Upgrading to LiveCycle® ES 8.2 from 8.0.x

(for JBoss® Turnkey)

Adobe® LiveCycle® ES

Update 1 (8.2)

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Adobe® LiveCycle® ES Update 2 (8.2) Upgrading to LiveCycle ES 8.2 from 8.0.x (for JBoss Turnkey)

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About This Document

This document explains how to upgrade to Adobe® LiveCycle® ES (Enterprise Suite) Update 1 for JBoss® and MySQL from LiveCycle ES 8.0.x Update 1 for Red Hat® JBoss® and MySQL by using the turnkey method. The turnkey method automatically installs, configures and upgrades the product and is the recommended installation option for rapid evaluation, development, and small production deployments.

Perform this type of upgrade to get a LiveCycle ES system up and running rapidly for a small-scale production, demonstration, evaluation, development, or training purposes. The turnkey method installs and configures a default set of Adobe and third-party products that provide a functioning LiveCycle ES environment.

Ensure that you read *Preparing for Upgrading to LiveCycle ES* before you perform the tasks described in this document. Although all the steps that are required to upgrade by using turnkey are included in this document, *Preparing for Upgrading to LiveCycle ES* contains important information that will help you plan your upgrade.

Who should read this document?

This document is intended for users who are upgrading from a LiveCycle ES version 8.0 turnkey deployment. These users include evaluators, administrators, or developers who are responsible for installing, configuring, administering, or deploying LiveCycle ES. The information provided is based on the assumption that anyone reading this document is familiar with the Microsoft® Windows® operating systems and web environments.

Conventions used in this document

This document uses the following naming conventions for common file paths.

Name	Default value	Description
[LiveCycle ES root]	C:\Adobe\LiveCycle8.2\	The installation directory that is used for all LiveCycle ES solution components. This directory contains subdirectories for LiveCycle Configuration Manager, the LiveCycle ES SDK, and each LiveCycle ES solution component installed.
[JBoss_ES root]	C:\Adobe\LiveCycle8.2\jboss	The home directory of the application server that runs LiveCycle ES

Additional information

The resources in this table can help you learn about LiveCycle ES.

For information about	See
General information about LiveCycle ES and the solution components	*LiveCycle ES Overview*
What's new in this LiveCycle ES release	*What's New for LiveCycle ES*
LiveCycle ES release information and last-minute changes that occur to the product	*LiveCycle ES Release Notes*
LiveCycle ES terminology	*LiveCycle ES Glossary*
Other services and products that integrate with LiveCycle ES	Adobe Development Center
LiveCycle ES solution components	Adobe LiveCycle ES (Enterprise Suite)
All documentation available for LiveCycle ES	Adobe LiveCycle ES documentation
Patch updates, technical notes, and additional information about this product version	LiveCycle Technical Support

1 Upgrading to LiveCycle ES (Turnkey)

This chapter describes how to upgrade fromLiveCycle ES version 8.0 to LiveCycle ES 8.2 by using the turnkey method. The turnkey installation option is most appropriate for rapid installations of evaluation, developer, and small production environments. If you installed LiveCycle ES version 8.0 using a non-turnkey method (manual configuration and deployment to JBoss or deployment to WebSphere or WebLogic), see the *Upgrading to LiveCycle ES* document for your application server.

Note: You can upgrade using the turnkey method only if you installed LiveCycle ES version 8.0 using turnkey and the LiveCycle ES version 8.0 solution components are deployed to the JBoss instance that was included as part of the turnkey installation.

The following information is included in this document:

- A description of the system requirements for upgrading to the LiveCycle ES turnkey.
- All the steps required to initiate and complete the upgrade. (When you complete these steps, LiveCycle ES is running on JBoss and ready to accept requests.)
- Details about what you can do next, including accessing LiveCycle Administration Console and User Management, and accessing some of the web applications that may be available (depending on the LiveCycle ES solution components you have installed).

LiveCycle Configuration Manager automatically performs most of the tasks required to upgrade a LiveCycle ES version 8.0 deployment to LiveCycle ES on a JBoss Application Server and MySQL database running on Windows only.

- Configures the LiveCycle Reader Extensions ES Rights credential
- Imports the product samples

How the LiveCycle upgrade works

Upgrading to LiveCycle ES version 8.2 from LiveCycle ES version version 8.0 involves the following major tasks, most of which are automated when you use the turnkey method of installation and deployment:

1. Installing LiveCycle ES product files.
2. Upgrading and re-deploying the LiveCycle ES EAR files.
3. Updating (patching) the LiveCycle ES services components.
4. (Optional) Applying a compatibility layer to the LiveCycle ES EAR files. The compatibility layer comprises a set of deprecated Enterprise JavaBeans™ (EJBs), classes, servlets, and CORBA APIs, which support custom applications developed with LiveCycle 7.x and enable these legacy applications to continue to work with LiveCycle ES.

The installation program or LiveCycle Configuration Manager performs all the tasks. You are prompted for input throughout the process, as described by the steps in this document.

Detailed outline of tasks performed in the turnkey upgrade process

If you originally installed LiveCycle ES version 8.0 using the turnkey method, you can use the turnkey upgrade process to move from LiveCycle ES version 8.0 to LiveCycle ES version 8.2. The turnkey installation and upgrade process performs the following tasks:

- Installs the LiveCycle ES product files
- Starts LiveCycle Configuration Manager
- Configures and assembles the LiveCycle ES EAR files. This task includes merging the compatibility layer into the EAR files, if you select this option to support LiveCycle 7.x API support.
- Deploys LiveCycle ES to JBoss
- Initializes the MySQL 5.0 database
- Updates (patches) the LiveCycle ES components, preserving previous service configuration parameters, endpoints, watched folders, and so on.
- Migrates essential data, including settings, configuration data, fonts, and GDS directory from LiveCycle ES version 8.0 to LiveCycle ES
- Imports LiveCycle ES Samples to JBoss

LiveCycle ES version 8.2 must be installed and upgraded on the same computer on which the LiveCycle ES version 8.0 server is running.

Task checklist

Instructions for all upgrade tasks are included in this document. You must perform the following tasks to upgrade LiveCycle ES version 8.0 products to LiveCycle ES version 8.2 using the turnkey method on a single server.

Task	Topic
Back up the LiveCycle ES environment.	"LiveCycle ES Backup and Recovery" in *Administering LiveCycle ES*
(LiveCycle PDF Generator ES upgrade only) Install Adobe Acrobat 8.1 from the LiveCycle ES media.	"Installing Acrobat for PDF Generator ES or PDF Generator 3D ES" on page 14
Install LiveCycle ES version 8.2 using the LiveCycle ES installation program.	"Installing LiveCycle ES" on page 15
(LiveCycle Content Services ES only) Modify the Content Services ES logging configuration	"Configuring logging for LiveCycle Content Services ES" on page 18
Start LiveCycle Configuration Manager and choose Upgrade to LiveCycle ES.	"To configure LiveCycle ES:" on page 19
Complete the post-deployment activities.	"Post-Deployment Activities" on page 23

System prerequisites

This section provides the hardware and software requirements to install LiveCycle ES using the turnkey method.

LiveCycle ES patch updates

Before installing LiveCycle ES 8.2, ensure that you download any patch updates. These updates are at LiveCycle Technical Support.

Additional prerequisites

Before you install LiveCycle ES 8.2, ensure that you have the following prerequisite hardware and software installed:

- "Hardware" on page 11
- "Operating system" on page 11
- "Software development kit" on page 11
- "Web browser support" on page 12
- "Application server" on page 12

Additionally, if you include LiveCycle PDF Generator ES as part of your LiveCycle ES solution, you must complete the following tasks before you begin the installation:

- "Granting the Logon As Service right when installing PDF Generator ES or PDF Generator 3D ES" on page 14
- "Installing Acrobat for PDF Generator ES or PDF Generator 3D ES" on page 14

Development versus production environments

For development and evaluation use, the turnkey installation can be used to install all the solution components on a single system, but the system may experience resource limitations. It is recommended that this complete installation only be done on a system that has 4 GB of RAM or that LiveCycle ES Business Activity Monitoring be installed on a different server.

