browse to the location of the app_engine.war or app_engine.ear file created by the installation program. For example, *AE_install_path*/deploy/app_engine.war or *AE_install_path*/deploy/app_engine.ear. Do not enter the machine name.
   - (If the administrative console is *remote*) Select **Remote file system** and enter the fully-qualified pathname to the app_engine.war or app_engine.ear file. For example, *AE_install_path*/deploy/app_engine.war or *AE_install_path*/deploy/app_engine.ear. Do not enter the machine name.
4. If you are deploying a WAR file, enter the context root.

   Enter Workplace and click **Next** to proceed to deploying a new application.

   Tip: 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. Click **Prompt only when additional information is required**, and click **Next**. Complete the dialogs for installing a new application, using the following settings:

   For **Application name**, enter Workplace, or the name you chose to call the application.

   For **WebServer**, specify the server you are planning to use. Verify that your application name is selected and associated with the correct WebServer.

   For **Map virtual hosts for Web modules**, for virtual host, choose the default_host.

(WAR file deployment only) For **Context root**, specify Workplace, or whatever you want to call the application.

6. Save your configuration.
7. Navigate to **Applications > Enterprise Applications > Workplace > Class loading and update detection**.
8. Set the polling interval for updated files with a number appropriate for your environment, for example, 3 seconds.
9. Change the **Class loader order** to **Classes loaded with application class loader first**.
10. Click **Apply**.
11. Click **Workplace > Manage Modules**.
12. Click **Workplace**.
13. Change the **Class loader order** to **Classes loaded with application class loader first**.

    Important: Do this only for the specific web application. Do not change the similar settings for the entire application server.
14. If you are using container-managed authentication, navigate to **Enterprise Applications > Workplace > Security role to user/group mapping**. Verify that the **All Authenticated** column is checked for the "All Authenticated" role.
15. Save all your changes to the master configuration.
16. Stop and restart the WebSphere Application Server instance where the application is installed.

    To troubleshoot the deployment, check the following log:

    WAS_install_path/AppServer/profiles/*profile_name*/logs/*server_name*/SystemOut.log
17. Start Workplace (or whatever you named your application) from the administrative console.

Deploying the application (WebSphere Application Server 7.0):

To use Workplace as a web application, you must deploy it as an application in the WebSphere 7.0 administrative console. You can specify the context root for the application URL during the deployment.

To deploy Application Engine:

1. Log on to the WebSphere administrative console.
2. Navigate to **Applications > WebSphere Enterprise Applications > New Enterprise Applications > Install**
3. Select the file to deploy.
   - (If the administrative console is running *locally*) Select **Local file system** and enter or browse to the location of the app_engine.war or app_engine.ear file created by the installation program. For example, *AE_install_path*/deploy/app_engine.war or *AE_install_path*/deploy/app_engine.ear. Do not enter the machine name.
   - (If the administrative console is *remote*) Select **Remote file system** and enter the fully-qualified pathname to the app_engine.war or app_engine.ear file. For example, *AE_install_path*/deploy/app_engine.war or *AE_install_path*/deploy/app_engine.ear. Do not enter the machine name.
4. If you are deploying a WAR file, enter the context root.

   Enter Workplace and click **Next** to proceed to deploying a new application.

Tip: The context root is the name of the application you log in to by using the web interface, such as: `http://ApplicationEngineServerName:port#/Context_Root`.

5. Click **Prompt only when additional information is required**, and click **Next**. Complete the dialog boxes for installing a new application by using the following settings:

   For **Application name**, enter Workplace, or the name you chose to call the application.

   For **WebServer**, specify the server you are planning to use. Verify that your application name is selected and associated with the correct WebServer.

   For **Map virtual hosts for Web modules**, for virtual host, choose the default_host.

   (WAR file deployment only) For **Context root**, specify Workplace, or whatever you want to call the application.
6. Save your configuration.
7. Navigate to **Applications > Enterprise Applications > Workplace > Class loading and update detection**.
8. Set the polling interval for updated files with a number appropriate for your environment, for example, 3 seconds.
9. Change the **Class loader order** to **Classes loaded with local class loader first (parent last)**.
10. Click **Apply**.
11. Click **Workplace > Manage Modules**.
12. In the **Modules** column, cllick **Workplace**.
13. Change the **Class loader order** to **Classes loaded with local class loader first (parent last)**.

    Important: Do this only for the specific web application. Do not change the similar settings for the entire application server.
14. If you are using container-managed authentication, navigate to **Enterprise Applications > Workplace > Security role to user/group mapping**.
    a. Select the **All Authenticated** role and click **Map Special Subjects**.
    b. Map the **All Authenticated** role and to **All Authenticated in Applications realm**.
15. Save all your changes to the master configuration.
16. Stop and restart the WebSphere Application Server instance where the application is installed.

    To troubleshoot the deployment, check the following log:

    `WAS_install_path/AppServer/profiles/profile_name/logs/server_name/SystemOut.log`
17. Start Workplace (or whatever you named your application) from the administrative console.

Completing post-upgrade Application Engine configuration

After you upgrade and deploy your Application Engine instances, you can complete additional configuration. Actions include modifying a configuration file, verifying Workplace sign-in, and establishing the Process Engine connection point.

To complete post-upgrade Application Engine configuration:

1. If it is not already running, start the Workplace application on your application server.
2. Sign in to Workplace to test your connection.
   a. On any computer, open a browser and type: `http://server_name:port#/Workplace`
   b. Enter a user name and password, and click **Sign in**.
3. Set the Process Engine Connection Point.

   The Process Router from version 3.5 has been replaced with the Application 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.
      1) In Workplace, click **Tasks.**
      2) Verify that the Tasks page displays.
   f. Sign out of Workplace.

Part 2. Removing software

Removing IBM FileNet P8 software can involve deleting one or more core components, expansion products, and the FileNet P8 documentation.

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*.

"Removing the IBM FileNet P8 documentation" on page 207
Removing the documentation for the FileNet P8 Platform and its expansion products involves a number of application server configuration possibilities. Use these examples only for reference. Your specific installation directories and application names might vary.

"Removing Content Engine" on page 209
You can uninstall an entire Content Engine installation or selected Content Engine components.

"Removing Content Search Engine" on page 211
To completely remove 4.5 Content Search Engine (Autonomy K2) and collections from your IBM FileNet P8 Platform installation, you must disable full-text indexing. You must also remove the Autonomy K2 installations from all servers associated with the Content Engine.

"Removing additional locales (Windows)" on page 213
Remove the additional locales that you installed on Windows machines.

"Removing Process Engine (Windows)" on page 215
Removal of the Process Engine for Windows platforms requires that you remove the software components in a specific order.

"Removing Application Engine (WebSphere)" on page 217
Removal of the Application Engine for WebSphere on UNIX and Windows platforms requires that you log on to the application server and run the uninstall program.

"Removing the Application Engine ISRA servlet" on page 219
Removal of the Application Engine ISRA Servlet for Windows and UNIX environments requires that you logon to the application server, undeploy the servlet, and run the uninstall program.

"Removing Workplace Application Integration" on page 221
You can remove Application Integration by using the Microsoft Windows Control Panel, or you can remove the program files silently from the command line.

"Removing Workplace File Tracker" on page 223
You can remove File Tracker by using the Microsoft Windows Control Panel, or you can remove the program files silently from the command line.

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Removing the IBM FileNet P8 documentation

Removing the documentation for the FileNet P8 Platform and its expansion products involves a number of application server configuration possibilities. Use these examples only for reference. Your specific installation directories and application names might vary.

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 might 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.

"Removing the FileNet P8 documentation from a WebSphere Application Server"
To remove the FileNet P8 documentation, delete the entire FileNet P8 documentation folder (for example, `ecm_help.war`) structure from the installation location.

Removing the FileNet P8 documentation from a WebSphere Application Server

To remove the FileNet P8 documentation, delete the entire FileNet P8 documentation folder (for example, `ecm_help.war`) structure from the installation location.

1. Log on to the WebSphere FileNet P8 documentation server.

Option	Description
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.

   Important: Do not remove any other FileNet P8 application (for example, Workplace) files that are installed on the web application server.

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Removing Content Engine

You can uninstall an entire Content Engine installation or selected Content Engine components.

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.

"Removing part or all of a Content Engine installation interactively by using the Windows control panel"
You can remove part or all of a Content Engine installation.

"Removing Content Engine silently"
In silent mode, the uninstaller removes all Content Engine components.

"Removing data associated with Content Engine" on page 210
After uninstalling Content Engine, you can remove its associated data.

Removing part or all of a Content Engine installation interactively by using the Windows control panel

You can remove part or all of a Content Engine installation.

To remove Content Engine:l

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. In the Uninstall Options screen, choose to uninstall some or all Content Engine components.
4. In the Choose Components screen, choose which components to remove.
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\IBM\FileNet` directory.

Removing Content Engine silently

In silent mode, the uninstaller removes all Content Engine components.

To uninstall Content Engine silently, run one of the following commands:

Option	Description
Windows	`ce_uninstaller.exe -i silent`

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Removing data associated with Content Engine

After uninstalling Content Engine, you can remove its associated data.

1. Use the application server console or command lines to undeploy Content Engine.
2. Use the application server console or command lines to remove any database JDNI data sources associated with Content Engine object stores.
3. Use your database tools to drop any databases or table spaces for the object stores and the GCD.
4. Use your LDAP tools to delete users and groups you created in *Plan and Prepare Your Environment for IBM FileNet P8*.
5. Use your operating system commands to delete any directories, users, and groups that were used for installing and administering Content Engine.
6. Use your operating system commands to delete any file-storage-area directories that contain content, such as documents.
7. User your operating system commands to delete any index-area directories (K2 collections).

Removing Content Search Engine

To completely remove 4.5 Content Search Engine (Autonomy K2) and collections from your IBM FileNet P8 Platform installation, you must disable full-text indexing. You must also remove the Autonomy K2 installations from all servers associated with the Content Engine.

Important:

- If you remove or disable Autonomy K2 before you disable CBR and full-text indexing in Enterprise Manager, your system is rendered unusable and require considerable reconstruction.
- This procedure presumes you have a running installation of version 4.5 Content Search Engine and that you have existing collections.
- If you intend to remove Content Engine, skip to 4.

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** check box and click **OK**.
   d. A dialog asks if you want 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 reindex any of these objects that were previously enabled:
   - Document
   - Annotation
   - Custom Object
   - Folder

   The index job disables all full-text indexing and content-based retrieval settings and deletes any associated collections. After the index job is complete, continue with the next step.
4. As *k2_os_user*, log on to the Master Administration Server machine in your IBM FileNet P8 Content Search Engine configuration.
5. Complete the steps in the table to remove the Autonomy K2 software on the machine.

Option	Description
Windows	1. Access the Add or Remove Programs control panel and select **IBM FileNet P8 Content Search Engine**. 2. Click **Change/Remove**.

6. Delete *verity_install_path* on the machine.
7. Repeat 5 and 6 for each remaining machine in your IBM FileNet P8 Content Search Engine configuration.

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Removing additional locales (Windows)

Remove the additional locales that you installed on Windows machines.

To remove locales:

1. Click **Start** → **Add or Remove Programs**.
2. To remove all single-language locales, select **Verity Locales 6.1**. Then right-click, and select **Uninstall**.
3. To remove all European locales, select **Verity Single-Language European Locales 6.1**. Then right-click and select **Uninstall**.

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Removing Process Engine (Windows)

Removal of the Process Engine for Windows platforms requires that you remove the software components in a specific order.

Important: You must remove the software in the order listed. If you remove FileNet Image Services before you remove Process Engine, 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 **System 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 FileNet Image Services software.
11. Press Enter to continue with the removal.
12. Close the Add/Remove snap-in.
13. Close the Control Panel.

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Removing Application Engine (WebSphere)

Removal of the Application Engine for WebSphere on UNIX and Windows platforms requires that you log on to the application server and run the uninstall program.

To remove the Application Engine software:

1. Log on to the application server.

Option	Description
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:

Option	Description
Windows	`uninstaller.exe`

   Tip: For Windows, you can also use Add/Remove Programs from the Control Panel to remove the 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.

