



Instructions for Configuring FileNet Connectors for WSM

Web Site Manager 4.1.1

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FileNet Corporation
3565 Harbor Boulevard
Costa Mesa, California 92626
1.800.FILENET (345.3638)
Outside the US, call:
1.714.327.3400
www.filenet.com

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Revision Log

Date	Revision
11/21/2006	Initial document.

Introduction

The Web Site Manager 4.1.1 release provides the following FileNet P8 connectors:

- A read-only connector for content that can be used to connect WSM to a single P8 object store.
- A connector for the Process Engine that can be used to create and process WSM workflows.

Using the P8 content connector,

- WSM authors can search or browse to find FileNet P8 content.
- WSM authors can access FileNet P8 content from WSM in order to display document and folder contents and properties on a web page.
- WSM users can receive notification when a page changes because of any change in the FileNet content that is used on a web page.

The FileNet connectors are an optional component and can be configured when you install WSM or after you install WSM. Alternatively, WSM can be installed without the P8 connectors. This is called a standalone installation. Three modes of connector operations are supported:

- Standalone (using WSM without P8 integration)
- Content connector only
- Content connector and Process Engine connector

In addition to configuring the connectors, you must perform certain steps to prepare your P8 environment. These are the high-level steps for preparing the P8 environment and configuring the connectors:

- [Task 1: Install WSM](#)
- [Task 2: Test the Environments](#)
- [Task 3: Set up LDAP in WSM](#)
- [Task 4: Prepare the Content Engine](#)
- [Task 5: Configure the Object Store](#)
- [Task 6: Prepare the P8 Process Engine](#)
- [Task 7: Configure the CE Connector with the WSM Out-of-the-Box Workflow Capability](#)
- [Task 8: Validate that the Connectors are Functioning](#)

Each step is described in detail in this document.

NOTE Some steps in the procedures require the user to log on with the following privileges:

- As an object store administrator to the Content Engine Enterprise Manager.
- As a Process Engine administrator to the Application Engine.
- As a Site administrator to Workplace.
- As a WSM superuser.

Throughout this guide, we provide `sample code` and examples of **paths**. Where a variable is required, you'll see a suggestion such as `<username>`. Please ensure that you substitute the appropriate values for your configuration.

Who Should Read This Guide

This guide is intended to support the efforts of

- Partners or ISVs who must configure the FileNet connectors.
- IT professionals who are responsible for preparing and supporting the environments.
- Authors and developers who are responsible for creating WSM sites that use the FileNet connectors.

Assumptions

This guide assumes the following:

- FileNet P8 3.5.x is installed.

Task 1: Install WSM

For instructions on installing WSM, please see the document called *WSM 4.1.1 Installation* (InstallationGuide.pdf). The document is installed in the `..\filenet\WSM 4.1.1\docs\setup` directory.

Task 2: Test the Environments

The following components should be validated before you configure the connectors:

- FileNet P8 object store
- WSM environment

Validate that the FileNet P8 Object Store is Accessible

For this validation, you need a FileNet P8 object store and a user with a minimum of read access to the object store.

To validate the FileNet P8 object store

1. Open a new browser window.
2. Access the P8 Workplace application.
3. Log on.
4. Navigate to the object store that has the content you want to put on your site.

Validate the WSM Environment

For this validation, you need a WSM environment and a user with superuser rights.

To validate the WSM environment

1. Open a new browser window.
2. Access the WSM author instance by entering the URL.
3. Log on with the superuser/superuser credentials to validate that the basic installation is working.
4. Configure the environment with LDAP authentication for WSM. Refer to [Task 3: Set up LDAP in WSM](#) for detailed instructions.

Task 3: Set up LDAP in WSM

To set up the LDAP connection on WSM, you must edit several configuration files. A complete description of setting up LDAP authentication is available on the WSM media at:

docs\setup\ConfigurationGuide.pdf

The information that follows is an example of configuring LDAP authentication on the author and publish instances. To edit these files, use either the WSM crxauthor facility or the WSM Development Environment.