A complete installation should never be done on a production system. For production use, Business Activity Monitoring should be deployed on a separate application server. It is recommend that, for larger production use, Business Activity Monitoring be installed on a dedicated system and that the system should run both a 64-bit operating system and Java Application Server. The modelling process requires large amounts of RAM to compute and can require more then the memory limit on 32-bit systems.

Hardware

For any installation, these settings are recommended as the minimum:

- Disk space for installation: 3 GB (an additional 3GB is required if you are using a ESD download and not installing from a DVD)
- System temp space during installation: 3 GB
- Memory for running LiveCycle ES: 2 GB
- Processor: Intel® Pentium® 4 or equivalent, 1.6 GHz or higher processor

Operating system

The turnkey method supports the following operating systems:

- Microsoft Windows 2003 Server® (required for production support)
- Microsoft Windows XP (for LiveCycle ES evaluation and development)

Software development kit

You must install the appropriate JDK for your J2EE environment.

You must use Sun™ Java™ Software Development Kit 5.0 (JDK) 1.5.0_11 or a later update of JDK 1.5.0.

➤ **To install the JDK for JBoss:**

1. To download and install updates to JDK 5.0 (1.5.0) from the Sun Developer Network, follow the link to download Java SE, , click **Previous Releases** on the next page, and click **J2SE 5.0 Downloads** and download **Update 15** or later.
2. After you install the JDK,create or set the `JAVA_HOME` environment variable and the `PATH` to point to the location where your JDK is installed. The following sections will guide you through these tasks.

Note: Java 6 (1.6) and Java 1.4 are not supported by LiveCycle ES.

➤ **To create and set the JAVA_HOME environment variable:**

1. Select **Start** > **Control Panel** > **System** and click the **Advanced** tab**.**
2. Click **Environment Variables** and, in the System Variables area, click **New.**
3. Enter `JAVA_HOME` as the variable name and enter the directory where you installed the Java SDK. This directory contains the /bin subdirectory. For example, type the following directory:

```
C:\Program Files\Java\jdk1.5.0_11
```

Note: To verify your `JAVA_HOME` environment variable, open a command prompt and run the following command:

```
cd %JAVA_HOME%\bin
java -version
```

You should receive a response that begins with Java version `1.5.0_11` (or a later version of 1.5.0).

➤ **To update the PATH environment variable:**

1. Select **Start** > **Control Panel** > **System** and click the **Advanced** tab**.**
2. Click **Environment Variables** and, in the System variables area, select **Path** and then click **Edit**.
3. Add the directory where you installed the Java SDK to the **Variable value** field. For example, for a JBoss installation, type the following directory:

   ```
   C:\Program Files\Java\jdk1.5.0_11
   ```

4. Append the following text to the beginning of the variable value:

   ```
   %JAVA_HOME%\bin;
   ```

Note: To verify the update to your `PATH` environment variable, open a command prompt and run the `java -version` command:

You should receive a response that begins with "Java version `1.5.0_11`" (or a later version of 1.5.0).

Web browser support

You must have one of the following supported web browsers:

- Internet Explorer 6 or later
- FireFox 2.0.0.1

Note: The term "or later" includes major revisions. For example, Microsoft Internet Explorer 6.0 or later also covers Microsoft Internet Explorer 7.0.

Business Activity Monitoring is supported only on Microsoft Internet Explorer.

In addition, to view some LiveCycle ES solution components, such as LiveCycle Workspace ES, you require Adobe Flash® Player 9. You can download the latest version of Flash Player from www.adobe.com.

Application server

The turnkey method currently supports JBoss 4.0.3 SP1 (which includes the Apache Tomcat servlet container).

When you choose to upgrade existing installation to LiveCycle ES version 8.2, the JBoss Application Server installed with LiveCycle ES version 8.0 will be used and no new JBoss Application Server is installed.

Before you install

Before you begin upgrading, read through the following information to ensure that your installation runs smoothly:

- To reduce the time to complete the installation, it is recommended that you install LiveCycle ES either by using a local copy of the installation file set or directly from the DVD instead of installing from a shared network location.
- To avoid installation errors, do not copy the DVD install image to directory path which exceeds the Microsoft Windows 256 character limit.
- To improve the speed of the installation, disable any on-access virus scanning software for the duration of the installation.
- During the installation, you will be prompted to enter your product serial number(s). Ensure you have them available. If you are upgrading from LiveCycle ES version 8.0, the serial number provided with that installation is used automatically.

  These services manage the application server and the database for the turnkey upgrade. You can start, stop, and pause these services by using the Windows Services Control Manager. To open the Windows Services Control Manager, go to Control Panel > Administrative Tools > Services. Using this tool, you can also configure the services to start when the computer starts or to require manual startup.
- By default, the turnkey installation places LiveCycle ES, including all its related components and software, in theC:\Adobe\LiveCycle8.2\ directory (referred to as the *[LiveCycleES root]* directory).

Caution: If you choose to install to a non-default directory, do not use the name *test* as your directory name (for example, C:\test) or the MySQL install process will fail.

- By default, JBoss is installed to and run from the *[LiveCycleES root]*/jboss directory.
- By default, the WebLogic Server is created with the following properties:

  Server Instance Name: For WebLogic turnkey, the default is *LCServer1*.

  Admin User ID: The default WebLogic Admin User ID is *weblogic*.

  Password: The default password for the WebLogic Admin User is *password*.

Preconfiguration for PDF Generator ES and PDF Generator 3D ES

Before you install PDF Generator ES or LiveCycle PDF Generator 3D ES, you must ensure you complete the following two sections.

Granting the Logon As Service right when installing PDF Generator ES or PDF Generator 3D ES

If you are installing PDF Generator ES or PDF Generator 3D ES by using the turnkey method and you need to enable native application file support (which supports converting files from native formats, such as Microsoft Word to PDF), you must grant the Logon As Service right to the Microsoft Administrator in Windows before you begin the turnkey installation.

➤ **To set the Logon As Service right:**

1. Select **Start** > **Control Panel** > **Administrative Tools** > **Local Security Policy** > **Local Policies** > **User Rights Assignment**.
2. Double-click **Log on as a service** and click **Add User or Group**.
3. Type the user name for the Microsoft Administrator and click **OK**.

Installing Acrobat for PDF Generator ES or PDF Generator 3D ES

Note: This section applies only if your configuration requires native file format conversion (for example, Microsoft Word to PDF).

LiveCycle PDF Generator ES or PDF Generator 3D ES can convert many native file formats to PDF. Such native file formats include Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Project, Microsoft Visio, Corel WordPerfect, Adobe Photoshop®, Adobe FrameMaker®, and Adobe PageMaker®.

If you plan to use PDF Generator ES or PDF Generator 3D ES native application format conversion or optical character recognition (OCR) generation, you must install Acrobat 9.0 Professional Extended on the computer where PDF Generator ES will run before you run the LiveCycle ES installation program. If you do not install Acrobat 9.0 Professional Extended before you install LiveCycle ES, you must install Acrobat afterward and perform some additional manual tasks.

If you do not want to configure PDF Generator ES or PDF Generator 3D ES to support this functionality, you do not need to install or upgrade to Acrobat 9.0 Professional Extended. However, it is recommended that you upgrade to Acrobat 9.0 Professional Extended in order to support conversions that use Microsoft Office 2007.

A DVD that contains Acrobat 9.0 Professional Extended is supplied with the LiveCycle ES media or as an option for ESD downloads.

➤ **To install Acrobat 9.0 Professional Extended for PDF Generator ES or PDF Generator 3D ES:**

1. Uninstall any other version of Acrobat by using the **Add/Remove Programs** window in the Windows Control Panel.
2. Restart your computer if prompted.
3. Acrobat 9.0 Professional Extended is provided with the LiveCycle ES media or as an option for ESD downloads.