   Important: In the following step, do not remove the system environment variable if any other IBM FileNet P8 application is installed on the server.

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Removing the Application Engine ISRA servlet

Removal of the Application Engine ISRA Servlet for Windows and UNIX environments requires that you logon to the application server, undeploy the servlet, and run the uninstall program.

Since the installed names for the ISRA Servlet are configurable on the supported application servers, the following information might 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.

Option	Description
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.

Option	Description
IBM WebSphere Application Server	1. Stop the ApplicationEngineISRAServlet process in the Admin console. 2. Uninstall the ApplicationEngineISRAServlet application from Enterprise Applications.

3. Navigate to the `/_uninstISRA` directory under the ISRA Servlet installation location.
4. Run the uninstall program:

Option	Description
Windows	`uninstall.exe`

Tip: 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 Application Server only) Delete the following temporary working folders for the Application Engine ISRA Servlet: *WAS_Home*`\WebSphere\AppServer\profiles\default\installedApps\`*servername*`\ApplicationEngineISRAServlet.ear\`

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Removing Workplace Application Integration

You can remove Application Integration by using the Microsoft Windows Control Panel, or you can remove the program files silently from the command line.

"Removing or modifying Workplace Application Integration interactively"
You can use Microsoft Windows Control Panel to remove, repair, or modify Workplace Application Integration.

"Removing Workplace Application Integration silently"
To silently uninstall Workplace Application Integration run `msiexec.exe /X{35907B7D-02E2-490C-8F3B-54C4E3729D90} /qn` at the command line.

Removing or modifying Workplace Application Integration interactively

You can use Microsoft Windows Control Panel to remove, repair, or modify Workplace Application Integration.

To remove Application Integration:

1. Select **Start** → **Settings** → **Control Panel** → **Add/Remove Programs** → **FileNet Workplace Application Integration 4.0**.
2. Select the operation to perform:
   - 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.

     Select the task to perform:
     - 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 by using this option. The Custom Setup dialog box opens, where you select 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**. After the application is removed from your system, click **Finish** to complete the process.

Removing Workplace Application Integration silently

To silently uninstall Workplace Application Integration run `msiexec.exe /X{35907B7D-02E2-490C-8F3B-54C4E3729D90} /qn` at the command line.

1. Open a command prompt.
2. Enter the following command to uninstall Workplace Application Integration:

   ```
   msiexec.exe /X{35907B7D-02E2-490C-8F3B-54C4E3729D90} /qn
   ```

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Removing Workplace File Tracker

You can remove File Tracker by using the Microsoft Windows Control Panel, or you can remove the program files silently from the command line.

"Removing Workplace File Tracker interactively"
You can use the Microsoft Windows Control Panel to uninstall Workplace File Tracker.

"Removing Workplace File Tracker silently"
You can use a command line option to silently uninstall Workplace File Tracker.

Removing Workplace File Tracker interactively

You can use the Microsoft Windows Control Panel 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.

Removing Workplace File Tracker silently

You can use a command line option 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
```

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Part 3. Appendixes

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Appendix A. 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.

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

- Application server properties
- Java Database Connectivity (JDBC) data source properties for the Global Configuration Data (GCD) database
- Java Database Connectivity (JDBC) data source properties for each object store database
- Directory service (LDAP) provider properties
- Content Engine application login modules
- Content Engine bootstrap properties

"Overview of Configuration Manager" on page 228
You can use Configuration Manager to generate one or more unique Content Engine configuration profiles. A profile is a collection of information required to configure and deploy new or upgraded Content Engine instances.

"Handling passwords in Configuration Manager" on page 231
To provide the highest possible security, Configuration Manager's default settings do not save passwords from the GUI application. The password save setting is a preference setting in the Configuration Manager graphical interface. 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 a profile in Configuration Manager, the passwords are removed from memory. When you open Configuration Manager or the profile again to run a saved task, you will must reenter passwords to run the tasks.

"Accessing the Configuration Manager log files" on page 231
Configuration Manager maintains three types of log files: the Configuration Manager session log, the Configuration Managererror log, and the task status file.

"Adding an SSL signer to the Configuration Manager keystore (WebSphere)" on page 232
If you are using SSL for communication between Content Engine and WebSphere Application Server you might receive an SSL signer error when you test the connection to the application server or when you run the Deploy Application task. To resolve the issue, make sure that you have an entry for the SSL signer in the truststore that Configuration Manager uses.

"Correcting an SSL Signer Exchange Prompt error (WebSphere)" on page 233
If you are using SSL for communication between Content Engine and WebSphere Application Server, you might receive the SSL signer error `SSL SIGNER EXCHANGE PROMPT` when you run the task for configuring the JDBC data sources for the Global Configuration Data (GCD) or for an object store.

"Configuration Manager user interface reference" on page 234
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.

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"Configuration Manager command-line reference" on page 250
Configuration Manager can be run from a command line. This section covers the syntax for the command-line version of Configuration Manager.

Overview of Configuration Manager

You can use Configuration Manager to generate one or more unique Content Engine configuration profiles. A profile is a collection of information required to configure and deploy new or upgraded Content Engine instances.

"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.

"Using the graphical and command-line user interfaces" on page 230
Both the graphical user interface (GUI) and the command-line interface (CLI) 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.

"Gathering Configuration Manager values by using the installation and upgrade worksheet" on page 230
You can use the installation and upgrade worksheet to record the values that you must enter in Configuration Manager.

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 both the directory name and the configuration file 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 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 Configuration Manager 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 must 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 by using the Create New Installation Profile wizard, and you can edit the application server properties at any time as needed. See "Creating a profile for a new installation" on page 242 or "Editing the application server properties" on page 244 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 must 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. By default, the JDBC properties are stored in the *ce_install_path*/tools/configure/profiles/*myprofile*/configurejdbcgcd.xml file or the the *ce_install_path*/tools/configure/profiles/*myprofile*/configurejdbcos.xml file, where *myprofile* is the name of your profile.

  See "Editing the configure JDBC data source task" on page 245 for the procedure to set the JDBC data source properties after you have created a profile.
- **Configure the application login modules**. The login modules provide authentication information for the Content Engine application. Run this task to create the login modules on the application server.

  See "Editing the configure LDAP task" on page 245 for the procedure to create the login modules after 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 245 for the procedure to set the LDAP properties after you have created a profile.
- **Configure the Content Engine bootstrap settings**. The bootstrap information is needed for creating the Global Configuration Data 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 246 for the procedure to set the bootstrap properties after 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.

Tip: After you deploy the Content Engine application, you use Enterprise Manager to customize Content Engine for your site's requirements.

See "Editing the deploy application task" on page 246 for the procedure to edit the deployment properties after 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" on page 249.
- **Configure a profile for upgrading an existing Content Engine from 4**. 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 "Creating a profile for a new installation" on page 242 for a detailed procedure.

Using the graphical and command-line user interfaces

Both the graphical user interface (GUI) and the command-line interface (CLI) 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.

Configuration Manager has a GUI and a CLI. The GUI version of the tool displays the properties and default values that you must 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 run the tasks to apply the saved settings. After 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.

Gathering Configuration Manager values by using the installation and upgrade worksheet

You can use the installation and upgrade worksheet to record the values that you must enter in Configuration Manager.

Be sure that you have available the Installation and Upgrade Worksheet that was completed during your planning activities.

To see only the properties you must specify for Configuration Manager:

1. Open your completed Installation and Upgrade Worksheet file.
2. Verify that the **Data → Filter → AutoFilter** command is enabled.
3. Filter by one of the following Configuration Manager options in the **Installation or Configuration Program** column:
   - **CM: config_mgr_user**
   - **CM: Create New Installation Profile**

- **CM: Configure GCD JDBC Data Sources**
- **CM: Configure Object Store JDBC Data Sources (object store 1)**
- **CM: Configure LDAP**
- **CM: Configure Bootstrap Properties**
- **CM: Deploy Application**
- **CM: Upgrade bootstrap**
- **CM: Upgrade Configuration Profile**

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 a preference setting in the Configuration Manager graphical interface. 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 a profile in Configuration Manager, the passwords are removed from memory. When you open Configuration Manager or the profile again to run a saved task, you will must reenter passwords to run the tasks.

The following passwords are used to run the tasks:

- The application server administrator password. Select **File → Edit Application Server Properties** to enter the password.
- The database administrator password. Edit the **Configure GCD JDBC Data Sources** task or the **Configure Object Store JDBC Data Sources** task.
- The directory service bind user password. Edit the **Configure LDAP** task.
- The bootstrap user password. Edit the **Configure Bootstrap** task.

The Configuration Manager command line passes the passwords from an XML configuration file to the required application when you run a task. You can use the **storepasswords** command to add encrypted passwords to the XML files, or you can enter plain text passwords when you edit the files. However, saving the passwords to the XML files might not be FIPS 140-2 compliant.

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.

Accessing the Configuration Manager log files

Configuration Manager maintains three types of log files: the Configuration Manager session log, the Configuration Managererror log, and the task status file.

- 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 about viewing the session log, see “Checking the task status” on page 249.

- 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 about checking the task status from the GUI, see “Checking the task status” on page 249. For more information about checking the task status from the CLI, see “Running Configuration Manager commands” on page 251.

Adding an SSL signer to the Configuration Manager keystore (WebSphere)

If you are using SSL for communication between Content Engine and WebSphere Application Server you might receive an SSL signer error when you test the connection to the application server or when you run the Deploy Application task. To resolve the issue, make sure that you have an entry for the SSL signer in the truststore that Configuration Manager uses.

1. Identify the serial number for the SSL certificate on the web application server.
   a. From the server where Configuration Manager is installed, browse to the WebSphere administrative console address.
   b. In the Security Alert dialog box, click **View Certificate**.
   c. Click the **Details** tab.
   d. Record the value for **Serial number** for the certificate.
   e. Click **OK** to dismiss the Certificate dialog box.
   f. Click **Yes** in the Security Alert dialog box to proceed.
2. Identify the truststore location and filename.
   a. Log in to the WebSphere administrative console.
   b. Select **Security** → **SSL certificate and key management**.
   c. Select **SSL configurations**.
   d. Click the default SSL setting, **NodeDefaultSSLSettings**.
   e. Under the **Related items** link, click **Key stores and certificates**.
   f. Record the filename in the **Path** column for the truststore **NodeDefaultTrustStore**, such as trust.p12.
3. Start IBM Key Management by entering one of the following commands at a command prompt:

Option	Description
Windows	*WAS-Home*\AppServer\bin\ikeyman.bat

4. Select **Keybase File** → **Open**.

a. For the **Key database type**, select **PKCS12**.
b. Click **Browse** to locate the filename you recorded in step 2 on page 232. For example, the File Name filed contains the filename, such as `trust.p12`. The **Location** field contains the absolute path to the truststore, such as `C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\etc\` for Windows.
c. Click **OK**.
d. Enter the password and click **OK**. The default password is `WebAS`.

5. Locate the signer certificate with the serial number that matches the serial number that you recorded in step 1 on page 232.
   a. Double-click a certificate name other than **default_signer** to view the serial number for the certificate.
   b. Click **OK** to close the dialog box.
   c. Repeat until you have located the correct signer certificate.
6. Extract the certificate.
   a. Select the signer certificate with the correct serial number, and click **Extract**.
   b. Provide a name and location, and then click **OK**.
7. Add the certificate that you extracted to the trust file for Content Engine.
   a. Open the `DummyClientTrustFile.jks` key database file located in the WebSphere profile for Content Engine, such as `C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\etc\` for Windows.
   b. Add the certificate that you extracted in step 6.
8. Close IBM Key Management.

Correcting an SSL Signer Exchange Prompt error (WebSphere)

If you are using SSL for communication between Content Engine and WebSphere Application Server, you might receive the SSL signer error `SSL SIGNER EXCHANGE PROMPT` when you run the task for configuring the JDBC data sources for the Global Configuration Data (GCD) or for an object store.

Use this procedure if you receive the following error when you run a task for configuring the JDBC data sources, such as **Configure GCD JDBC Data Sources**:

```
Error while executing Configure GCD JDBC Data Sources
Execution failed with the following message: The data source configuration failed.
*** SSL SIGNER EXCHANGE PROMPT ***
SSL signer from target host null is not found in trust store
```

1. From a command prompt, navigate to the *WAS_HOME*/AppServer/profiles/*app_server_name*/bin directory.
2. Run the following command:

   ```
   wsadmin.bat -conntype SOAP -port portnumber -username username
    -password userpassword
   ```

   Where:

   portnumber
   is the same value that you entered for the **Application server SOAP** field in the configure JDBC task properties. The WebSphere default is 8880.

   username
   is the same value that you entered for the **Application server administrator user name** field in the configure JDBC task properties.

userpassword
is the same value that you entered for the **Application server administrator password** field in the configure JDBC task properties.

3. At the prompt to add the signer to the trust store, enter `Yes`.
4. Close the command prompt.
5. Use Configuration Manager to run the configure JDBC task again, from the graphical user interface or from the command line.

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.

Restriction: 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 250.

"Starting Configuration Manager"
You can start the graphical interface version of Configuration Manager to configure a Content Engine application instance on a web application server.

"Configuration Manager window" on page 235
The default 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 on the lower right side. You can drag, resize, and rearrange the panes to change the location if needed.

"Configuration Manager menus and commands" on page 238
You can access the Configuration Manager commands through the menu or by right-clicking an item. The following tables describe the available commands.

"Working with Configuration Manager" on page 241
You can use the Configuration Manager commands, icons, and panes to work with your profiles and configuration tasks.

"configmgr.ini parameters" on page 250
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/configmgr.ini` file.

Starting Configuration Manager

You can start the graphical interface version of Configuration Manager to configure a Content Engine application instance on a web application server.

To start Configuration Manager:

1. Start Configuration Manager by running one of the following commands, depending on the operating system that runs on the machine where you installed Content Engine:

Option	Description
Windows	Perform one of the following actions: • Double-click the **FileNet Configuration Manager** desktop shortcut. • Click **Start → All Programs → IBM FileNet P8 Platform → FileNet Configuration Manager**. • Run the following command: *ce_install_path*\tools\configure\configmgr.exe

The first time that you start Configuration Manager, the Welcome is displayed.

2. Select one of the links in the Welcome to learn more or to start working in a wizard, or close the Welcome by clicking the **X** in the tab at the upper left. You can reopen the Welcome later, as needed, from the **Help** menu.

Configuration Manager window

The default 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 on the lower right side. You can drag, resize, and rearrange the panes to change the location if needed.

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.

To move from one open task tab in the Task Editor pane to another open task tab, press `Ctrl-F6`.

To move from one pane to the next, press `Ctrl-F7`.

To restore a closed pane, select **Window → Show View**.

"Main toolbar" on page 236
The Configuration Manager main toolbar is located just below the menu bar. The main toolbar contains multiple icons for working with your profiles.

"Profile toolbar" on page 236
The Configuration Manager profile toolbar is located at the upper right of the Content Engine Task View pane. The profile toolbar contains multiple icons for working with a selected profile.

"Task toolbar" on page 237
The Configuration Manager task toolbar is located at the upper right of the Task Editor pane when a Task tab is open.

"Console toolbar" on page 237
The Console toolbar is located at the upper right of the Console pane. The Console toolbar contains the multiple icons for working with the Console pane.

Main toolbar

The Configuration Manager main toolbar is located just below the menu bar. The main toolbar contains multiple icons for working with your profiles.

Icon	Command name and Description
	New Installation Profile Click this icon to create a profile for a new installation. 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.
	New Upgrade Profile Click this icon to create a 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.
	Open Profile 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.
	Save Click this icon to save the current configuration profile settings.
	View Configuration Manager Log File Click this icon to view the Configuration Manager session log. The session log is cleared when you open Configuration Manager or when you close a profile.

Profile toolbar

The Configuration Manager profile toolbar is located at the upper right of the Content Engine Task View pane. The profile toolbar contains multiple icons for working with a selected profile.

Icon	Command name and Description
	Edit Application Server Properties Click this icon to view or edit the application server properties for the current profile.

Icon	Command name and Description
	Run All Tasks Click this icon to run all the enabled tasks for the current profile.

Task toolbar

The Configuration Manager task toolbar is located at the upper right of the Task Editor pane when a Task tab is open.

The task toolbar contains the following icons for working with the current task:

Icon or Button	Command Name and Description
	Enable the Selected Task Click this icon to enable a task. The Run All Tasks command only runs tasks that are enabled.
	Disable the Selected Task Click this icon to disable a task. The Run All Tasks command only runs tasks that are enabled.
	Save Click this icon to save the current task.
Test Database Connection	Test Database Connection Configure GCD JDBC Data Sources task or Configure Object Store JDBC Data Sources task tab only. Click this button to test the connection to the database by using the values provided.
Test LDAP Connection	Test LDAP Connection Configure LDAP task tab only. Click this button to test the connection to the directory service provider by using the values provided.

Console toolbar

The Console toolbar is located at the upper right of the Console pane. The Console toolbar contains the multiple icons for working with the Console pane.

Icon	Command name and Description
	Clear Console 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.

Icon	Command name and Description
	Scroll Lock 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.
	Pin Console 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.
	Display Selected Console Click this icon to select the console tab to display. Select the desired tab from the list of recently viewed consoles.
	Open Console 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.

Configuration Manager menus and commands

You can access the Configuration Manager commands through the menu or by right-clicking an item. The following tables describe the available commands.

Main menu

The following table lists the menus and commands that are available in Configuration Manager.

Table 24. Main Menu Commands

Menu name	Command name	Description
File		Provides commands for creating, saving, or opening a configuration profile.
	New Installation Profile	Creates a profile for a new installation. See “Creating a profile for a new installation” on page 242 for detailed procedures to create a profile.
	New Upgrade Profile	Creates a profile for upgrading Content Engine. See “Creating a profile for a new installation” on page 242 for detailed procedures to create a profile.
	Open Profile	Opens an existing profile for viewing or editing. Keyboard shortcut: Ctrl+O
	Close Profile	Closes the current profile.
	Save	Saves your changes to the active task. Keyboard shortcut: Ctrl+S

Table 24. Main Menu Commands (continued)

Menu name	Command name	Description
	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.
	Edit Application Server Properties	Opens the Edit Application Server Properties wizard for editing the application server values for the profile. Keyboard shortcut: Ctrl+U
	Run All	Runs all of the tasks in the profile to apply your settings. If a particular task is disabled, that task is skipped when you select Run All Tasks. Keyboard shortcut: Ctrl+R
	Exit	Closes Configuration Manager.
Window		Provides commands for viewing a log file, changing the view in a Configuration Manager pane, and setting preferences
	View Log File	Provides commands that give you access to logs and various views of information.
	Show View	Displays the session log in the Console pane. The session log lists results from tasks that you have run since you opened the current profile.
	Preferences	Provides choices for determining the behavior of Configuration Manager, such as the password save preference and the warning message preference.
Help		Displays help pages about Configuration Manager.
	Welcome	Provides a quick introduction to the use of Configuration Manager.
	Help Contents	Provides reference information for Configuration Manager.
	About Configuration Manager	Displays the copyright and related information about Configuration Manager.

Pop-Up menus

The pop-up menus are displayed when you right-click an item in Configuration Manager.

Table 25. Profile Icon Pop-Up Menu Commands

Command	Description
Edit Application Server Properties	Opens the Edit Application Server Properties wizard for the profile.
Add New Task > Configure JDBC Data Sources	Adds a New_Configure JDBC Data Sources task to the profile.
Add New Task > Configure LDAP	Adds a New_Configure LDAP task to the profile.

Table 25. Profile Icon Pop-Up Menu Commands (continued)

Command	Description
Add New Task > Configure Bootstrap	Adds a Configure Bootstrap task to the profile.
Run All	Displays a sub-menu of the tasks associated with the profile. Click the task name that you want to run.
Close Configuration Profile	Closes the configuration profile.

Table 26. Task Icon Pop-Up Menu Commands

Command	Description
Edit Selected Task	Opens the task in the task pane for editing.
Enable Selected Task Disable Selected Task	Toggles the state of the task between enabled and disabled. Any task that is disabled will not run with either the **Run Selected Task** command or the Run All Tasks command. If the task is currently enabled, selecting the **Disable Selected Task** command prevents the task from running, changes the font for the task icon to italic, and appends "(disabled)" to the icon label. If the task is currently disabled, selecting the **Enable Selected Task** command allows the task to run, restores the original font, and removes "(disabled)" from the icon label.
Copy the Selected Task	Creates a copy of the selected task. This command is available only for the Configure JDBC Data Sources and the Configure LDAP tasks.
Add New Task > Configure JDBC Data Sources	Adds a Configure JDBC Data Sources task to the profile. You can have multiple Configure JDBC Data Sources tasks in a profile.
Add New Task > Configure Login Modules	Adds a Configure Login Modules task to the profile. You can only have one Configure Login Modules task in a profile.
Add New Task > Configure LDAP	Adds a Configure LDAP task to the profile. You can have multiple Configure LDAP tasks in a profile.
Add New Task > Configure Bootstrap Properties	Adds a Configure Bootstrap Properties task to the profile. You can have multiple Configure Bootstrap Properties tasks in a profile.
Add New Task > Deploy Application	Adds a Deploy Application task to the profile. You can only one Deploy Application task in a profile.
Reset Selected Task Status	Resets the status of the task to indicate that it has not yet been run.
Check Task Status	Displays the current status of the task.
Rename Task	Opens an edit window in which you can change the name of the label associated with the task.
Delete the Selected Task	Deletes the task from the profile. You cannot delete a task if it is open for editing in the task pane.
Move Selected Task Up	Moves the selected task up in the list of tasks.
Move Selected Task Down	Moves the selected task down in the list of tasks.

Working with Configuration Manager

You can use the Configuration Manager commands, icons, and panes to work with your profiles and configuration tasks.

"Configuring a Content Engine instance" on page 242
You can use the Configuration Manager graphical user interface to configure a Content Engine instance.

"Setting the password save preference" on page 242
By default, the Configuration Manager password save preference is set to not save passwords to a file. If your site security requirements permit you to save passwords to a file, you can change the password save preference setting.

"Creating a profile for a new installation" on page 242
You must create a new configuration profile for each Content Engine application that you deploy.

"Creating a profile for an upgrade" on page 243
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.

"Opening and closing an existing profile or task" on page 243
You can save a profile, and open it later to edit the saved settings or to run tasks.

"Editing the application server properties" on page 244
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, but you cannot change the application server type for an existing profile. The application server properties must be set before you run any tasks.

"Editing the properties for a specific task" on page 244
You must provide the required property values for each task in your profile before you run the task.

"Applying the property settings by running a specific task" on page 246
You must run a task to apply the values that you provided.

"Adding an additional task to your profile" on page 248
A profile can contain an unlimited number of tasks. You can configure more than one Configure Object Store JDBC Data Sources task, more than one Configure LDAP task, or more than one Configure Bootstrap Properties task. You can add a new task for a task type that you do not already have in the profile.

"Deleting a task from a profile" on page 248
You can delete any unneeded tasks from your profile.

"Running all tasks at the same time" on page 249
You can run all the tasks in a profile at the same time. Disabled tasks will not run.

"Running a single task" on page 249
You can run each configuration task individually. Disabled tasks will not run.

"Checking the task status" on page 249
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.

"Viewing the session log" on page 250
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.

"Saving your changes to a task or profile" on page 250
You can save your profile and task settings at any time.

Configuring a Content Engine instance

You can use the Configuration Manager graphical user interface to configure a Content Engine instance.

To configure a Content Engine instance:

1. Create a configuration profile. See "Creating a profile for a new installation."
2. Edit the configuration tasks included in the profile. See one or more of the following topics:
   - "Editing the configure JDBC data source task" on page 245
   - "Editing the configure LDAP task" on page 245
   - "Editing the configure bootstrap properties settings" on page 246
3. Apply the configuration settings by running the tasks. See "Running all tasks at the same time" on page 249.
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 246.

Setting the password save preference

By default, the Configuration Manager password save preference is set to not save passwords to a file. If your site security requirements permit you to save passwords to a file, you can change the password save preference setting.

When you close the profile, the passwords are erased from memory. Each time that you start Configuration Manager or open a saved profile, you must specify any passwords required by the tasks and for the application server properties before you run the tasks; otherwise, the tasks won't run successfully. If your site security requirements permit you to save passwords to a file, you can change the password save preference setting.

To change the password save preference:

1. Click **Window** → **Preferences**.
2. Complete one of the following actions:

Option	Description
To save passwords to file	Select the **Save all passwords to file when saving a task or profile** check box.
To prevent writing passwords to file	Clear the **Save all passwords to file when saving a task or profile** check box.

3. Click **OK**.

Creating a profile for a new installation

You must create a new configuration profile for each Content Engine application that you deploy.

To create a new configuration profile:

1. Start the Create New Installation Profile wizard.
   - Click the **New Installation Profile** icon in the toolbar.
   - Select **File** → **New Installation 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. If you selected **Yes** and your current profile has any unsaved changes, the Save Resource message box opens.
   b. Click **Yes** to save your changes, or click **No** to continue without saving your changes.

      The Create New Configuration Profile Wizard opens.
3. Complete the wizard screens. For details on the fields in the wizard screens, hover your mouse over the field name to view the property description.

The new profile is displayed as an icon in the left-hand panewith icons for the tasks for the tasks that you selected. The default profile contains the following tasks:

- Configure GCD JDBC Data Sources
- Configure Object Store JDBC Data Sources
- Configure Login Modules
- Configure LDAP
- Configure Bootstrap Properties
- Deploy Application (Disabled)

Creating a profile for an upgrade

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 by using one of these methods:
   - Click **Create a Profile for an Upgrade Installation** in the toolbar.
   - Select **File → New Upgrade 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. For details on the fields in the wizard screens, hover your mouse over the field name to view the property description.

The profile you created is displayed as an icon in the left-hand pane with the name that was presented in the confirmation screenwith icons for the **Configure 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.

1. Open a profile:
   - Click **Open an Existing Profile** in the toolbar.
   - Select **File → Open Profile**.
   a. If a profile is already open, the Action Required message box opens. Respond to the messages as follows:
      1) Click **Yes** to continue creating a new profile, or click **No** to cancel.

2) 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**.

b. Either type in the fully qualified path to the *myprofile*.cfgp profile file, or click **Browse** to locate the file.

c. Click **OK**.

2. Open a task:

   More than one task tab can be open at a time in the Task Editor pane.

   a. If the profile is collapsed in the Content Engine Task View pane, click **+** next to the profile name to expand it.

   b. 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.

3. Switch between open tasks in the Task Editor pane by clicking the ***tab name*** in the Task Editor pane for the desired task.

4. Close a task:

   a. If the task is not the actively selected task, click the ***tab name*** in the Task Editor pane for the desired task.

   b. Click **Close** in the tab for the task. You will be prompted to save any changes to the task.

5. Close the profile by selecting **File → Close Profile**.

   You will be prompted to save any changes when you close a profile. Passwords are removed from memory when you close a profile.

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, but you cannot change the application server type for an existing profile. The application server properties must be set before you run any tasks.

1. Start the Edit Application Server Properties wizard by using one of theses methods:

   - Click **Edit Application Server Properties** in the main toolbar.
   - Select **File → Edit Application Server properties**.

2. Provide values for the application server properties. For details on the fields, hover your mouse over the field name to view the property description.

3. Optional: WebSphere Application Server and Oracle WebLogic Server only. In the Set Properties for Application Server window, click **Test Connection** to test the connection between Configuration Manager and the application server by using the information that you have provided. The test is optional, and you can proceed in the wizard even if the test fails. If the test fails, make sure that the application server is running and that the application server property values that you entered match the values that are defined in your application server.

4. Click **Finish**.

Editing the properties for a specific task

You must provide the required property values for each task in your profile before you run the task.

"Editing the configure JDBC data source task" on page 245
The JDBC data source information is used by Content Engine to connect to Global Configuration Data and object store databases. Configuration Manager

provides two tasks for configuring the JDBC data sources: Configure GCD JDBC Data Sources and Configure Object Store JDBC Data Sources.

"Editing the configure LDAP task"
The LDAP information is used to connect Content Engine to the directory service provider to authenticate users.

"Editing the configure bootstrap properties settings" on page 246
The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine.

"Editing the deploy application task" on page 246
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. 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, Content Search Engine, or customized applications for Content Engine.

Editing the configure JDBC data source task:

The JDBC data source information is used by Content Engine to connect to Global Configuration Data and object store databases. Configuration Manager provides two tasks for configuring the JDBC data sources: Configure GCD JDBC Data Sources and Configure Object Store JDBC Data Sources.

The procedure for editing the Configure GCD JDBC Data Sources task and the Configure Object Store JDBC Data Sources task is the same. To complete the Content Engine configuration, you must configure the GCD data sources and the data sources for each object store.

1. Open either the GCD data source task or the object store data source task for editing.
   - Double-click **Configure GCD JDBC Data Sources**.
   - Double-click **Configure Object Store JDBC Data Sources**.
2. Provide the property values for your database. Place your mouse on a field name to view the property description.
3. Optional: WebSphere Application Server and Oracle WebLogic Server only. Click **Test Database Connection** to test the connection to the database by using the database user name, database server name, database name, port number, and password that you provided. The test does not create the data sources.
4. Select **File → Save** to save your changes. Saving your changes to disk does not apply the settings to the application server.

Editing the configure LDAP task:

The LDAP information is used to connect Content Engine to the directory service provider to authenticate users.

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. For details on the fields, hover your mouse over the field name to view the property description.
3. Optional: WebSphere Application Server and Oracle WebLogic Server only. Click **Test LDAP Connection** to test the connection to the directory service provider by using the directory service bind user name, host name, port number, and password that you provided.
4. Select **File → Save** to save your changes.

Editing the configure bootstrap properties settings:

The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine.

1. Double-click **Configure Bootstrap Properties** in the Content Engine Task View pane to open the task for editing.
2. Select a value for the **Bootstrap operation** field:

Option	Description
To provide bootstrap information for a new installation profile	Select **Create New**.
To modify an existing deployed EAR file	Select **Modify Existing**.
To upgrade an existing deployed EAR file	Select **Upgrade**.

3. Provide the bootstrap property values. For details on the fields, hover your mouse over the field name to view the property description.
4. Optional: If you selected **Modify Existing** or **Upgrade**, then click **Verify Bootstrap Information** to display the bootstrap information from the modified EAR file. You can verify the information in the modified EAR file for a new installation after you run the task.
5. Select **File → Save** to save your changes.

Editing the deploy application task:

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. 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, Content Search Engine, or customized applications for Content Engine.

To edit the Deploy Application task:

1. Right-click the **Deploy Application** task in the profile pane (left pane), and select **Edit Selected Task**.
2. Provide the property values for your deployment. For details on the fields, hover your mouse over the field name to view the property description..
3. Select **File → Save**.

Applying the property settings by running a specific task

You must run a task to apply the values that you provided.

"Applying the JDBC data source settings" on page 247
Your JDBC data source settings are stored when you save the task, but the settings are not applied to the application server until you run the task.

"Applying the LDAP settings" on page 247
Your LDAP settings are stored when you save the task, but the settings are not applied to the application server until you run the task.

"Applying the bootstrap properties settings" on page 247
The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine. Your bootstrap settings are stored when you save the task, but the settings are not applied to the application server until you run the task.

"Deploying the application"
Your Deploy Application task settings are stored when you save the task, but the Content Engine EAR file is not deployed to the application server until you run the task.

Applying the JDBC data source settings:

Your JDBC data source settings are stored when you save the task, but the settings are not applied to the application server until you run the task.

1. Select the configure data sources task that you want to run.
   - Right-click **Configure GCD JDBC Data Sources** in the Content Engine Task View pane, and select **Run Task**.
   - Right-click **Configure Object Store JDBC Data Sources** in the Content Engine Task View pane, and select **Run Task**.

   Running the configuration task can take a few minutes.
2. Close the Configure JDBC Data Sources task pane.

The task execution status messages are displayed in the Console pane below the JDBC data source properties.

Applying the LDAP settings:

Your LDAP settings are stored when you save the task, but the settings are not applied to the application server until you run the task.

1. Right-click **Configure LDAP** in the Content Engine Task View pane, and then select **Run Task**. Running the configuration task can take a few minutes.
2. Close the Configure LDAP task pane.

The task execution status messages are displayed in the Console pane below the LDAP properties.

Applying the bootstrap properties settings:

The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine. Your bootstrap settings are stored when you save the task, but the settings are not applied to the application server until you run the task.

1. Right-click **Configure Bootstrap Properties** in the Content Engine Task View pane, and then select **Run Task**. Running the configuration task can take a few minutes.
2. Optional: If you selected **Create New**, then click **Verify Bootstrap Information** to display the bootstrap information from the modified EAR file.
3. Close the Configure Bootstrap properties task pane.

The task execution status messages are displayed in the Console pane below the bootstrap properties.

Deploying the application:

Your Deploy Application task settings are stored when you save the task, but the Content Engine EAR file is not deployed to the application server until you run the task.

1. Right-click the **Deploy Application** task in the left pane, and then select **Run Task**. Running the deployment task will take a few minutes.
2. Close the Deploy Application properties task pane.

The task execution status messages are displayed in the Console pane below the Deploy Application task properties.

Adding an additional task to your profile

A profile can contain an unlimited number of tasks. You can configure more than one Configure Object Store JDBC Data Sources task, more than one Configure LDAP task, or more than one Configure Bootstrap Properties task. You can add a new task for a task type that you do not already have in the profile.

The default configuration profile contains the following tasks:

- Configure GCD JDBC Data Sources
- Configure Object Store JDBC Data Sources
- Configure LDAP
- Configure Bootstrap Properties
- Deploy Application

You can add a new task whenever the following conditions apply:

- You do not already have an existing task of that type in the profile. You can have only one Configure GCD JDBC Data Sources task or one Deploy Application task.
- You have more than one object store in your site.
- You have multiple LDAP realms in your site.
- You must modify or upgrade you bootstrap properties.

To add a new task to your profile:

1. If your configuration profile is not open in Configuration Manager, open the profile.
2. Right-click any ***task name*** in the profile pane, and select **Add New Task**.
3. In the pop-up menu, select the ***task name*** that you want to create. The new task is added to the profile. If a task of the same type exists, the new task name begins with "New_."
4. Optional: Rename the task to provide a more useful name.
   a. Right-click the new ***task name***, and select **Rename Task**.
   b. Enter a useful name for the task, such as `Configure Object Store 2 JDBC Data Sources` or `Configure Bootstrap Properties for Upgrade`.
   c. Click **OK**.

Deleting a task from a profile

You can delete any unneeded tasks from your profile.

The default configuration profile contains the following tasks:

- Configure GCD JDBC Data Sources
- Configure Object Store JDBC Data Sources
- Configure LDAP
- Configure Bootstrap Properties
- Deploy Application

When you delete a task, all the property values are removed. If you later need the task, you will have to add a new task and re-enter all your values.

To delete a task from your profile:

1. If your configuration profile is not open in Configuration Manager, open the profile.
2. Right-click the ***task name*** that you want to remove, and select **Delete Selected Task**.
3. In the confirmation message box, click **OK**.

Running all tasks at the same time

You can run all the tasks in a profile at the same time. Disabled tasks will not run.

To run all tasks in a profile:

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 All Tasks command:
   - Click **Run All Tasks** in the Content Engine Task View pane toolbar.
   - Select **File → Run All**.

   Important: Tasks will not complete if you have not entered passwords correctly during the current Configuration Manager session. See "Handling passwords in Configuration Manager" on page 231.

The Console pane displays the task execution messages.

Running a single task

You can run each configuration task individually. Disabled tasks will not run.

To run a selected 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 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.

   Important: Tasks will not complete if you have not entered passwords correctly during the current Configuration Manager session. See "Handling passwords in Configuration Manager" on page 231.

The Console pane displays the task execution messages.

Checking the task status

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.

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.

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.

Viewing 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. Subsequently running a task will replace the displayed session log with the current task status. To redisplay the session log, repeat this procedure as needed.

Saving your changes to a task or profile

You can save your profile and task settings at any time.

Use one of these methods to save changes to the currently open task:

- Click **Save** in the toolbar.
- Select **File** → **Save**.

configmgr.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/configmgr.ini file.

Windows example