To configure LDAP authentication

1. Uncomment the default initial context start and end tags and add an LDAP resource pool in **/bootstrap/resource.xml**. For example:

```
<jndicontexts>
    <defaultinitialcontext>
    </defaultinitialcontext>
</jndicontexts>
<resourcepools>
    <pool name="ldapPool" config="systemldappool.xml" />
</resourcepools>
```

2. Configure the LDAP resource pool in **/bootstrap/systemldappool.xml**. For example:

```
<ldappool>
    <datasource
        name="ldapDirectory"
        host="server1"
        port="389"
        authdn="RND\administrator"
        authpw="12345678"
    />
</ldappool>
```

Hint: Ensure that the host name can be resolved from the WSM server. If it can't, use the IP address of the host instead.

3. Add an LDAP Authenticator in **/config/repository/p8-security.xml** and in **/config/repository/securityservice.xml**. For example:

```
<authenticators defaultpackage="com.day.cq.contentbus">
    <authenticator
        class="com.day.cq.contentbus.driver.simpleldap.LdapAuthenticator"
        config="authenticators/ldapauthenticator.xml" />
    <authenticator class="SimpleAuthenticator"
        config="authenticators/simpleauthenticate.xml" />
</authenticators>
```

NOTE: Make sure the LDAP authenticator is added **before** the standard simple authenticator because they are evaluated in the order they are listed.

4. Configure the LDAP Authenticator in **/config/repository/authenticators/ldapauthenticator.xml**. For example:

```
<ldapauthenticator>
    <resource poolname="ldapDirectory" />
    <param
        ldapbasedn = "dc=rnd, dc=day, dc=com"
```

```

    ldapfilter = "objectclass=person"
    ldapaccessmode = "bind"
    ldapuserattributename = "cn" />
<userfinders>
  <finder class="LdapDefaultUserFinder"
config="ldapdefaultfinder.xml" />
  <finder class="IndexUserFinder" />
</userfinders>
</ldapauthenticator>

```

5. Define how the LDAP users and groups should be converted or imported into WSM user pages (for caching purposes and ACL assignment) in **/config/repository/authenticators/ldapdefaultfinder.xml**. For example:

```

<userfinder>
  <userresolver>
    <handlemapping type="splitdn"
roothandle="/access/users/superuser/ldap" basedn="dc=rnd, dc=day,
dc=com"/>
    <autocreate csd="ldapuser">
      <setatom name="dn" attribute="distinguishedName" />
      <syncatom name="UserID" attribute="cn" />
      <syncatom name="EMail" attribute="mail" />
      <syncatom name="Fullname" attribute="displayName" />
      <syncatom name="Language" attribute="preferredLanguage"/>
      <addgroup handle="/access/groups/author" />
      <addgroup handle="/access/groups/p8author" />
      <addacl type="allow" glob="/content" rights="rwxcd" />
    </autocreate>
  </userresolver>
  <groupresolver>
    <handlemapping type="splitdn" roothandle="/access/groups/ldap"
basedn="dc=rnd, dc=day, dc=com" />
    <autocreate csd="ldapgroup">
      <setatom name="dn" attribute="dn" />
      <setatom name="TitleText" attribute="cn" />
      <syncatom name="Description" attribute="description" />
    </autocreate>
  </groupresolver>
  <groupsync roothandle="/access/groups/ldap" dnatom="dn">
    <ldapgroups>
      <usermemberof follownested="true" />
    </ldapgroups>
  </groupsync>
</userfinder>

```

6. Manually create the **ldapuser** and **ldapgroup** csd files in the **/apps/Authentication** folder. When you create the files, select the file type "csd". For example:

ldapuser.xml

```

<?xml version="1.0" encoding="ISO-8859-1" ?>
<!DOCTYPE csd SYSTEM "cq:/system/resources/dtd/xmlcsd.dtd">
<csd name="ldapuser" base="user">
  <hierarchy_driver name="default" />
  <container>
    <atom label="dn" driver="default" indexinghint="exact" />
  </container>
</csd>