- If you are using the media, insert the Acrobat 9.0 Professional Extended CD.
- If you are using the ESD downloads, download Acrobat 9.0 Professional Extended from your ESD location.

4. Install Acrobat 9.0 Professional Extended by running the AutoPlay.exe file.
5. Follow the instructions on the Acrobat installer screens.

Installing LiveCycle ES

For a turnkey upgrade, you must install LiveCycle ES 8.2 on the same computer as the LiveCycle ES version 8.0 server. The default target installation directory for LiveCycle ES is C:\Adobe\LiveCycle8.2. After you install LiveCycle ES, you will run LiveCycle Configuration Manager to perform the upgrade from LiveCycle ES version 8.0 to LiveCycle ES 8.2.

Before you install LiveCycle ES, make sure you have reviewed the following sections:

- "System prerequisites" on page 10
- "Installing LiveCycle ES" on page 15

➤ **To install LiveCycle ES:**

1. Do one of these tasks:
   - From the download site, download and decompress the LiveCycle ES Electronic Software Download (ESD) to your file system. After it is downloaded, navigate to the \livecycle_server\8.2 folder and double-click the **win_livecycle8_setup.exe** file to start the installation.
   - Navigate to the \livecycle_server\8.2 folder and double-click the **win_livecycle8_setup.exe** file to start the installation.
2. When prompted, select the language for the installation to use, and then click **OK**.
3. On the Welcome screen, click **Next**.
4. If a previous LiveCycle ES 8.0.1 installation exists, the Upgrade Installation screen appears. Select one of the following options:
   - **Upgrade Existing Installation to LiveCycle ES v8.2:** Choose this option if you intend to upgrade from LiveCycle ES 8.0.x to LiveCycle ES 8.2. Ensure that the directory shown on the screen corresponds with the existing version of LiveCycle ES; otherwise, browse to the correct directory.

     Choosing this option ensures that information from the existing installation, such as the product serial number, is used. LiveCycle Configuration Manager performs the actual upgrade tasks when the installation process is complete. It is important that you back up your existing environment before you upgrade. (See "LiveCycle ES Database" and "GDS Backup and Recovery" in *Administering LiveCycle ES*.)

     Note: If you choose to upgrade the existing LiveCycle ES, go to *Upgrading LiveCycle ES 8.2 from 8.0.x (for JBoss Turnkey)* and follow the instructions for upgrading in that document.
   - **Install LiveCycle ES v8.2**: Choose this option to install a new, separate instance of LiveCycle ES 8.2. LiveCycle ESIf you choose this option, you must first remove the existing installation of LiveCycle ES if it was installed by using the turnkey option. Your existing version of LiveCycle ES will not be upgraded. See the *Installing and Deploying LiveCycle ES 8.2* document for your application server and follow the instructions for installing in that document.

5. On the Update Installation screen, ensure that the directory that is displayed in the field is the location of the current of LiveCycle ES version 8.0.

6. Select **Use Previous Install As Reference**. This options ensures that installation program uses the serial number from the previous installation of LiveCycle ES, and that the product is upgraded using the existing JBoss Application Server and MySQL database. (Required for turnkey upgrades.)

7. Click **Next**.

   Note: If you select a directory that is different from the directory where the previous version of LC was installed, LiveCycle Configuration Manager will configure a new version of the product - it will not upgrade.

   Note: The installation directory path cannot be long than 40 characters.

8. Verify that the list of solution components matches what you require and click **Next**.

9. On the Type of Installation screen, select **Turnkey** and click **Next**.

10. Read the Adobe LiveCycle ES Server License Agreement and, if you agree, select **I accept the terms of the license agreement**, and then click **Next**.

11. Read the JBoss Application Server and, if you agree, select **I accept the terms of the license agreement**, and then click **Next**.

12. Read the MySQL License Agreement and, if you agree, select **I accept the terms of the license agreement**, and then click **Next**.

13. Verify the path to your Java 5 SDK or click **Browse** to navigate to its root directory, and then click **Next.** This directory must be the same one that is specified in the `JAVA_HOME` environment variable.

14. ***(PDF Generator ES and PDF Generator 3D ES only)*** Select **Yes, enable native application support for PDF Generator ES**. The native application support functionality allows you to convert native applications, such as Microsoft Word, to PDF. However, you must install these native applications on the same server as you are installing PDF Generator ES and PDF Generator 3D ES. If you are deploying LiveCycle ES to a cluster, you must select **No** and manually configure each node in the cluster. (Turnkey does not support deployment into a cluster. Refer to the application server-specific LiveCycle ES clustering guide.)

    Note: PDF Generator 3D ES requires native application support to convert 3D files to PDF. Adobe Acrobat® version 9.0 is required to configure support for native Windows applications. For information about installing Acrobat 9.0, see "Installing Acrobat for PDF Generator ES or PDF Generator 3D ES" on page 14.

15. ***(PDF Generator ES and PDF Generator 3D ES only)*** Type the user name and password for the user who installed Microsoft Office and click **Next**.

    Note: The password for the Microsoft Office user must not contain two consecutive `$` characters (for example, `dollar$$`) as this causes the install wizard to return an 'invalid credentials' error.

Caution: You must provide the correct administrator name and password; otherwise, LiveCycle ES will not run. Use the same administrator account you used in "Installing Acrobat for PDF Generator ES or PDF Generator 3D ES" on page 14. This administrator account name must be the same user who installed Microsoft Office on the system and include the Windows MachineName prefix if that

user is not a local account on the target computer. Do not use either *localhost* or the IP address of the Windows Server.

16. Click **Next**, review the preinstallation summary, and then click **Install**. The installation program displays the progress of the installation. This process may take several minutes to complete.

17. Review the Release Notes and click **Next**.

18. Review the post-installation summary information and choose one of these options:
    - If no service pack updates are required, ensure that **Start the LiveCycle Configuration Manager** is selected, and then click **Finish**.
    - If service pack updates are required or if you are installing LiveCycle Content Services ES, deselect this option and click **Finish** to continue with the following sections before you run LiveCycle Configuration Manager.

Note: If you deselect **Start the LiveCycle Configuration Manager** and exit the installer, you can run LiveCycle Configuration Manager by using the ConfigurationManager.bat file located in *[LiveCycleES root]*\configurationManager\bin

Preparing the Connectors for ECM for upgrade

If you are upgrading the LiveCycle ES Connector for EMC Documentum or LiveCycle ES Connector for IBM FileNet, you must configure an application server system property after installing LiveCycle ES 8.2 and before starting LiveCycle Configuration Manager to complete the upgrade process.

➤ **To configure LiveCycle ES Connectors for ECM for upgrade:**

1. Navigate to the application server working directory and open the adobe-component-ext.properties file in a text editor.

2. Copy the system property `[component id]_[component version].ext=[JAR files and/or folders]` and paste or add it as a new system property in the file.

3. Delete the `[component version]` from the new system property so that the line appears as `[component id].ext=[JAR files and/or folders]`.

4. Ensure that the new line ends with a hard return, and save the file.

5. Restart the application server.

You can now continue to run LiveCycle Configuration Manager to upgrade to LiveCycle ES.

Install service packs

Before you complete the configuration using LiveCycle Configuration Manager, apply the latest LiveCycle ES service packs.

Configuring logging for LiveCycle Content Services ES

If you installed Content Services ES as part of your LiveCycle ES upgrade, you must modify the log4j.xml file to reduce the number of log entries that are sent to the log file before you run LiveCycle Configuration Manager.