```
 -vm
C:\Program Files\IBM\FileNet\ContentEngine\_cejvm\bin
```

Configuration Manager command-line reference

Configuration Manager can be run from a command line. This section covers the syntax for the command-line version of Configuration Manager.

"Running Configuration Manager commands" on page 251

From the command line, you can generate the configuration XML files, run a

configuration task to apply the settings in the configuration XML file, and check the status of a task. Use the following syntax to enter the Configuration Manager commands.

Running Configuration Manager commands

From the command line, you can generate the configuration XML files, run a configuration task to apply the settings in the configuration XML file, and check the status of a task. Use the following syntax to enter the Configuration Manager commands.

Use one of these commands to run the Configuration Manager command line:

Operating System	File Name
Windows	*ce_install_path*\tools\configure\configmgr_cl.exe

"How to read the syntax diagrams" on page 252
Syntax diagrams describe how you must enter commands and what options are available.

"**checkstatus** command" on page 252
The **checkstatus** command checks the status of the specified configuration task. The command name is not case sensitive.

"**execute** command" on page 257
The **execute** command applies the settings from a configuration XML file for the specified configuration task. The command name is not case sensitive.

"**generateconfig** command" on page 261
The **generateconfig** command generates the configuration XML file for the specified configuration task. The command name is not case sensitive.

"**generateupgrade** command (with Servers.xml file)" on page 267
The **generateupgrade** command generates the configuration XML files for upgrading an existing Content Engine. The **generateupgrade** command has two syntax formats, depending on whether you have a valid copy of the Servers.xml file in the directory where Content Engine is installed. The command name is not case sensitive.

"**generateupgrade** command (without Servers.xml file)" on page 268
The **generateupgrade** command generates the configuration XML files for upgrading an existing Content Engine. The **generateupgrade** command has two syntax formats, depending on whether you have a valid copy of the Servers.xml file in the directory where Content Engine is installed. The command name is not case sensitive.

"**gui** command" on page 270
The **gui** command opens the Configuration Manager graphical user interface. The command is not case sensitive.

"**listservers** command" on page 270
The **listservers** command displays a list of the currently deployed Content Engine servers. Only servers that are included in the *ce_install_path*\Servers.xml file are listed, where *ce_install_path* is the location where Content Engine is installed. You must supply the server names when you create an upgrade profile with the **generateUpgrade** command.

"**listtasks** command" on page 270
The **listtasks** command displays a list of the tasks and the task files in the configuration profile. The command name is not case sensitive.

"**movetask** command" on page 274
The **movetask** command moves a task to a different position in the list of tasks. The task position determines the order that the tasks are run when you run all the tasks at the same time. You use the **listtask** command to display the task order. The command names are not case sensitive.

"**removetask** command" on page 277
The **removetask** command removes the specified task from the configuration profile. When you remove the task, the configuration XML file is deleted from the profile directory. The command name is not case sensitive.

"**storepasswords** command" on page 280
The **storepasswords** command prompts for passwords that are blank in a profile and stores the encrypted passwords in the file. Storing encrypted passwords might not be FIPS 140-2 compliant. You can run the command for a single task or for all tasks in the profile. The command name is not case sensitive.

How to read the syntax diagrams

Syntax diagrams describe how you must enter commands and what options are available.

The syntax topics uses several conventions to indicate variable, parameters, required items, and optional items. Enter all commands on a single line, even if the command or syntax examples wrap to the next line.