```

ldapgroup.xml:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<!DOCTYPE csd SYSTEM "cq:/system/resources/dtd/xmlcsd.dtd">
<csd name="ldapgroup" base="group">
  <hierarchy_driver name="default" />
  <container>
    <atom label="dn" driver="default" />
  </container>
</csd>
```

7. When the LDAP configuration is complete, ensure that you can log on to WSM using LDAP credentials. Note that each LDAP account that will be using the WSM authoring environment must be assigned the appropriate user rights and roles. Refer to the WSM online help for more information on this task.

Task 4: Prepare the Content Engine

WSM requires a dll to be registered on the Content Engine.

To register WSMAction-1.1.dll

1. Copy **WSMAction-1.1.dll** from the `..\filenet\wsm-4.1.1\opt\p8` folder to a location on the CE server.
2. Execute the following command: **regsvr32 WSMAction-1.1.dll**.

Task 5: Configure the Object Store

When content is changed, all WSM author and publish instances must be informed so they can update their content. To make this notification work, you must add events and subscribe your WSM instances to the events. Complete the following using the Enterprise Manager on the Content Engine server.

To initiate the Enterprise Manager

1. Log on to a machine that has the Enterprise Manager installed.
2. Initiate Enterprise Manager.
3. Log on with administrator access rights to the object store that you want to use with WSM.

To configure Full Text Indexing on the object store

NOTE To configure Full Text Indexing, the object store must have at least one file store.

1. Right click the object store and select **All Tasks > Configure Full Text Indexing**.
2. From the Task Menu, select **Create Filestore Indexes**.
3. Create at least two indexes and select the appropriate language for your locale.
4. Click **Create Indexes**; then click **Close**.
5. From the Task Menu, select **Create Database Indexes**.
6. Select at least two indexes.
7. Click **Create Indexes**; then click **Close**.
8. From the Task Menu, select **Property Level Indexing**.

9. In the tree view,
 - a. Expand **Class Definitions > Document > Indexable Properties**.
 - b. Index Document Title.
10. Click **Apply Changes**; then click **Close**.
11. Click **Yes** when prompted to index properties now; click **OK** when informed that the indexing will occur as a background task. Then click **Close**.

To import the WSM properties

1. Right-click the object store and select **All Tasks > Import All**.
2. Select the **Import Options** tab.
3. Click **Browse** (next to the Import File textbox), navigate to **..\\filenet\\wsm-4.1.1\\opt\\p8**, and select **CEImport.xml**.
4. Select the **Retry Failed Import** checkbox.
5. Click **Import** to start the import process.
6. Click **OK** to acknowledge the completion status message.
7. Click **Exit**.
8. Expand the object store.
9. Click **Events** and then **Event Actions**. You'll see two new events: WSM Notification Author and WSM Notification Publish.
10. Right-click the new events and view their properties. The WsmEventURL should be pointing to the correct WSM server.
For example, for an Author instance on the same machine:
http://localhost:4402/crxauthor/EventAction

For a Publish instance on the same machine:
http://localhost:4402/crxpublish/EventAction

If the properties are not available, click the **Refresh** button on the toolbar.

Task 6: Prepare the P8 Process Engine

Complete Task 6 if you want to use the P8 workflow capability. If you will be using the WSM out-of-the-box workflow capability, perform Task 7 instead.

Create and start a router

If a router has already been created and started, skip to [Import region settings and create the WSM Roster](#).

A router forwards workflow requests to a specific region on a Process Engine. A region is a logical subdivision of the workflow database in the Process Engine.

1. Log on to the Application Engine server with your administrator user credentials.
2. Launch the Process Task Manager on the Application Engine.
 - Windows: Run routercmd.bat from **<AE_install_path>\FileNet\Router**.
 - Unix: Run routercmd.sh from **<AE_install_path>\FileNet\Router**.