➤ **To modify the log4j.xml file:**

1. Open the *[appserver root]*/server/all/conf/log4j.xml file in an editor.
2. Add the following categories under the `com.adobe` category:

```
<category name="org.apache.xml.security.signature.Reference">
  <priority value="WARN"/>
</category>
<category name="org.alfresco">
  <priority value="WARN"/>
</category>
<category name="org.alfresco.repo.policy">
  <priority value="WARN"/>
</category>
<category name="org.springframework">
  <priority value="WARN"/>
</category>
<category name="org.hibernate">
  <priority value="WARN"/>
</category>
<category name="org.hibernate.cache.ReadWriteCache">
  <priority value="ERROR"/>
</category>
<category name="org.hibernate.cache.EhCacheProvider">
  <priority value="ERROR"/>
</category>
<category name="org.hibernate.engine.
StatefulPersistenceContext.ProxyWarnLog">
  <priority value="ERROR"/>
</category>
<category name="org.jbpm.jpdl.xml.JpdlXmlReader">
  <priority value="ERROR"/>
</category>
```

3. Save and close the file.
4. Restart the application server.

Caution: Failing to make this modification will cause significant delays when restarting JBoss.

Configuring LiveCycle ESUpgrading LiveCycle ES version 8.0 to LiveCycle ES 8.2

Now that LiveCycle ES 8.2 is installed on the computer where LiveCycle version 8.0 is running, you are ready to upgrade from LiveCycle version 8.0 to LiveCycle ES 8.2. LiveCycle Configuration Manager performs the tasks required for upgrading.

Tip: When LiveCycle Configuration Manager completes the upgrade process, LiveCycle ES will be deployed and started. You can press **F1** in LiveCycle Configuration Manager to view Help information for the screen you are viewing.

➤ **To configure LiveCycle ES:**

1. If you are continuing from the LiveCycle ES installation, proceed to step 2; otherwise, navigate to the *[LiveCycleES root]*\configurationManager\bin folder and run `ConfigurationManager.bat`.
2. On the LiveCycle Configuration Manager Welcome screen, click **Next**.
3. Select **Upgrade from LiveCycle ES**.
4. ***(Optional)*** Select **Install the LiveCycle 7.x Compatibility Layer** if you are installing LiveCycle ES on a development system on which you may also be running or developing client applications that were developed with LiveCycle 7.x.
5. Click **Next**.
6. On the Solution Component Selection screen, ensure that the LiveCycle ES solution components that you installed and plan to deploy are selected, and then click **Next**.
7. On the Product Selection for Compatibility Layer Merge screen (appears only if you selected **Install the LiveCycle 7.x Compatibility Layer**), deselect any LiveCycle 7.x product for which you do not want merge the compatibility layer.
8. On the Task Selection screen, ensure that all the available tasks are selected, and then click **Next**.

   Note: The **Configure Application Server** and **Validate Application Server Configuration** tasks are not available for selection for JBoss turnkey. The JBoss turnkey method does not support these tasks because the application server is already configured for LiveCycle ES.

9. On the Configure LiveCycle ES (1 of 3) screen, click **Configure** and, when the EAR files have been configured, click **Next**. Depending on the number of solution components that are included in the configuration, this process may take several minutes to complete. Click **View Progress Log** to view the status of the EAR file configuration.
10. On the Configure LiveCycle ES (2 of 3) screen, set the directories that LiveCycle ES will use to access fonts and store temporary data that is associated with processing jobs:
    - (Optional) To change the default location of the **Adobe server fonts directory**, type the path or browse to the directory.
    - Accept the value in the **Customer fonts directory** box. If you did not specify a location for the customer fonts directory, this box appears empty, and you can choose to specify a new location for your customer fonts. (Accepting the empty box accepts the default font directory location.)

    Note: Your right to use fonts provided by parties other than Adobe is governed by the license agreements provided to you by such parties in connection with those fonts, and is not covered

under your license to use Adobe software. Adobe recommends that you review and ensure you are in compliance with all applicable non-Adobe license agreements before using non-Adobe fonts with Adobe software, particularly with respect to use of fonts in a server environment.

- (Optional) To change the default location of the **System fonts directory**, type the path or browse to the directory.
- (Optional) To specify the **Location of the temporary directory**, click **Browse**.
- To enable FIPS, ensure that **Enable Federal Information Processing Standards (FIPS) 140-2 cryptography** is selected. Select this option only if you require FIPS to be enforced.

Note: You can also configure FIPS in the LiveCycle Administration Console after deploying LiveCycle ES. After logging into LiveCycle Administration Console, click **Settings** > **Core System** > **Core Configurations**.

11. Click **Next**.

12. On the Configure LiveCycle ES (3 of 3) screen, click **Browse** to specify the location of the **Global document storage root directory**. Click **Configure** to configure the GDS directory and when the process is finished, click **Next**.

13. ***(LiveCycle Content Services ES only)*** On the LiveCycle Content Services ES Configuration screen, set the parameters that Content Services ES will use:

    Deploy Type: Select single server for the turnkey installation.

    Content storage root directory: The root directory used by Content Services ES.

14. ***(Content Services ES only)*** Click **Configure** to configure Content Services ES. When complete, click **Next**.

15. On the Configure LiveCycle ES Summary screen, click **Next**.

16. On the Deploy LiveCycle ES EARs screen, click **Deploy**. This operation may take several minutes to complete. Click **View Progress Logs** to view the status of the EAR file configuration. When the deployment is completed successfully, click **Next**.

    Note: All the EAR files that are available for deployment are selected by default. Deselect each EAR file that you do not want to deploy at this time. For example, if this is not the first time you have run LiveCycle Configuration Manager, and you previously deployed LiveCycle ES version 8.2 and one of the EAR files failed to deploy, you can deploy it now without deploying the other EAR files. If you are deploying LiveCycle ES version 8.2 for the first time, leave the EAR files selected.

17. ***(JBoss Application Server 4.0.3 SP1 only)*** Navigate to the directory *[appserver root]*/server/all/work/jboss.web/ and delete all *.java and *.class files (if present).

18. On the LiveCycle ES Database Initialization screen, verify the host and port information, and then click **Initialize**. The database initialization task creates tables in the database, adds default data to the tables, and creates basic roles in the database. When the initialization completes successfully, click **Next**.

19. ***(Business Activity Monitoring on JBoss only)*** On the Initialize Business Activity Monitoring screen, provide the information for the following fields:

    Database type: The database on which BAM Server metadata is running.

    BAM Host: The name or IP address of the computer that hosts the application server on which BAM Server is running.

    BAM HTTP Port: The HTTP service port that the database uses (for example, 8080 for JBoss).

    BAM Administrator User ID: The administrator ID that is required to log in to BAM Workbench. The default user ID is *system*.

    BAM Administrator Password: The password to log in to BAM Workbench. The default password is *manager*.

20. ***(Business Activity Monitoring on JBoss only)*** Click **Initialize** to begin the initialization process and, when initialization is complete, click **Next** to continue.

21. On the LiveCycle ES Server Information screen, type the password for the LiveCycle ES server in the **Password** box. If the default password was changed after installing LiveCycle ES version 8.0, type the new password here.

22. Click **Verify Server Connection** to ensure that the information for the default JBoss is correct. This information will be used when you log in to LiveCycle Administration Console. When the test completes successfully, click **Next**.

    Note: The server information that appears on this screen represents default values for the turnkey deployment. You can change the values if the LiveCycle ES version 8.0.1server uses a different port.

    Testing the server connection helps to narrow troubleshooting in case failures occur in the deployment or validation. If the connection test passes but deployment or validation fails in the next few steps, connectivity issues can be eliminated from the troubleshooting process.

23. On the LiveCycle Component Deployment screen, click **Deploy**. The components deployed at this time are Java archive files that plug into the LiveCycle ES service container for purposes of deploying, orchestrating, and executing services. When the deployment has completed successfully, click **Next**.

24. On the LiveCycle Component Deployment Validation screen, click **Validate**. LiveCycle Configuration Manager validates that the Java archive files are deployed to and running on the LiveCycle ES server. When the validation is completed successfully, click **Next**.

25. On the Migrate Data Essential to LiveCycle ES Operation screen, click **Start** and, when the migration is complete, click **Next**.

    This step involves copying forms, form data, processes, preferences, FileType settings, job options, security settings, watched folders, and email job sources (depending on the product you are upgrading), custom fonts, and documents in the GDS directory.