```
command_name -option_1 variable_1 [-option_2 variable_2]
 [-option_3 variable_3 | -option_4]
```

Where:

command_name
The **command_name** is required.

-option_1
The **-option_1** parameter is a required parameter.

variable_1
The *variable_1* value is a required variable for the **-option_1** parameter.

[-option_2 *variable_2***]**
Square braces [] indicate optional items. The **-option_2** parameter with its value is optional.

-option_3 *variable_3* **|** **-option_4**
A vertical bar indicates a choice of parameters. Use the **-option_3** parameter with its value, or use the **-option_4** parameter. In this example, both items are optional, and you can use only one or the other.

checkstatus command

The **checkstatus** command checks the status of the specified configuration task. The command name is not case sensitive.

checkstatus command syntax

The following syntax includes line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

```
configmgr_cl checkstatus [-task task_type | -taskfile task_file_name]
 -profile myprofile [-help]
```

checkstatus command parameters

-task *task_type*

The **-task** *task_type* parameter specifies which task to use for the status check. You can omit the **-task** *task_type* parameter if you want to check all of the tasks or if you specify the **-taskfile** *task_file_name* parameter. The *task_type* value is not case sensitive. The following table lists the valid task names, the associated configuration XML file, and a description of the Content Engine settings affected by the task.

Table 27. task_type values

Option	Configuration file	Description

omitted	`configurebootstrap.xml`
	`configurebootstrap.`*`n`*`.xml`
	`configurejdbcgcd.xml`
	`configurejdbcos.xml`
	`configurejdbcos.`*`n`*`.xml`
	`configureldap.xml`
	`configureldap.`*`n`*`.xml`
	`configureloginmodules.xml`
	`deployapplication.xml`
	Where *n* is an integer starting with 2
		If you omit the `-task` *`task_type`* parameter and the **-taskfile** *task_file_name* parameter, then the status for all the configuration files in the profile is displayed.

Table 27. task_type values (continued)

Option	Configuration file	Description
`configurebootstrap`	`configurebootstrap.xml` `configurebootstrap.`*n*`.xml`, where *n* is an integer starting with 2	Checks status for applying the settings for the Content Engine bootstrap on the application server. The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine When you generate a second bootstrap configuration file, it is named `configurebootstrap.2.xml`. The filename increments for each new file you generate. You cannot change the filename, but you can edit the value in the file for the name of the task. For example, you might must check the status for the initial bootstrap task for the new profile and to check the status for modifying the EAR file to apply a fix pack. If your profile contains more than one `configurebootstrap` task, then you must specify the **-taskfile** *task_file_name* parameter to identify the task to check.
`configurejdbcgcd`	`configurejdbcgcd.xml`	Checks the status for configuring the JDBC connections to the Global Configuration Data (GCD) database used by Content Engine.

Table 27. task_type values (continued)

Option	Configuration file	Description
`configurejdbcos`	`configurejdbcos.xml` `configurejdbcos.`*n*`.xml`, where *n* is an integer starting with 2	Checks the status for configuring JDBC connections to a single object store database used by Content Engine. You need to generate, edit, and apply the `configurejdbcos` task settings for each object store in your database. When you generate a second object store JDBC configuration file, it is named `configurejdbcos.2.xml`. The filename increments for each new file you generate. You cannot change the filename, but you can edit the value in the file for the name of the task. If your profile contains more than one `configurejdbcos` task, then you must specify the **-taskfile** *task_file_name* parameter to identify the task to check.
`configureLDAP`	`configureldap.xml` `configureldap.`*n*`.xml`, where *n* is an integer starting with 2	Checks status for configuring the connection to the directory server for authenticating Content Engine users. (WebSphere Application Server or Oracle WebLogic Server only.) If you generate a second LDAP configuration file, then it is named `configureldap.2.xml`. The filename increments for each new file you generate. You cannot change the filename, but you can edit the value in the file for the name of the task. If your profile contains more than one `ConfigureLDAP` task, then you must specify the **-taskfile** *task_file_name* parameter to identify the task to check.

Table 27. task_type values (continued)

Option	Configuration file	Description
`configureloginmodules`	`configureloginmodules.xml`	(WebSphere Application Server or JBoss Application Server only.) Checks status for creating the login modules for the Content Engine application.
`deployapplication`	`deployapplication.xml`	Checks status for deploying the Content Engine application on the application server.

-taskfile *task_file_name*
The **-taskfile** *task_file_name* parameter specifies the configuration XML file to use.

If only one task file exists for the *task_type*, then the **-taskfile** *task_file_name* parameter is optional.

If more than one task file for the *task_type* exists, then you must include the **-taskfile** *task_file_name* parameter. You can omit the **-task** *task_type* parameter when you specify the **-taskfile** *task_file_name* parameter.

-profile *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
- The absolute path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.

-help
The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

checkstatus command examples

The following examples include line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

Check the status of a profile with only one file for the `configurejdbcos` task.
The following command checks the status of the `configurejdbcos` task in the *ce_install_path*`/tools/configure/profiles/wstdb2jdbc` directory:

```
configmgr_cl checkstatus -task configurejbcos -profile wstdb2jdbc
```

Check the status of a profile with several files for the configurejdbcos task.

The following command checks the status of the configurejdbcos.2.xml task file in the *ce_install_path*/tools/configure/profiles/wstdb2jdbc directory:

```
configmgr_cl checkstatus -taskfile configurejdbcos.2.xml
-profile wstdb2jdbc
```

Check the status for creating the login modules.

The following command checks the status of the configureloginmodules task in the *ce_install_path*/tools/configure/profiles/wstdb2jdbc directory:

```
configmgr_cl checkstatus -task configureloginmodules
-profile wstdb2jdbc
```

Display the help for the checkstatus command.

The following command displays the help for the **checkstatus** command:

```
configmgr_cl checkstatus -help
```

execute command

The **execute** command applies the settings from a configuration XML file for the specified configuration task. The command name is not case sensitive.

execute command syntax

The following syntax includes line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