3. Select **Routers** in the left pane.

4. Select **New....** from the **Action** menu.
5. Define a new router with the appropriate settings:
 - a. Router Name = *<name of your router>* (e.g., productionrouter)
 - b. Process Engine = *<The name or IP address of the Process Engine server>*
 - c. User Name = *<The Process Engine administrator user name>*
 - d. Password = *<The Process Engine administrator password>*
 - e. Isolated Region = *<An integer>*
6. Click **OK**.
7. In the right pane, select the newly-added router and click **Start** on the toolbar.
8. Review the messages in the bottom pane to ensure that the router started successfully.
9. Verify that the router started.
 - a. Launch Workplace.
 - b. Log on with an account that has Process Administrator privileges.
 - c. Select the **Admin** tab.
 - d. Click **Process Configuration Console**.
 - e. Right-click the router name that you selected in step g and select **Connect**.

If the region is already initialized, the router node should expand to display *Server 0*, *User Queues*, and *Event Logs*. If a log-on dialog box displays, the router has not started correctly.

Import region settings and create the WSM Roster

1. From the WSM server, initiate a browser session and then log on to Workplace with an account that has access rights to the Process Configuration Console.
2. Navigate to **Admin > Process Configuration Console**. This starts an applet with a console you can use to configure the Process Engine.
3. Right click *<router name>* under the **VWService localhost**. Check that the region has been initialized.
4. Select **Import from XML File...** and import the xml file `..\\filenet\\wsm-4.1.1\\opt\\p8\\PERegionImport.xml`.
5. Expand the **Servers** node.
6. Expand the **Workflows Roster** node.
7. Add a roster called **WSMRoster**.
8. Save the changes.
9. Close the **Process Configuration Console**.

Import the Example Workflow

You can test workflow functionality by importing the example workflow that was included with your installation.

To import the example workflow

1. From the WSM server, initiate a browser and log on to Workplace with an account that has access rights to the Process Designer.
2. Navigate to **Author > Advanced Tools**.
3. Start the Process Designer. A Java Applet opens in a separate window.
4. Select **File > Open**. Select the example Workflow (**..\filenet\wsm-4.1.1\opt\p8\WSMSampleWorkflow.pep**) and click **Open**.
5. Click each step and assign the appropriate participants. The participants must be valid P8 users.
6. Select the **Activate Page** step.
7. In the panel on the right side of the window, click the **Attributes** tab.
8. Update the `cqurl` attribute value to provide the URL of where the activation request is to be sent: (e.g., `http://<host>:<port>/author/libs/FileNet/content/cq_operations.html`).
9. Select **File > Transfer**. Save the workflow definition in an object store by selecting the object store and a folder.
10. Name the workflow. Click **Next**. Modify the security settings if necessary.
11. Click **Finish**. The workflow definition has been transferred to the Process Engine.
12. Close the browser.

To set up the WSM_Operations queue

1. Log on to the Application Engine server with administrator user credentials.
2. Copy the following files from **..\filenet\wsm-4.1.1\opt\p8** on the WSM server to **<ae_install>\Workplace\WEB-INF\lib** on the Application Engine:

wsm-operations-4.1.1.jar
commons-httpclient-2.0.2.jar

3. Launch the Process Task Manager on the Application Engine.
 - a. Windows: Run `routercmd.bat` from `<AE_install_path>\FileNet\Router`.
 - b. Unix: Run `routercmd.sh` from `<AE_install_path>\FileNet\Router`.
4. Select the **Component Manager** node from the left pane.
5. Click **Stop** on the toolbar.

Task 7: Configure the CE Connector with the WSM Out-of-the-Box Workflow Capability

6. Highlight the Component Manager and select the **General** tab; then enter the following:
 - Router URL: The URL of the Process Router that is listed on the **General** tab in the Workplace Site Preferences under the **General Settings > Tasks > Process Router** site preference. The format of the URL is:


```
<application server name>:<port>/<router-name>
```

 For example:


```
myserver:32771/vwrouter
```
 - User name and password: These must be for an account that has Process Engine Administrator privileges.
7. (Optional) Select the **Automatically Started** check box.
8. Select the **Required Libraries** tab.
9. Add the following jar files from the `<ae_install>\Workplace\WEB-INF\lib`:


```
wsm-operations-4.1.1.jar
commons-httpclient-2.0.2.jar
```
10. Click **Apply**. Then click **Start** on the toolbar.
11. Validate that the WSM_Operations queue has started. If it hasn't started successfully, click **WSM_Operations** under the Component Manager and select the **Advanced** tab. Enter the administrator password and click **Apply**. Right-click **WSM_Operations** and click **Start**.

Task 7: Configure the CE Connector with the WSM Out-of-the-Box Workflow Capability

If you are using the CE connector with the WSM out-of-the-box workflow capability, you must upload the native-workflow-20061113.cq package that is provided at the root of the WSM media.

To upload the package

1. Log on to WSM with an administrator account.
2. Click the **Tools** button to display the Upload Package tab.
3. Browse to the native-workflow-20061113.cq package at the root of the WSM media.
4. Click **Open**.
5. Ensure that the **Install package after upload** option is checked.
6. Click **Upload package**.
7. Restart the WSM server.

Task 8: Validate that the Connectors are Functioning

To validate the CE connector

1. Start the WSM server.
2. Log on to the author instance using a valid LDAP account.
3. Click the **P8** tab and validate that you can see the contents of the object store.
4. Open a new browser window and log on to Workplace.

5. Add a document to a folder.
6. In the WSM author window, refresh the page and ensure that the new document is visible.

These steps validate that the LDAP configuration is working, the connection to the object store is working, and that WSM is aware of changes to the object store content (that is, the WSM event action is working).

If the object store does not display, check for the following:

- That the LDAP user has the appropriate rights in the WSM environment.
- The WSM configuration files have been updated correctly. For information about the configuration files, refer to the manual steps for configuring the CE connector in the WSM installation guide.

To validate the PE Connector

1. Start the WSM server if it's not already running.
2. Log on to the author instance using a valid LDAP account.
3. In the Site tab, expand the DesignGround sample and click **Welcome to DesignGround**. If you didn't install the sample, expand any site.
4. Open any page and click **Page Properties**.
5. Click the **Workflow** tab.
6. Select the current page. A drop-down list displays the sample workflow that was installed.

These steps validate that the Process Engine was updated with the information required for managing WSM workflows.

If the workflows do not display, refer to the WSM installation guide for the manual steps for configuring the PE connector. Ensure that all the appropriate changes have been made to the WSM configuration files.

For more information on how to use WSM with the connectors, see the document called *FileNet P8 Use Cases (UseCases.pdf)*. The document is installed in the `..\filenet\ WSM 4.1.1\docs\userguide` directory.

Configure Connectors after Installing WSM (Optional)

If you decide to configure the connectors after you install WSM, refer to the WSM installation guide and the section called "Enabling the Connectors Manually." Then perform tasks 1 through 6 above.

Find WSM Content

You may need to find and modify certain files stored in the WSM content repository (e.g., configuration files).

The WSM repository contains the following top-level folders:

- `/access`: Users, groups and roles definitions.
- `/apps`: The WSM Applications, usually the website application.
- `/bootstrap`: Root configuration files used during startup of WSM.
- `/classes`: The compiled JSP classes.
- `/config`: The main configuration files.
- `/content`: The web pages of the web site.
- `/etc`: All other web site-related content (e.g., media library, workflows).

- /libs: WSM Libraries (e.g., Components, Forms, Process Designer, including the FileNet P8 Connectors).
- /system: System library needed for WSM application to work.
- /tmp

There is also a folder for the temporary storage of data.

You can find files by browsing the WSM development environment or by using the CRX Explorer. The following sections explain how to browse using these tools.

Find WSM Content Using the WSM Development Environment

NOTE The instance of WSM that you want to connect to for authoring or publishing must have been successfully installed.

The WSM development environment is most often used by developers for accessing the complete repository so they can add new applications or scripts, edit configuration files, etc. The content of the repository is shown in a tree view.

To browse using the WSM development environment

1. Navigate to **<wsminstalldir>\bin**.
2. Double-click **cqde.exe**. The Connect to Communiqué Server dialog box is displayed.
3. Enter the host (e.g., **localhost** for a standard installation).
4. Enter the port (e.g., **4402** for a standard installation).
5. Enter your user name and password.
6. The connection path is **!<webappcontext>/cqde** (e.g., **/author/cqde** for the author instance of a standard installation).
7. Click **OK**.

The Development Environment now tries to connect to the defined WSM instance. The Project window on the left side has the following tabs:

- ContentBus: A view of the entire repository.
- Templates: A list of all defined web page templates.
- Resources: A view of the repository showing only files of type **resource** (e.g., configuration files, scripts).
- Site

Find WSM Content Using CRX Explorer

NOTE The instance of the WSM you want to connect to (author or publish) must have at least the crx repository web app installed.

This way of browsing the repository content is most useful when the WSM web application is not working correctly (e.g., when a configuration file has been edited and an error has been added). In these cases, you can browse the CRX repository and download, fix, and upload the file.

To access the CRX Explorer

1. Open a browser window and enter **http://<host>:<port>/crxauthor**.
2. Click **login** and ensure that the **live_author** instance is your active workspace. Enter your administrator credentials.
3. Click **Content Explorer**.

Configuration Files

The following is a list of all configuration files with P8 connector-specific settings.

1. **/config/repository/repository.xml**

Defines a P8 SecurityService that replaces the default security service (needed to extract user passwords for sending them to the Process Engine) and adds two services, one per connector:

```
...
<services>
  <service class="com.day.cq.jcr.adapter.P8SecurityService"
    config="p8-security.xml"
    name="com.day.cq.jcr.adapter.SecurityService" />
  <service class="com.day.cq.filenet.CEConnectorService" config="ce-
connector.xml" />
  <service class="com.day.cq.filenet.PEConnectorService" config="pe-
connector.xml" />
</services>
...
```

2. **/config/repository/p8-security.xml**

A configuration setting for the security service. It defines the user name mapping to P8 users. In here, the LDAP authenticator must be added manually:

```
..
<authenticators defaultpackage="com.day.cq.contentbus">
..<authenticator
class="com.day.cq.contentbus.driver.simpleldap.LdapAuthenticator"
...config="authenticators/ldapauthenticator.xml" />
..<authenticator class="SimpleAuthenticator"
config="authenticators/simpleauthenticate.xml" />
</authenticators>
```

3. **/config/repository/authenticators/ldapauthenticator.xml,** **/config/repository/authenticators/ldapdefaultfinder.xml**

Configuration files for setting up the connection to the LDAP server. The setup must be done manually. For more details see the section [Set up LDAP in WSM](#) above.

4. **/config/repository/ce-connector.xml**

Configures the Content Engine connector service. It defines:

- The path to access the Content Engine.
- The name of the object store to use.
- The mount path inside the WSM repository.
- A valid user name and password for receiving P8 content change notifications.
- The search query to find WSM pages containing a reference to the changed content.

```
<connector>
..<content-engine url="http://10.0.0.44:8008/ApplicationEngine/">
....<objectstore name="qa" mount-path="/etc/medialib/filenet">
.....<notification username="qaadmin" password="12345678" dependency-
statement="select * from / where Par.*.FileNetUUID = '$' " />
....</objectstore>
..</content-engine>
</connector>
```

5. **/config/repository/pe-connector.xml**

Configures the Process Engine connector service. It defines:

- The RMI URL to connect to the Process Engine.
- A valid user name and password to search for pages in workflows.
- How often the workflow search query should be performed (in seconds).

```
<connector>
..<process-engine url="rmi://10.0.0.44:32771/qarouter">
....<running-workflow-searcher username="qaadmin" password="12345678"
query-interval="15" />
..</process-engine>
</connector>
```

6. **/config/delivery/ecma.xml**

Defines an additional WMS-specific script part.

```
...
<scriptroot path="/libs/FileNet" type="path" />
...
```