26. ***(Reader Extensions ES only)*** On the LiveCycle Reader Extensions ES Credential Configuration screen, specify the following details that are associated with the Rights credential that activates the solution component services:

    LiveCycle Reader Extensions ES Rights credential: The path and file name of the Rights credential (.pfx or .p12 file type).

    LiveCycle Reader Extensions ES Rights credential password: The password that is associated with the credential. This password was provided with the credential file.

    Name for the configured Rights credential: The name (or alias) that LiveCycle Configuration Manager gives the credential when it is configured. If you are installing Reader Extensions ES for the first time, this name can be any name. If you are upgrading from Reader Extensions ES, you must use the name of your LiveCycle 7.x Rights credential for LiveCycle ES. If you use a different name, you will have to modify code in existing custom applications or, in a future LiveCycle ES release, your existing LiveCycle 7.x QPACs.

    This name appears in the Reader Extensions ES web interface, as well as the alias used to reference the credential through SDK calls. You can create any unique name for the Rights credential.

Tip: You can skip this step at this time by selecting **Configure later using LiveCycle Administration Console**. You can configure the Rights credential by using LiveCycle Administration Console after the deployment is completed. (After you log in to LiveCycle Administration Console, click **Settings** > **Trust Store Management** > **Local Credentials**.)

27. On the LiveCycle ES Ready for Essential Tasks screen, click **Next**. The LiveCycle ES server is running on JBoss and can process basic requests.

28. On the LiveCycle ES Samples Import screen, do one of these tasks:
    - Click **Import** to import the LiveCycle ES Samples, and then click **Next**.
    - To skip this step, select **Skip LiveCycle ES Samples Import** and click **Next**. You can import the samples at a later date by restarting LiveCycle Configuration Manager and choosing to import the samples.

Caution: Do not import the LiveCycle ES Samples if either of these options apply to your situation:

- If you are deploying LiveCycle ES to a production system, importing the samples creates users with default passwords, which may be a security concern for your production environment.

29. When the import completes successfully, click **Next**.

30. On the Summary page, click **Next**.

31. Review the Next Steps information. When finished, click **Exit** to exit LiveCycle Configuration Manager.

Note: After you configure LiveCycle ES, complete the post-configuration activities that apply to your solution implementation.(See "Post-Deployment Activities" on page 23.)

Next steps

If you used LiveCycle Configuration Manager to configure and deploy LiveCycle ES, you can now complete the post-deployment tasks. (See "Post-Deployment Activities" on page 23.)

2 Post-Deployment Activities

This section details post-installation tasks that you should complete before you use LiveCycle ES.

Restarting the application server services

After completing the LiveCycle ES installation, you should restart the JBoss to ensure that they are in a clean running state, because after an install they will be in a high-memory-use initialization state.

Disabling directory listings on JBoss 4.0.3

Due to a possible information disclosure vulnerability, you must disable directory listings on JBoss Application Server 4.0.3.

➤ **To disable directory listings in JBoss:**

1. Locate the web.xml file and open it in an editor. The file is located here by default:

   C:\Adobe\LiveCycle8.2\jboss\server\default\deploy\jbossweb-tomcat55.sar\conf

2. Locate the following setting and modify the `<param-value>` value to `false`:

```
<init-param>
<param-name>listings</param-name>
<param-value>true</param-value>
</init-param>
```

3. Save and close the file.

4. Restart the application server.

Disabling status pages for JBoss Application Server

Due to a possible information disclosure issue, you need to remove access to the JBoss status page by following these steps for your version of the application server.

➤ **To disable the status page for JBoss Application Server 4.0.3:**

1. Locate *[JBoss_ESroot]*/server/all/deploy/jbosswebtomcat55.sar/ROOT.war/WEB-INF and open the web.xml file in an editor.

2. Comment out the `servlet` and `servlet-mapping` tags as follows:

```
<!-- <servlet>
   <servlet-name>Status Servlet</servlet-name>
   <servlet-class>org.jboss.web.tomcat.tc5.StatusServlet</servlet-class>
</servlet>
<servlet-mapping>
   <servlet-name>Status Servlet</servlet-name>
   <url-pattern>/status</url-pattern>
```

```
</servlet-mapping> -->
```

3. Save and close the file.

➤ **To disable the status page for JBoss Application Server 4.2:**

1. Locate *[JBoss_ESroot]*/server/all/deploy/ jbossweb.deployer/ROOT.war/WEB-INF, and open the web.xml file in an editor.

2. Comment out the `servlet` and `servlet-mapping` tags as follows:

```
<!-- <servlet>
   <servlet-name>Status Servlet</servlet-name>
   <servlet-class>org.jboss.web.tomcat.service.StatusServlet
   </servlet-class>
</servlet>
<servlet-mapping>
   <servlet-name>Status Servlet</servlet-name>
   <url-pattern>/status</url-pattern>
</servlet-mapping> -->
```

3. Save and close the file.

Accessing LiveCycle Administration Console

LiveCycle Administration Console is the web-based portal for accessing a variety of configuration pages, where you set run-time properties that control the way LiveCycle ES operates. When you log in to LiveCycle Administration Console, you can access User Management, watched folder, and email client configuration, as well as administrative configuration options for other services. You access Applications and Services, which administrators use for deploying services to a production environment, from within LiveCycle Administration Console.

The default user name and password for logging in to LiveCycle Administration Console is *administrator* and *password*. After you log in the first time, you can access User Management and change the password of the LiveCycle ES administrator account. (See "Accessing User Management" on page 27.)

Before you access LiveCycle Administration Console, LiveCycle ES must be deployed and running on your application server.

For information about using the administration web pages, see *LiveCycle Administration Console Help* (available from the Help menu of the LiveCycle Administration Console Home page).

➤ **To access LiveCycle Administration Console:**

1. Open a web browser and enter this URL:

   http://localhost:8080/adminui (local deployment using the default port)

2. Log in using the default user name and password:

   User name: *administrator*

   Password: *password*

3. Click **Login**.

4. Click **Services** to access the services' pages, and click **Settings** to access the Core System Settings, User Management, and Trust Store Management pages.

Accessing solution component web applications

After LiveCycle ES is deployed, you can access the web applications that are associated with the following solution components:

- LiveCycle Reader Extensions ES
- LiveCycle Workspace ES
- LiveCycle Rights Management ES
- LiveCycle ES Business Activity Monitoring
- LiveCycle Content Services ES

For information about using Reader Extensions ES, Workspace ES, and Rights Management ES, you can refer to the Help that is available within each application.

After you access the web applications by using the default administrator permissions to ensure that they are accessible, you can create additional users and roles so that others can log in and use the applications. (See *User Management Help*, which is also available within *LiveCycle Administration Console Help* or the User Management page.)

➤ **To access the Reader Extensions ES web application:**

1. Open a web browser and enter this URL:

   http://localhost:8080/ReaderExtensions (local deployment using the default port)

2. Log in using the default user name and password:

   User name: *administrator*

   Password: *password*

Note: You must have administrator or super user privileges to log in using the default user name and password. To allow other users to access Reader Extensions ES, you must create the user accounts in User Management and grant the users the Reader Extensions Web Application role.

➤ **To access the Workspace ES web application:**

1. Open a web browser and enter this URL:

   http://localhost:8080/workspace (local deployment using the default port)

2. Log in using the default user name and password:

   User name: *administrator*

   Password: *password*

Accessing Rights Management ES

To log in to Rights Management ES, you must be assigned the LiveCycle Rights Management End User role.

All new and existing users, including the Super Administrator, are not granted the LiveCycle Rights Management End User role by default. You must create a user account with the LiveCycle Rights

Management End User role in User Management, or grant the End User role to existing users. Then, log in to Rights Management ES by using the login information that is associated with the user you create.

➤ **To access the Rights Management ES web application:**

1. Open a web browser and enter this URL:

   http://localhost:8080/edc/Login.do (local deployment using the default port)

2. Log in using the default user name and password:

   User name: Administrator or any user who has the Rights Management ES End User role

   Password: Password for the user account entered above

Note: You may need to restart the application server if you cannot log in as a user other than administrator.