```
configmgr_cl execute [-task task_type | -taskfile task_file_name]
 -profile myprofile [-silent] [-force] [-help]
```

execute command parameters

-task *task_type*

The **-task** *task_type* parameter is indicates which task to run. You can omit the **-task** *task_type* parameter if you want to run all of the tasks or if you specify the **-taskfile** *task_file_name* parameter. The *task_type* value is not case sensitive. The following table lists the valid task names, the associated configuration XML file, and a description of the Content Engine settings affected by the task.

Table 28. task_name values

Option	Configuration file to execute	Description
omitted	configurebootstrap.xml configurebootstrap.*n*.xml configurejdbcgcd.xml configurejdbcos.xml configurejdbcos.*n*.xml configureldap.xml configureldap.*n*.xml configureloginmodules.xml deployapplication.xml where *n* is an integer starting with 2	If you omit the -task *task_type* parameter and the **-taskfile** *task_file_name* parameter, then all the configuration files in the path are run. Any configuration XML file that has the **enabled** attribute value in the **<configuration>** tag set to false is skipped.

Table 28. task_name values (continued)

Option	Configuration file to execute	Description
`configurebootstrap`	`configurebootstrap.xml` `configurebootstrap.`*n*`.xml`, where *n* is an integer starting with 2	Applies the settings for the Content Engine bootstrap on the application server. The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine When you generate a second bootstrap configuration file, it is named `configurebootstrap.2.xml`. The filename increments for each new file you generate. You cannot change the filename, but you can edit the value in the file for the name of the task. For example, you might must run the initial bootstrap task for the new profile and then later run another task for modifying the EAR file to apply a fix pack. If your profile contains more than one `configurebootstrap` task, then you must specify the **-taskfile** *task_file_name* parameter to identify the task to run.
`configurejdbcgcd`	`configurejdbcgcd.xml`	Applies the settings for configuring the JDBC connections to the Global Configuration Data (GCD) database used by Content Engine.

Table 28. task_name values (continued)

Option	Configuration file to execute	Description
`configurejdbcos`	`configurejdbcos.xml` `configurejdbcos.`*n*`.xml`, where *n* is an integer starting with 2	Applies the settings for configuring JDBC connections to a single object store database used by Content Engine. You need to generate, edit, and apply the `configurejdbcos` task settings for each object store in your database. When you generate a second object store JDBC configuration file, it is named `configurejdbcos.2.xml`. The filename increments for each new file you generate. You can edit the file name as needed. If your profile contains more than one `configurejdbcos` task, then you must specify the **-taskfile** *task_file_name* parameter to identify the task to run.
configureldap	`configureldap.xml` `configureldap.`*n*`.xml`, where *n* is an integer starting with 2	Configures the connection to the directory server for authenticating Content Engine users. WebSphere Application Server or Oracle WebLogic Server only.) If you generate a second LDAP configuration file, then it is named `configureldap.2.xml`. The filename increments for each new file you generate. You can rename the file as needed. If your profile contains more than one `configureldap` task, then you must specify the **-taskfile** *task_file_name* parameter to identify the task to run.
`configureloginmodules`	`configureloginmodules.xml`	(WebSphere Application Server or JBoss Application Server only.) Creates the login modules for the Content Engine application.
`deployapplication`	`deployapplication.xml`	Deploys the Content Engine application on the application server.

Table 28. task_name values (continued)

Option	Configuration file to execute	Description
`registerem`	`registerem.xml`	Windows only. Registers or unregistersEnterprise Manager from the Windows Registry.

-taskfile *task_file_name*
The **-taskfile** *task_file_name* parameter specifies the configuration XML file to use.

If only one task file exists for the *task_type*, then the **-taskfile** *task_file_name* parameter is optional.

If more than one task file for the *task_type* exists, then you must include the **-taskfile** *task_file_name* parameter. You can omit the **-task** *task_type* parameter when you specify the **-taskfile** *task_file_name* parameter.

-profile *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
- The absolute path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.

-silent
The **-silent** parameter is optional. When **-silent** is specified, then no prompts or informational messages are displayed in the console, but the errors are written to the log. Failure messages and validation error messages are displayed as needed, such as messages about missing passwords or invalid port numbers. If you run the execute command to run all the tasks in a profile, and you specify the **-silent** parameter, you must also specify the **-force** parameter.

-force
The **-force** parameter is optional and only applies when the **-silent** parameter is used. When **-force** is specified, then the task is run without pausing for required responses to validation error messages, such as messages about missing passwords or invalid port numbers.

-help
The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

execute command examples

The following examples include line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

Run all the tasks in a profile.

The following command runs all the tasks in the wstdb2jdbc profile, which is located in the *ce_install_path*/tools/configure/profiles/wstdb2jdbc directory. If you include the **-silent** parameter in the command, you must also include the **-force** parameter.

```
configmgr_cl execute -profile wstdb2jdbc
```

Run the configurejdbcos task in a profile with one configurejdbcos task.

The following command runs the configurejdbc task in the *ce_install_path*/tools/configure/profiles/wstdb2jdbc directory:

```
configmgr_cl execute -task configurejdbcos -profile wstdb2jdbc
```

Run a single configurejdbcos task in a profile with multiple configurejdbcos tasks: The following command runs the configurejdbcos.2.xml task file in the *ce_install_path*/tools/configure/profiles/wstdb2jdbc directory:

```
configmgr_cl execute -taskfile configurejdbc.2.xml -profile wstdb2jdbc
```

Display the help for the execute command.

The following command displays the help for the **execute** command:

```
configmgr_cl execute -help
```

generateconfig command

The **generateconfig** command generates the configuration XML file for the specified configuration task. The command name is not case sensitive.

generateconfig command syntax

The following syntax includes line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

```
configmgr_cl generateconfig -appserver app_server_type
-repositorytype ldap_repository_type
 -db database_type -ldap ldap_type -bootstrap bootstrap_operation
 -deploy deploy_type -task task_type -taskname display_name
-profile myprofile [-silent] [-force] [-help]
```

generateconfig command parameters

-appserver *appserver_name*

The **-appserver** *appserver_type* specifies the type of application server and must be WebSphere, WebLogic, or JBoss.

-repositorytype *ldap_repository_type*

WebSphere Application Server only. The **-repositorytype** *ldap_repository_type* parameter is required only when you are generating the XML files. This parameter specifies the type of LDAP repository to use and must be standalone or federated.

-db *database_type*

The **-db** *database_type* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the configurejdbcgcd or configurejdbcos option. This parameter specifies the type of database to be used by Content Engine and must be mssql, oracle, oracle_rac, db2, or db2zos.

-ldap *ldap_type*

The **-ldap** *ldap_type* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `configureldap` option. This parameter specifies the type of directory service repository that Content Engine uses for authenticating users and must be `activedirectory`, `adam`, `edirectory`, `oid`, `sunjava`, or `tivoli`. The `adam` option applies to both Microsoft ADAM and AD LDS.

-bootstrap *bootstrap_operation*

The **-bootstrap** *bootstrap_operation* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `configurebootstrap` option. This parameter specifies the bootstrap operation for the profile and must be `new`, `modify`, or `upgrade`.

-deploy *deploy_type*

The **-deploy** *deploy_type* parameter is required only when you are generating all the files at the same time or when you are generating a single file by using the `deployapplication` option. This parameter specifies the type of Content Engine deployment. The value must be `standard`, `cluster`, or `netdeploy` (network deployment).

Specify `standard` if you are deploying Content Engine to a stand-alone (that is, a server that is not managed or clustered) WebSphere Application Server, Oracle WebLogic Server, or JBoss Application Server.

Specify `cluster` if you are deploying Content Engine to a WebSphere Application Server, Oracle WebLogic Server, or JBoss Application Server cluster.

Specify `netdeploy` if you are deploying Content Engine to a managed WebSphere Application Server instance. That is, you are using Network Deployment to manage individual servers that are not necessarily in a cluster.

-task *task_type*

The **-task** *task_type* parameter indicates which task to generate. You can omit the **-task** *task_type* parameter if you want to generate all the tasks or if you specify the **-taskfile** *task_file_name* parameter. The *task_type* value is not case sensitive. The following table lists the valid task names, the associated configuration XML file, and a description of the Content Engine settings affected by the task.

Table 29. task_type values

Option	Configuration file to generate	Description

omitted	`applicationserver.xml`
	`configurebootstrap.xml`
	`configurejdbcgcd.xml`
	`configurejdbcos.xml`
	`configureldap.xml`
	`configureloginmodules.xml`
	`deployapplication.xml`
		If you omit the `-task` *`task_type`* parameter and the **-taskfile** *task_file_name* parameter, then all the default configuration files for a profile are created.

Table 29. task_type values (continued)

Option	Configuration file to generate	Description

`configurebootstrap`	`applicationserver.xml`
	
	`configurebootstrap.xml`
	
	`configurebootstrap.`*n*`.xml`, where *n* is an integer starting with 2
		Generates the file for the application server properties and the file with the settings for the Content Engine bootstrap on the application server. The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine
		
		When you generate a second bootstrap configuration file, it is named `configurebootstrap.2.xml`. The filename increments for each new file you generate. You cannot change the filename, but you can edit the value in the file for the name of the task. For example, you might must generate the initial bootstrap task for the new profile and then generate a second bootstrap task for modifying the EAR file to apply a fix pack.
		
		If the profile already contains an `applicationserver.xml` file, the existing file is retained.

`configurejdbcgcd`	`applicationserver.xml`
	
	`configurejdbcgcd.xml`
		Generates the file for the application server properties and the file with the settings for configuring the JDBC connections to the Global Configuration Data (CGD) database used by Content Engine.
		
		If the profile already contains an `applicationserver.xml` file, the existing file is retained.

Table 29. task_type values (continued)

Option	Configuration file to generate	Description

`configurejdbcos`	`applicationserver.xml`
	
	`configurejdbcos.xml`
	
	`configurejdbcos.`*n*`.xml`, where *n* is an integer starting with 2
		Generates the file for the application server properties and the file with the settings for configuring JDBC connections to a single object store database used by Content Engine. You need to generate, edit, and apply the `configurejdbcos` task settings for each object store in your database.
		
		When you generate a second object store JDBC configuration file, it is named `configurejdbcos.2.xml`. The filename increments for each new file you generate. You cannot change the filename, but you can edit the value in the file for the name of the task.
		
		If the profile already contains an `applicationserver.xml` file, the existing file is retained.

`configureldap`	`applicationserver.xml`
	
	`configureldap.xml`
	
	`configureldap.`*n*`.xml`, where *n* is an integer starting with 2
		Generates the file for the application server properties and the file for configuring the connection to the directory server for authenticating Content Engine users.
		
		(WebSphere Application Server or Oracle WebLogic Server only.) When you generate a second LDAP configuration file, it is named `configureldap.2.xml`. The filename increments for each new file you generate. You cannot change the filename, but you can edit the value in the file for the name of the task.
		
		If the profile already contains an `applicationserver.xml` file, the existing file is retained.

Table 29. task_type values (continued)

Option	Configuration file to generate	Description

`configureloginmodules`	`applicationserver.xml`
	
	`configureloginmodules.xml`
		(WebSphere Application Server or JBoss Application Server only.) Generates the file for the application server properties and the files for the login modules for the Content Engine application.
		
		If the profile already contains an `applicationserver.xml` file, the existing file is retained.

`deployapplication`	`applicationserver.xml`
	
	`deployapplication.xml`
		Generates the file for the application server properties and the file with settings for deploying the Content Engine application on the application server.
		
		If the profile already contains an `applicationserver.xml` file, the existing file is retained.

`registerem`	`registerem.xml`	Generates the file for registering or unregisteringEnterprise Manager from the Windows Registry.

-taskname *display_name*

The **-taskname** *display_name* parameter is optional and is valid only for generating the files. This parameter specifies the value for the `displayName` attribute in the configuration XML file. If the display name includes spaces, put the entire name inside quotation marks. The display name is used in the graphical user interface to identify the task.

-profile *myprofile*

The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
- The absolute path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.

-silent
The **-silent** parameter is optional. When **-silent** is specified, then no prompts or informational messages are displayed in the console, but the errors are written to the log. Failure messages and validation error messages are displayed as needed, such as messages about missing passwords or invalid port numbers. If you run the execute command to run all the tasks in a profile, and you specify the **-silent** parameter, you must also specify the **-force** parameter.

-force
The **-force** parameter is optional and only applies when the **-silent** parameter is used. When **-force** is specified, then the task is run without pausing for required responses to validation error messages, such as messages about missing passwords or invalid port numbers.

-help
The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

generateconfig command examples

The following examples include line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

Generate all configuration files at the same time.
The following command generates all the configuration XML files for a new installation profile for a standard deployment on WebSphere with IBM Tivoli Directory Server that uses a stand-alone LDAP repository and DB2 in the *ce_install_path*/tools/configure/profiles/wstdb2 directory:

```
configmgr_cl generateconfig -appserver websphere -repositorytype standalone
 -db db2 -ldap tivoli -bootstrap new -deploy standard -profile wstdb2
```

Generate only the `configurejdbcos` task file for an object store.
The following command generates only the configurejdbcos.*n*.xml file for a new installation profile for deployment on WebSphere that uses a stand-alone LDAP repository in the *ce_install_path*/tools/configure/profiles/wstdb2 directory:

```
configmgr_cl generateconfig -appserver websphere -repositorytype standalone
 -task configurejdbcos -profile wstdb2jdbc
```

Generate only the `configurejdbcos` task file for an object store and provide a display name for the task.
The following command generates only the configurejdbcos.*n*.xml file for a new installation profile for deployment on WebSphere that uses a stand-alone LDAP repository in the *ce_install_path*/tools/configure/profiles/wstdb2 directory and uses a display name of Configure Object Store OS23 Data Sources:

```
configmgr_cl generateconfig -appserver websphere -repositorytype standalone
 -task configurejdbcos -taskname "Configure Object Store OS23 Data Sources"
 -profile wstdb2jdbc
```

Display the help for the generateconfig command.
The following command displays the help for the **generateconfig** command:

```
configmgr_cl generateconfig -help
```

generateupgrade command (with Servers.xml file)

The **generateupgrade** command generates the configuration XML files for upgrading an existing Content Engine. The **generateupgrade** command has two syntax formats, depending on whether you have a valid copy of the `Servers.xml` file in the directory where Content Engine is installed. The command name is not case sensitive.

generateupgrade command syntax

Use the following syntax for the **generateupgrade** command if you have an existing `Servers.XML` file with valid server information in the directory where Content Engine is installed (`ce_install_path`).

The following syntax includes line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

```
configmgr_cl generateupgrade  -server server_name -deploy deploy_type
-profile myprofile [-silent] [-force] [-help]
```

generateupgrade command parameters

-server *server_name*

The **-server** *server_name* parameter indicates the server to create the upgrade profile for. Use the **listservers** command to display a list of valid *server_name* values before you run the **generateupgrade** command.

-profile *myprofile*

The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*`/tools/configure/profiles` directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2`.
- The absolute path to the profile input file, such as `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"` or `opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg`.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter `"C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg"`.

-silent

The **-silent** parameter is optional. When **-silent** is specified, then no prompts or informational messages are displayed in the console, but the errors are written to the log. Failure messages and validation error messages are displayed as needed, such as messages about missing passwords or invalid port numbers. If you run the execute command to run all the tasks in a profile, and you specify the **-silent** parameter, you must also specify the **-force** parameter.

-help
The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

generateupgrade command examples

Generate the upgrade configuration files when Servers.xml file exists.
The following command generates all the upgrade configuration XML files for a server named ceserver1 from an existing Content Engine for the profile UpgradeServer1 in the default profile directory:

```
configmgr_cl generateupgrade -server ceserver1 -profile UpgradeServer1
```

Generate the upgrade configuration files when Servers.xml file exists, but does not have the deployment type.
The following command generates all the upgrade configuration XML files for a server named ceserver1 from an existing Content Engine for the profile UpgradeServer1 in the default profile directory:

```
configmgr_cl generateupgrade -server ceserver1 -deploy cluster
-profile UpgradeServer1
```

Display the help for the generateupgrade command.
The following command displays the help for the **generateupgrade** command:

```
configmgr_cl generateupgrade -help
```

generateupgrade command (without Servers.xml file)

The **generateupgrade** command generates the configuration XML files for upgrading an existing Content Engine. The **generateupgrade** command has two syntax formats, depending on whether you have a valid copy of the Servers.xml file in the directory where Content Engine is installed. The command name is not case sensitive.

generateupgrade command syntax

Use the following syntax for the **generateupgrade** command if you do not have an existing Servers.XML file with valid server information in the directory where Content Engine is installed (ce_install_path).

The following syntax includes line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

```
configmgr_cl generateupgrade -appserver app_server_type -server server_name
-deploy deploy_type -profile myprofile [-silent]
[-force] [-help]
```

generateupgrade command parameters

-appserver *appserver_type*
The **-appserver** *appserver_type* parameter is required only if the *ce_install_path*/Servers.xml file does not exist or does not contain any servers. This parameter specifies the type of application server and must be one of the following values: WebSphere, WebLogic, or JBoss.

-server *server_name*
The **-server** *server_name* parameter indicates the server to create the upgrade profile for. Use the listservers command to display a list of valid *server_name* values before you run the generateupgrade command.

-deploy *deploy_type*
The **-deploy** *deploy_type* parameter is required only if the *ce_install_path*/

Servers.xml file does not exist or does not contain the deployment type for the selected server. This parameter specifies the type of Content Engine deployment. If a value for the deployment type exists in the Servers.xml file for the selected server, then the value from the Servers.xml file is used instead the value you specify on the command line.

Valid values are standard, cluster, or netdeploy (network deployment).

Specify standard if you are deploying Content Engine to a stand-alone (that is, a server that is not managed or clustered) WebSphere Application Server, Oracle WebLogic Server, or JBoss Application Server.

Specify cluster if you are deploying Content Engine to a WebSphere Application Server, Oracle WebLogic Server, or JBoss Application Server cluster.

Specify netdeploy if you are deploying Content Engine to a managedWebSphere Application Server instance. That is, you are using Network Deployment to manage individual servers that are not necessarily in a cluster.

-profile *myprofile*

The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
- The absolute path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".

-silent

The **-silent** parameter is optional. When **-silent** is specified, then no prompts or informational messages are displayed in the console, but the errors are written to the log. Failure messages and validation error messages are displayed as needed, such as messages about missing passwords or invalid port numbers. If you run the execute command to run all the tasks in a profile, and you specify the **-silent** parameter, you must also specify the **-force** parameter.

-help

The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

generateupgrade command examples

Generate the upgrade configuration files when Servers.xml file does not exists.

The following command generates the upgrade configuration XML files for

a server named ceserver1 from an existing Content Engine cluster deployment that uses the profile UpgradeServer1 in the default profile directory:

```
configmgr_cl generateupgrade -deploy cluster -profile UpgradeServer1
```

Display the help for the generateupgrade command.

The following command displays the help for the **generateupgrade** command:

```
configmgr_cl generateupgrade -help
```

gui command

The **gui** command opens the Configuration Manager graphical user interface. The command is not case sensitive.

gui command syntax

```
configmgr_cl gui
```

gui command Example

The following command starts the Configuration Manager graphical user interface:

```
configmgr_cl gui
```

listservers command

The **listservers** command displays a list of the currently deployed Content Engine servers. Only servers that are included in the *ce_install_path*\Servers.xml file are listed, where *ce_install_path* is the location where Content Engine is installed. You must supply the server names when you create an upgrade profile with the **generateUpgrade** command.

listservers command syntax

```
configmgr_cl listservers [-help]
```

listservers command examples

List the deployed Content Engine servers.

The following command lists the deployed Content Engine servers.

```
configmgr_cl listservers
```

A message like the following message is displayed:

```
These are the currently deployed Content Engine servers:

ce_server01Node01Cell01
    Application Server: WebSphere
    Ear file: C:\Program Files\IBM\FileNet\ContentEngine\lib\deployed\
Engine-ws.ear
    No profile is set.  Use the generateUpgrade command to generate a
profile to upgrade this server.
    Deployment Type: Network
```

Display the help for the listservers command.

The following command displays the help for the **listservers** command:

```
configmgr_cl listservers -help
```

listtasks command

The **listtasks** command displays a list of the tasks and the task files in the configuration profile. The command name is not case sensitive.

listtasks command syntax

```
configmgr_cl listtasks [-task task_type]  -profile myprofile
 [-help]
```

listtasks command parameters

-task *task_type*

The **-task** *task_type* parameter is optional and indicates which task type to list. The *task_type* value is not case sensitive. The following table lists the valid task names, the associated configuration XML file, and a description of the Content Engine settings affected by the task.

Table 30. task_type values

Option	Configuration files	Description
omitted	configurebootstrap.xml configurebootstrap.*n*.xml configurejdbcgcd.xml configurejdbcos.xml configurejdbcos.*n*.xml configureldap.xml configureldap.*n*.xml configureloginmodules.xml deployapplication.xml Where *n* is an integer starting with 2	If you omit the -task *task_type* parameter, then all the configuration tasks and the associated task files for the profile are listed.
configurebootstrap	configurebootstrap.xml configurebootstrap.*n*.xml, where *n* is an integer starting with 2	Lists the task for configuring the settings for the Content Engine bootstrap on the application server. The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine When you generate a second bootstrap configuration file, it is named configurebootstrap.2.xml. The filename increments for each new file you generate.
configurejdbcgcd	configurejdbcgcd.xml	Lists the task for configuring the settings for the JDBC connections to the Global Configuration Data (CGD) database used by Content Engine.

Table 30. task_type values (continued)

Option	Configuration files	Description
`configurejdbcos`	`configurejdbcos.xml` `configurejdbcos.`*n*`.xml`, where *n* is an integer starting with 2	Lists the task for configuring the settings for the JDBC connections to a single object store database used by Content Engine. You must generate, edit, and apply the `configurejdbcos` task settings for each object store in your database. When you generate a second object store JDBC configuration file, it is named `configurejdbcos.2.xml`. The filename increments for each new file you generate.
`configureldap`	`configureldap.xml` `configureldap.`*n*`.xml`, where *n* is an integer starting with 2	Lists the tasks for configuring the connection to the directory server for authenticating Content Engine users. (WebSphere Application Server or Oracle WebLogic Server only) When you generate a second LDAP configuration file, it is named `configureldap.2.xml`. The filename increments for each new file you generate. When you generate a second LDAP configuration file, it is named `configureldap.2.xml`. The filename increments for each new file you generate. You cannot change the filename, but you can edit the value in the file for the name of the task.
`configureloginmodules`	`configureloginmodules.xml`	(WebSphere Application Server or JBoss Application Server only.) Lists the task for configuring the login modules for the Content Engine application.
`deployapplication`	`deployapplication.xml`	Lists the task for deploying the Content Engine application on the application server.

-profile *myprofile*

The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
- The absolute path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".

-help
The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

listtasks command examples

List all the configuration tasks in the profile.

The following command lists all the configuration tasks and the associated configuration XML files in the wstdb2 profile located in the *ce_install_path*/tools/configure/profiles/wstdb2 directory:

```
configmgr_cl listtasks -profile wstdb2
```

A message like the following example is displayed:

```
All tasks in profile wstdb2.  The tasks will be executed in the
positions indicated when executing all tasks:
Task 1:
        Name: Configure GCD JDBC Data Sources
        Type: configurejdbcgcd
        File: configurejdbcgcd.xml
Task 2:
        Name: Configure Object Store JDBC Data Sources
        Type: configurejdbcos
        File: configurejdbcos.xml
Task 3:
        Name: Configure Login Modules
        Type: configureloginmodules
        File: configureloginmodules.xml
Task 4:
        Name: Configure LDAP
        Type: configureldap
        File: configureldap.xml
Task 5:
        Name: Configure Bootstrap Properties
        Type: configurebootstrap
        File: configurebootstrap.xml
Task 6:
        Name: Deploy Application
        Type: deployapplication
        File: deployapplication.xml
```

List all the configurejdbcos tasks in the profile.

The following command lists all the configure JDBC settings for the object store tasks and the associated configuration XML files in the wstdb2 profile located in the *ce_install_path*/tools/configure/profiles/wstdb2 directory:

```
configmgr_cl listtasks -task configurejdbcos -profile wstdb2
```

A message like the following example is displayed:

```
Tasks in profile wstdb2 of the task type configurejdbcos:
Task name: Configure Object Store JDBC Data Sources
        File: configurejdbcos.xml
```

Display the help for the listtasks command.

The following command displays the help for the **listtasks** command:

```
configmgr_cl listtasks -help
```

movetask command

The **movetask** command moves a task to a different position in the list of tasks. The task position determines the order that the tasks are run when you run all the tasks at the same time. You use the **listtask** command to display the task order. The command names are not case sensitive.

movetask command syntax

The following syntax includes line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