For information about setting up users and roles and configuring SSL for Rights Management ES, see *Administering LiveCycle ES*.

When a user adds a principal user to a policy entry in Rights Management ES, no principal users are visible, by default, because the My Policies policy set does not include a domain. To add visible users and groups, you can change the My Policies configuration in the Rights Management ES administration web application to add a domain. All the users in the added domains are visible and can be added to a user policy. (See "Editing Policy Sets" in *Rights Management Administration Help*.

➤ **To access the Business Activity Monitoring web application:**

1. Open a web browser and enter the appropriate URL:
   - http://localhost:8080/bam/login/dashboard.htm (local deployment using the default port)
   - http://localhost:8080/bam/login/workbench.htm (local deployment using the default port)

2. Log in using the default user name and password:

   User name: *system*

   Password: *manager*

➤ **To access the Content Services ES web application:**

Note: You must apply the LiveCycle Contentspace Administrator or LiveCycle Contentspace roles for a new user to login to this web application. To do this, you must create the users in User Management and grant them the appropriate role.

1. Open a web browser and enter this URL:
   - http://localhost:8080/contentspace (local deployment using the default port)

2. Log in using the default user name and password:

   User name: *administrator*

   Password: *password*

Accessing User Management

User Management allows administrators to maintain a database of all users and groups. The database can be synchronized with one or more third-party user directories to include users and groups from those databases. User Management provides authentication, authorization, and user management for LiveCycle ES solution components, including Reader Extensions ES, Workspace ES, Rights Management ES, LiveCycle Process Management ES, and LiveCycle Forms ES.

➤ **To access User Management:**

1. Open a web browser and enter this URL:

   http://localhost:8080/adminui (local deployment using the default port)

2. Log in using the default user name and password:

   User name: *administrator*

   Password: *password*

3. Click **Settings** > **User Management**.

Note: For information about configuring users with User Management, click **User Management Help** in the upper-right corner of the User Management page.

Deleting working files after upgrade

During upgrade, information is extracted from the LiveCycle ES database and written to working files, from which the information is then migrated into the LiveCycle ES 8.2 database. The files remain in the *[LiveCycleES root]*/configurationManager/working/upgrade directory after the data migration is complete.

When the upgrade is complete, most of these files are not needed, and some of this data may contain sensitive information, such as passwords and document encryption keys, depending on the LiveCycle solution components upgraded. To save disk space and to maintain the security of your system, delete most of the files in this directory after you verify that the upgrade is complete (essential and non-essential data is migrated) and LiveCycle ES is working as expected.

Navigate to the *[LiveCycleES root]*/configurationManager/working/upgrade directory, and delete all the files except for the sharedData file.

Activating BAM Dashboard

Business Activity Monitoring is deployed by LiveCycle Configuration Manager during the turnkey upgrade process. However, you must update the BAM Dashboard by starting and stopping all events. (See the "Using the BAM Dashboard" section in *Installing and Deploying LiveCycle ES for JBoss*.

Encrypting the plaintext password

To encrypt the plaintext password in the data source configuration, follow the instructions at JBoss.org wiki Encrypting DataSourcePasswords).

Managing the MySQL database

The turnkey installation and configuration supports the transaction-safe storage engine (InnoDB) in MySQL. This means that all document services must operate in the same storage engine and have consistent version support. (See MySQL InnoDB Storage Engine.)

Configuring LiveCycle ES to access LDAP

If you configured Lightweight Directory Access Protocol (LDAP) for products, those settings are migrated during the upgrade process, and you do not need to perform the steps in this section. If you did not previously configure LDAP, you can use the following procedure as a guideline when configuring User Management to support authentication using LDAP.

➤ **To configure User Management with LDAP:**

1. Open a web browser, navigate to http://*[host name]*:8080/adminui, and log in. (See "Accessing solution component web applications" on page 25.)
2. Click **Settings** > **User Management** > **Domain Management**, and click **New Enterprise Domain**.
3. In the **ID** box, type a unique identifier for the domain.
4. In the **Name** box, type a descriptive name for the domain.
5. Click **Add Authentication** and, in the **Authentication Provider** list, select **LDAP**.
6. Click **OK** and, on the page that appears, click **Add Directory**.
7. In the **Profile Name** box, type a name, and then click **Next**.
8. Specify values in the **Server**, **Port**, **SSL**, and **Binding** boxes, as required.
9. Under Populate Page With, select a directory settings option (for example, select **Default Sun ONE values**), and then click **Next**.
10. Configure **User Settings** as required, and then click **Next**
11. Configure **Group Settings** as required, and then click either **Test** or **Finish**.
12. (Optional) Test your configuration:
    - Click **Test**.
    - In the Test Directory pane, in the **Find** box, enter an object name and, in the **using** box, select the object's type, such as **Login ID**.
    - Click **Test**. If successful, your object's details are displayed. You can then click **Back**.
13. Click **Finish** to exit the Add Directory page, and then click **OK** again.

Note: Sync the LDAP server to ensure that the new settings take effect.

Upgrading the LiveCycle Barcoded Forms workflow scheduler

The LiveCycle Barcoded Forms workflow scheduler was used to invoke LiveCycle Barcoded Forms 7.x processes. To continue using Barcoded Forms 7.x processes in LiveCycle ES, you must migrate the LiveCycle Barcoded Forms workflow scheduler to LiveCycle ES.

LiveCycle Barcoded Forms ES processes are invoked using any of the LiveCycle ES common invocation methods, such as email, watched folders, API, or web service calls.

When you installed LiveCycle Barcoded Forms 7.2, the installer automatically set the `WF_BARCODEDFORMS_HOME` environment variable. This variable must still be in place when you upgrade to LiveCycle ES.

You can determine the path to the *[WF_BARCODEDFORMS_HOME]* directory by looking at the `WF_BARCODEDFORMS_HOME` environment variable in Windows.

➤ **To locate the *[WF_BARCODEDFORMS_HOME]* directory:**

1. On the Windows Desktop or in the **Start** menu, right-click **My Compute**r and select **Properties**.
2. On the **Advanced** tab, click **Environment Variables**.
3. Find the `WF_BARCODEDFORMS_HOME` variable in the **System Variable** list. The path to the directory is included there.

➤ **To migrate the LiveCycle Barcoded Forms workflow scheduler to LiveCycle ES:**

1. Go to the *[LiveCycleES root]*/configuratonManager/plugins/upgrade-plugin/collateral directory and copy the run-workflow-lc7upgradescheduler.bat file to the *[WF_BARCODEDFORMS_HOME]*/bin directory, where *[WF_BARCODEDFORMS_HOME]* is the directory set in the `WF_BARCODEDFORMS_HOME` environment variable.
2. Copy the following files to the *[WF_BARCODEDFORMS_HOME]*/lib directory:

File	Location
jbossall-client.jar	*[LiveCycleES root]*/jboss/client
activation.jar	*[LiveCycleES root]*/jboss/server/all/lib
mail.jar	*[LiveCycleES root]*/jboss/server/all/lib
adobe-usermanager-client.jar	*[LiveCycleES root]*/LiveCycle_ES_SDK/client-libs/common
adobe-pof-client.jar	*[LiveCycleES root]*/configuratonManager/plugins/upgrade-plugin/lib
adobe-wkf-client.jar	*[LiveCycleES root]*/configuratonManager/plugins/upgrade-plugin/lib
adobe-wkf-util.jar	*[LiveCycleES root]*/configuratonManager/plugins/upgrade-plugin/lib
adobe-wkf-qlc.jar	*[LiveCycleES root]*/configuratonManager/plugins/upgrade-plugin /collateral

The run-workflow-lc7upgradescheduler.bat file should be used as Barcoded Forms workflow scheduler to execute LiveCycle 7.x processes in the LiveCycle ES environment.

Configuring LiveCycle PDF Generator ES or LiveCyclePDF Generator 3D ES

If you installed LiveCycle PDF Generator ES or LiveCycle PDF Generator 3D ES as part of your LiveCycle ES solution, complete the following tasks:

- "Setting environment variables" on page 30
- "Uninstalling LiveCycle ES" on page 39
- "Configuring the application server to use HTTP proxy server" on page 31
- "Setting the Adobe PDF Printer as the default printer" on page 31
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Setting environment variables

If you installed PDF Generator ES or PDF Generator 3D ES and configured it to convert files to PDF, for some file formats, you must manually set an environment variable that contains the absolute path of the executable that is used to start the corresponding application. This table lists the native applications for which PDF Generator ES or PDF Generator 3D ES requires you to set up environment variables.

Application	Environment variable	Example
Acrobat 9.0	`Acrobat_PATH`	`C:\Program Files\Adobe\Acrobat 9.0\Acrobat\Acrobat.exe`
FrameMaker®	`FrameMaker_PATH`	`C:\Program Files\Adobe\FrameMaker7.1\FrameMaker.exe`
Notepad	`Notepad_PATH`	`C:\WINDOWS\Notepad.exe`
OpenOffice.org	`OpenOffice_PATH`	`C:\Program Files\OpenOffice.org 2.0`
PageMaker®	`PageMaker_PATH`	`C:\Program Files\Adobe\PageMaker 7.0\PageMaker.exe`
WordPerfect	`WordPerfect_PATH`	`C:\Program Files\WordPerfect Office 12\Programs\wpwin12.exe`

Note: The `OpenOffice_PATH` environment variable is set to the installation folder instead of the path to the executable.

You do not need to set up the paths for Microsoft Office applications such as Word, PowerPoint, Excel, Visio, and Project, or for AutoCAD. The Generate PDF service starts these applications automatically if they are installed on the server.

Configuring the application server to use HTTP proxy server

If the computer that LiveCycle ES is running on uses proxy settings to access external websites, the application server should be started with the following values set as Java Virtual Machine (JVM™) arguments:

```
-Dhttp.proxyHost=[server host]
-Dhttp.proxyPort=[server port]
```

➤ **To add the setting to JBoss:**

1. Ensure that the JBoss Application Server is stopped.
2. From command line, edit the run script in the *[JBOSS HOME]*/bin/ directory:
   - (Windows) run.bat
3. Add the following text to the script file:

   ```
   Set JAVA_OPTS=%JAVA_OPTS%
   -Dhttp.proxyHost=[server host]
   -Dhttp.proxyPort=[server port]
   ```

4. Save and close the file.

Setting the Adobe PDF Printer as the default printer

You must set the Adobe PDF Printer to be the default printer on the server. If the Adobe PDF Printer is not set as the default, PDF Generator ES or PDF Generator 3D ES cannot convert files successfully.

➤ **To set the default printer:**

1. Select **Start** > **Printers and Faxes**.
2. In the Printers and Faxes window, right-click **Adobe PDF** and select **Set as Default Printer**.

Configuring Acrobat 9.0

This procedure can be completed after you run LiveCycle Configuration Manager and deploy LiveCycle ES to the application server.

➤ **To configure Acrobat 9.0 Professional Extended for use with PDF Generator ES or PDF Generator 3D ES:**

1. If an earlier version (8.1 or earlier) of Acrobat is installed, uninstall it by using Add or Remove Programs in the Windows Control Panel.
2. Acrobat 9.0 Professional Extended is provided with the LiveCycle ES media or as an option for ESD downloads.
   - If you are using the media, insert the Acrobat 9.0 Professional Extended CD.
   - If you are using the ESD downloads, download Acrobat 9.0 Professional Extended from your ESD location.
3. Install Acrobat 9.0 Professional Extended by running the AutoPlay.exe file.

4. Navigate to the additional\scripts folder on the LiveCycle ES installation media.
5. Run the following batch file:

   `Acrobat_for_PDFG_Configuration.bat` *`[LiveCycleES root]`*

6. Open Acrobat and select **Help** > **Check for updates** > **Preferences**.
7. Deselect **Automatically check for Adobe updates**.

➤ **To validate the Acrobat 9.0 Professional Extended installation:**

1. Navigate to a PDF file on your system and double-click it to open it in Acrobat. If the PDF file opens successfully, Acrobat 9.0 Professional Extended is installed correctly.
2. If the PDF file does not open correctly, uninstall Acrobat and reinstall it.

Note: Ensure that you dismiss all the Acrobat dialog boxes that are displayed after the Acrobat installation is completed and disable the automatic updates for Acrobat.

Set the `Acrobat_PATH` environment variable to point to Acrobat.exe (such as C:\Program Files\Adobe\Acrobat 9.0\Acrobat\Acrobat.exe).

➤ **To configure native application support:**

1. Install and validate Acrobat as described in the previous procedure.
2. Set Adobe PDF printer as the default printer.
3. **(PDF Generator 3D ES)** Register the DLL file located at *[LiveCycle8.2 root]*\plugins\x86win32\PDFG3dAddin.dll.

Ensuring all languages are displayed after conversion

When HTML files are converted to PDF by using PDF Generator ES or PDF Generator 3D ES, some East Asian languages, such as Japanese, Korean, and Chinese, as well as left-to-right languages, such as Arabic, Armenian, Georgian, Hebrew, Indic, Thai, and Vietnamese, may not be displayed in the PDF file.

To display these languages, appropriate fonts must be present on the client and server.

➤ **To ensure that East Asian characters are displayed in Windows:**

1. Select **Start** > **Control Panel** and double-click **Regional and Language Options**.
2. On the **Languages** tab, select **Install files for East Asian languages**.
3. On the **Advanced** tab, select all the options under Code Page Conversion Tables and click **OK**.

If converted PDF files are still missing fonts, verify that the Arial Unicode MS (True Type) font (ARIALUNI.TTF) is present in the C:\WINDOWS\Fonts directory.

Setting PDF Generator ES or PDF Generator 3D ES watched folder performance parameters

To avoid `java.io.IOException` error messages indicating that not enough disk space is available to perform PDF conversions using a watched folder, you can modify the settings for PDF Generator ES or PDF Generator 3D ES in LiveCycle Administration Console.

➤ **To set performance parameters for PDF Generator ES or PDF Generator 3D ES:**

1. Log in to LiveCycle Administration Console and click **Services** > **Application and Services** > **Service Management**, and click **PDFGConfigService** in the list of services.
2. On the Configure PDFGConfigService page, set the following values:

   PDFG Cleanup Scan Seconds: 30 min

   Job Expiration Seconds: 100 min

Adding fonts to PDF Generator ES or PDF Generator 3D ES

LiveCycle ES provides a central repository of fonts named *Adobe LiveCycle ES Fonts Management*, which is accessible to all LiveCycle ES solution components. The Fonts Management module is a central font repository for all fonts that are accessible to and shared by various LiveCycle ES solution components.

However, PDF Generator ES or PDF Generator 3D ES frequently needs to start external (non-LiveCycle ES) applications on the server that cannot be configured to use the LiveCycle ES fonts repository. This section describes how to make the extra fonts available to these applications so that PDF documents that are created by using PDF Generator ES or PDF Generator 3D ES can use these extra fonts.

Non-Adobe applications

The following list contains non-LiveCycle ES applications that PDF Generator ES or PDF Generator 3D ES can use for PDF generation on the server side:

Windows-only Applications

- Microsoft Office Word
- Microsoft Office Excel
- Microsoft Office PowerPoint
- Microsoft Office Project
- Microsoft Office Visio
- Microsoft Office Publisher
- AutoDesk AutoCAD
- Corel WordPerfect
- Adobe Photoshop CS
- Adobe FrameMaker
- Adobe PageMaker
- Adobe Acrobat Professional Extended

Multiplatform applications

- OpenOffice Writer
- OpenOffice Calc
- OpenOffice Draw
- OpenOffice Impress

Note: In addition to these applications, your list may include additional applictions that you added.