```
configmgr_cl movetask -task task_type | -taskfile task_file_name
-position new_position -profile myprofile [-silent][-force][-help]
```

movetask command parameters

-task *task_type*

The **-task** *task_type* parameter indicates which task to move. This parameter must be included if the **-taskfile** *task_file_name* parameter is omitted. The *task_type* value is not case sensitive. The following table lists the valid task names, the associated configuration XML file, and a description of the Content Engine settings affected by the task.

Table 31. task_type values

Option	Configuration files	Description
configurebootstrap	configurebootstrap.xml configurebootstrap.*n*.xml, where *n* is an integer starting with 2	Moves the task for configuring the settings for the Content Engine bootstrap on the application server. The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine When you generate a second bootstrap configuration file, it is named configurebootstrap.2.xml. The filename increments for each new file you generate.

Table 31. task_type values (continued)

Option	Configuration files	Description
`configurejdbcgcd`	`configurejdbcgcd.xml`	Moves the task for configuring the settings for the JDBC connections to the Global Configuration Data (CGD) database used by Content Engine.
`configurejdbcos`	`configurejdbcos.xml` `configurejdbcos.`*n*`.xml`, where *n* is an integer starting with 2	Moves the task for configuring the settings for the JDBC connections to a single object store database used by Content Engine. When you generate a second object store JDBC configuration file, it is named `configurejdbcos.2.xml`. The filename increments for each new file you generate.
`configureldap`	`configureldap.xml` `configureldap.`*n*`.xml`, where *n* is an integer starting with 2	Moves the task for configuring the connection to the directory server for authenticating Content Engine users. (WebSphere Application Server or Oracle WebLogic Server only) When you generate a second LDAP configuration file, it is named `configureldap.2.xml`. The filename increments for each new file you generate. When you generate a second LDAP configuration file, it is named `configureldap.2.xml`. The filename increments for each new file you generate.
`configureloginmodules`	`configureloginmodules.xml`	Moves the task for configuring the login modules for the Content Engine application.
`deployapplication`	`deployapplication.xml`	Moves the task for deploying the Content Engine application on the application server.

-taskfile *task_file_name*

The **-taskfile** *task_file_name* parameter specifies the configuration XML file to use.

If only one task file exists for the *task_type*, then the **-taskfile** *task_file_name* parameter is optional.

If more than one task file for the *task_type* exists, then you must include the **-taskfile** *task_file_name* parameter. You can omit the **-task** *task_type* parameter when you specify the **-taskfile** *task_file_name* parameter.

-position*new_position*
The **-position***new_position* parameter specifies the new position in the list for the item. You can run the **listtasks** to view the list of tasks in the profile and their position before you run the **movetask** command.

-profile *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
- The absolute path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".

-silent
The **-silent** parameter is optional. When **-silent** is specified, then no prompts or informational messages are displayed in the console, but the errors are written to the log. Failure messages and validation error messages are displayed as needed, such as messages about missing passwords or invalid port numbers. If you run the execute command to run all the tasks in a profile, and you specify the **-silent** parameter, you must also specify the **-force** parameter.

-force
The **-force** parameter is optional and only applies when the **-silent** parameter is used. When **-force** is specified, then the task is run without pausing for required responses to validation error messages, such as messages about missing passwords or invalid port numbers.

-help
The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

movetask command examples

Move the task for the configurejdbcos.3.xml file in a profile with more than one configurejdbcos task.

The following command moves the task for the configurejdbcos.3.xml file for the wstdb2 profile located in the *ce_install_path*/tools/configure/profiles/wstdb2 directory to position 1:

```
configmgr_cl movetask -taskfile configurejdbcos.3.xml -position 1
-profile wstdb2
```

Move the `configureloginmodules` task.

The following command moves the `configureloginmodules` task from the default position of task 3 to task 5 in the wstdb2 profile located in the *ce_install_path*/tools/configure/profiles/wstdb2 directory:

```
configmgr_cl movetask -task configureoginmodules -position 5
-profile wstdb2
```

Display the help for the movetask command.

The following command displays the help for the **movetask** command:

```
configmgr_cl movetask -help
```

removetask command

The **removetask** command removes the specified task from the configuration profile. When you remove the task, the configuration XML file is deleted from the profile directory. The command name is not case sensitive.

removetask command syntax

The following syntax includes line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

```
configmgr_cl removetask -task task_type | -taskfile task_file_name
 -profile myprofile [-silent][-force][-help]
```

removetask command parameters

-task *task_type*

The **-task** *task_type* parameter is optional and indicates which task to remove. You can omit the **-task** *task_type* parameter if you specify the **-taskfile** *task_file_name* parameter. The *task_type* value is not case sensitive. The following table lists the valid task names, the associated configuration XML file, and a description of the Content Engine settings affected by the task.

Table 32. task_type values

Option	Configuration file to remove	Description
`configurebootstrap`	`configurebootstrap.xml` `configurebootstrap.`*n*`.xml`, where *n* is an integer starting with 2	Settings for the Content Engine bootstrap on the application server. The bootstrap information is needed for creating the Global Configuration Data and for starting Content Engine When you generate a second bootstrap configuration file, it is named `configurebootstrap.2.xml`. The filename increments for each new file you generate.
`configurejdbcgcd`	`configurejdbcgcd.xml`	Settings for configuring the JDBC connections to the Global Configuration Data (CGD) database used by Content Engine.

Table 32. task_type values (continued)

Option	Configuration file to remove	Description
`configurejdbcos`	`configurejdbcos.xml` `configurejdbcos.`*n*`.xml`, where *n* is an integer starting with 2	Settings for configuring JDBC connections to a single object store database used by Content Engine. You need to generate, edit, and apply the `configurejdbcos` task settings for each object store in your database. If you generate a second object store JDBC configuration file, then it is named `configurejdbcos.2.xml`. The filename increments for each new file you generate.
`configureldap`	`configureldap.xml` `configureldap.`*n*`.xml`, where *n* is an integer starting with 2	Configures the connection to the directory server for authenticating Content Engine users. (WebSphere Application Server or Oracle WebLogic Server only) If you generate a second LDAP configuration file, then it is named `configureldap.2.xml`. The filename increments for each new file you generate. If your profile contains more than one `configureldap` task, then you must specify the **-taskfile** *task_file_name* parameter to identify the task to remove.
`configureloginmodules`	`configureloginmodules.xml`	(WebSphere Application Server or JBoss Application Server only) Creates the login modules for the Content Engine application.
`deployapplication`	`deployapplication.xml`	Deploys the Content Engine application on the application server.

-taskfile *task_file_name*

The **-taskfile** *task_file_name* parameter specifies the configuration XML file to use.

If only one task file exists for the *task_type*, then the **-taskfile** *task_file_name* parameter is optional.

If more than one task file for the *task_type* exists, then you must include the **-taskfile** *task_file_name* parameter. You can omit the **-task** *task_type* parameter when you specify the **-taskfile** *task_file_name* parameter.

-profile *myprofile*

The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
- The absolute path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".

-silent

The **-silent** parameter is optional. When **-silent** is specified, then no prompts or informational messages are displayed in the console, but the errors are written to the log. Failure messages and validation error messages are displayed as needed, such as messages about missing passwords or invalid port numbers. If you run the execute command to run all the tasks in a profile, and you specify the **-silent** parameter, you must also specify the **-force** parameter.

-force

The **-force** parameter is optional and only applies when the **-silent** parameter is used. When **-force** is specified, then the task is run without pausing for required responses to validation error messages, such as messages about missing passwords or invalid port numbers.

-help

The **-help** parameter is optional and displays a brief message on the command syntax instead of running the command.

removetask command examples

Remove the configurejdbcos task from a profile with only one configurejdbcos task. The following command removes the configurejdbcos task and the configurejdbcos.xml file from the profile named wstdb2jdbc_one.

```
configmgr_cl removetask -task configurejdbcos -profile wstdb2jdbc_one
```

Remove the configurejdbcos task from a profile with several configurejdbcos tasks. The following command removes the configurejdbcos task and the configurejdbcos.2.xml file from the profile named wstdb2jdbc_many.

```
configmgr_cl removetask -taskfile configurejdbcos.2.xml
 -profile wstdb2jdbc_many
```

Remove the configurejdbcos task from a profile with several configurejdbcos tasks by using an absolute path to the profile directory. The following command removes the configurejdbcos task and the configurejdbcos.2.xml file from the profile named wstdb2jdbc_many that is located in the c:\temp\myprofiles\wstdb2jdbc_many directory.

```
configmgr_cl removetask -taskfile configurejdbcos.2.xml
-profile  c:\temp\myprofiles\wstdb2jdbc_many
```

Display the help for the removetask command.

The following command displays the help for the **removetask** command:

```
configmgr_cl removetask -help
```

storepasswords command

The **storepasswords** command prompts for passwords that are blank in a profile and stores the encrypted passwords in the file. Storing encrypted passwords might not be FIPS 140-2 compliant. You can run the command for a single task or for all tasks in the profile. The command name is not case sensitive.

storepasswords command syntax

The following syntax includes line breaks to format the command for reading. Enter the command and options on a single line, without any line breaks.

```
configmgr_cl storepasswords [-task task_type | -taskfile task_file_name]
 -profile myprofile [-help]
```

storepasswords command parameters

-task *task_type*

The **-task** *task_type* parameter specifies a specific task to encrypt passwords for. You can omit the **-task** *task_type* parameter if you want to store passwords for all the tasks or if you specify the **-taskfile** *task_file_name* parameter. The *task_name* value is not case sensitive. The following table lists the valid task names, the associated configuration XML file, and a description of the Content Engine settings affected by the task.

Table 33. task_type values

Option	Configuration file	Description
omitted	applicationserver.xml configurebootstrap.xml configurebootstrap.*n*.xml configurejdbcgcd.xml configurejdbcos.xml configurejdbcos.*n*.xml configureldap.xml configureldap.*n*.xml deployapplication.xml Where *n* is an integer starting with 2	If you omit the -task *task_type* parameter and the **-taskfile** *task_file_name* parameter, then you are prompted to enter the passwords for each configuration XML file in the profile. Each password is encrypted before it is added to the XML file.

Table 33. task_type values (continued)

Option	Configuration file	Description
`configurebootstrap`	`configurebootstrap.xml` `configurebootstrap.`*n*`.xml`, where *n* is an integer starting with 2	Encrypts the password for the `BootstrapPassword` property that is used to create the Global Configuration Data and to start Content Engine. If you have more than one `configurebootstrap.`*n*`.xml` file, run the command for each task file.
`configurejdbcgcd`	`configurejdbcgcd.xml`	Encrypts the password for the `DatabasePassword` property that Content Engine uses to access the GCD database.
`configurejdbcos`	`configurejdbcos.xml` `configurejdbcos.`*n*`.xml`, where *n* is an integer starting with 2	Encrypts the password for the `DatabasePassword` property that Content Engine uses to access the object store database. If you have more than one `configurejdbcos.`*n*`.xml` file, run the command for each task file.
`configureldap`	`configureldap.xml` `configureldap.`*n*`.xml`, where *n* is an integer starting with 2	Encrypts the password for the `LDAPBindPassword` property that Content Engine uses to connect to the directory server for authenticating Content Engine users. (WebSphere Application Server or Oracle WebLogic Server only.) If you have more than one `configureldap.`*n*`.xml` file, run the command for each task file.

-taskfile *task_file_name*
The **-taskfile** *task_file_name* parameter specifies the configuration XML file to use.

If only one task file exists for the *task_type*, then the **-taskfile** *task_file_name* parameter is optional.

If more than one task file for the *task_type* exists, then you must include the **-taskfile** *task_file_name* parameter. You can omit the **-task** *task_type* parameter when you specify the **-taskfile** *task_file_name* parameter.

-profile *myprofile*
The **-profile** *myprofile* parameter specifies the profile to use. The *myprofile* value can be one of the following items:

- The name of the profile, such as ce_was_tiv_db2. The profile must be located in the *ce_install_path*/tools/configure/profiles directory, where *ce_install_path* is the location where the Content Engine software is installed.
- The absolute path to the profile directory, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2.
- The absolute path to the profile input file, such as "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg" or opt/IBM/FileNet/ContentEngine/tools/configure/profiles/ce_was_tiv_db2/ce_was_tiv_db2.cfg.

Remember: If the path includes a directory name with spaces, enclose the entire path in quotation marks. For example, enter "C:\Program Files\IBM\FileNet\ContentEngine\tools\configure\profiles\ce_was_tiv_db2\ce_was_tiv_db2.cfg".

storepasswords command examples

Encrypt and save all passwords for a profile.

The following command encrypts and saves passwords for any blank entries in the profile named wstdb2jdbc_one.

```
configmgr_cl storepasswords -profile wstdb2jdbc_one
```

Encrypt and save the passwords for a specific `configurejdbcos` task in a profile with several `configurejdbcos` tasks.

The following command encrypts and saves passwords for any blank entries in the configurejdbcos.2.xml file from the profile named wstdb2jdbc_many.

```
configmgr_cl storepasswords -taskfile configurejdbcos.2.xml
-profile wstdb2jdbc_many
```

Display the help for the storepasswords command.

The following command displays the help for the **storepasswords** command:

```
configmgr_cl storepasswords -help
```

Appendix B. Troubleshooting installation and upgrade

This section provides troubleshooting solutions for problems you might encounter when installing or upgrading IBM FileNet P8 software.

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