Of the above applications, the OpenOffice Suite (which includes Writer, Calc, Draw, and Impress) is available on Windows, Solaris™, and Linux® platforms, whereas other applications are available on Windows only.

Adding new fonts to Windows applications only

All the Windows-only applications that are mentioned above can access all the fonts that are available in the C:\Windows\Fonts (or equivalent) folder. In addition to C:\Windows\Fonts, each of these applications may have its own private fonts folders.

Therefore, if you plan to add any custom fonts to the LiveCycle ES fonts repository, you must ensure that the same fonts are available to the Windows-only applications also by copying these fonts to either C:\Windows\Fonts or to an equivalent folder.

Your custom fonts must be licensed under an agreement that allows you to use them with the applications that have access to these fonts.

Adding new fonts to OpenOffice Suite

Adding custom fonts to OpenOffice Suite is explained on the OpenOffice *Fonts-FAQ* page at http://wiki.services.openoffice.org.

In addition, OpenOffice Suite has these resources about the fonts-related behavior:

- *OpenOffice Fonts Troubleshooting Guide* at http://www.openoffice.org/FAQs/fontguide.html. Some of the text in this guide is applicable only to OpenOffice 1.x and therefore may be obsolete for OpenOffice 2.x
- *Importing Fonts into OpenOffice 2.1* at http://openoffice.blogs.com/openoffice/2007/02/font_import_wiz.html. Even though this blog mentions OpenOffice 2.1, the instructions that are mentioned should be applicable to OpenOffice 2.2 and later.

Adding new fonts to other applications

If you extended PDF Generator ES by adding support for PDF creation by using other applications, see the user guide that is applicable to the corresponding application to determine the best procedure to use to add new fonts to that application. In Windows, copying your custom fonts to the C:\Windows\Fonts (or equivalent) folder should be sufficient.

Configuring HTML to PDF conversions

The HTML-to-PDF conversion process is designed to use the settings from Acrobat 9.0, thereby overriding the settings from LiveCycle PDF Generator ES.

Note: This configuration is required to enable the HTML-to-PDF conversion process, otherwise this conversion type will fail.

➤ **To configure the HTML-to-PDF conversion:**

1. Install and validate Acrobat as described in "Configuring Acrobat 9.0" on page 61.
2. Locate the pdfgen.api file in the *[LiveCycle8.2 root]*\plugins\x86win32 directory and copy it to *[Acrobat9.0 root]*\Acrobat\plug_ins directory.

Enabling support for Unicode fonts in HTML to PDF conversions

To enable PDF Generator ES or PDF Generator 3D ES to generate PDF files from HTML source files that contain Unicode fonts, complete the following steps.

Caution: The HTML-to-PDF conversion will fail if a zipped input file contains HTML files with double-byte characters in the filenames. To avoid this problem, do not use double-byte characters when naming HTML files.

1. Copy the Unicode font to any of the following directories as appropriate for your system:
   - Windows

     [Windows root]\windows\fonts

     [Windows root]\winnt\fonts

- UNIX

  /usr/X/lib/X11/fonts/TrueType

  /usr/openwin/lib/X11/fonts/TrueType

  /usr/share/fonts/default/TrueType

  /usr/X11R6/lib/X11/fonts/ttf

  /usr/X11R6/lib/X11/fonts/truetype

  /usr/X11R6/lib/X11/fonts/TrueType

  /usr/X11R6/lib/X11/fonts/TTF

  /Users/cfqauser/Library/Fonts

  /System/Library/Fonts

  /Library/Fonts

  /Users/ + System.getProperty(<user name>, root) + /Library/Fonts

  System.getProperty(JAVA_HOME) + /lib/fonts

2. Modify the font-name mapping in the cffont.properties file located in the *[LiveCycle8.2 root]*/adobe-generatepdf-dsc.jar file:
   - Unpackage this archive, and locate the cffont.properties file and open it in an editor.
   - In the comma-separated list of Java font names, add a map to your Unicode system font for each font type, as shown in these examples where kochi mincho is the name of your Unicode system font:

     ```
     dialog=Arial, Helvetica, kochi mincho
     dialog.bold=Arial Bold, Helvetica-Bold, kochi mincho ...
     ```

   - Save and close the properties file, and then repackage and redeploy the adobe-generatepdf-dsc.jar file.

Note: On a Japanese operating system, specify the font mapping in the cffont.properties.ja file as well, which takes precedence over the standard cffont.properties file.

Tip: Fonts in the list are searched from left to right, using the first font found. HTML-to-PDF conversion logs return a list of all the font names that are found in the system. To determine the font name you need to map, add the font to one of the directories above, restart the server and run a conversion. You can determine from the log files the font name to use for mapping.

To embed the font in the generated PDF files, set the `embedFonts` property in the cffont.properties file to `true` (the default is `false`).

Installing the IPP client

PDF Generator ES includes an Internet Printing Protocol (IPP) client installer for installation of the PDF Generator ES Internet printer on a client computer. After the installation is complete, a PDF Generator ES printer is added to the list of existing printers on the client computer. This printer can then be used to send documents for conversion to PDF.

Note: The PDF Generator ES IPP Client (wizard) is supported on 32-bit Windows platforms only.

If the IPP Client fails to install on Windows or if you want to install the IPP printer on UNIX or Linux platforms, use the operating system's native Add Printer utility and configure it as described in "To configure IPP Printer on Windows using the native Add Printer wizard:" on page 37.

➤ **To install the PDF Generator ES IPP Client:**

1. Ensure that you successfully installed PDF Generator ES on your server.
2. From a Windows client computer, enter the following URL in your web browser, where `[server]` is the name of the server where you installed PDF Generator ES and `[port]` is the application server port used:

   `http://[server]:[port]/pdfg-ipp/install`

3. On the Configure Internet Port screen, select **Use the specified user account** and provide the credentials of a LiveCycle user who has the PDFG Administrator/User role. This user must also have an email address that can be used to receive the converted files. To have this security setting apply to all users on the client computer, select **Use the same security options for all users**, and then click **OK**.

   Upon successful installation, a dialog box appears, indicating that "The Printer Adobe LiveCycle PDF Generator ES has been successfully installed."

4. Click **OK**. You will now have a printer named *Adobe LiveCycle PDF Generator ES* in your list of available printers.

➤ **To configure IPP Printer on Windows using the native Add Printer wizard:**

1. Click **Start** > **Printers and Faxes** and double-click **Add Printer**.
2. Click **Next**, select **A network printer, or a printer attached to another computer**, and then click **Next**.
3. Select **Connect to a printer on the internet or on a home or office network** and type the following URL for the IPP printer, where `[server]` is the server name and `[port]` is the port number where the server is running:

   `http://[server]:[port]/pdfg-ipp/printer`

4. On the Configure Internet Port screen, select **Use the specified user account** and provide valid User Management credentials.
5. In the **Printer Driver Select** box, choose any standard PostScript-based printer driver (for example, HP Color LaserJet PS).
6. Complete the installation by choosing appropriate options (for example, setting this printer as default).

Note: The user credentials used while adding the printer must have a valid email ID configured in User Management to receive the response.

7. Configure the email service's sendmail service. Provide a valid SMTP server and authentication information in the service's configuration options.

➤ **To install and configure the PDF Generator ES IPP Client using Proxy server port forwarding**

1. Configure port forwarding on the CC Proxy server on a particular port to the LiveCycle ES server, and disable the authentication at proxy server level (since LiveCycle ES uses its own authentication). If a client connects to this Proxy server on the forwarded port, then all the requests will be forwarded to the LiveCycle ES server.
2. Install PDFG-IPP printer using the following URL:

   `http://[proxy server]:[forwarded port]/pdfg-ipp/install.`
3. Provide the necessary credentials for authentication of the IPP printer.
4. The IPP printer will be installed on the client machine which you can use for PDF conversion using the firewall protected LiveCycle ES server.

Migrating HSM credentials

If you are using a Hardware Security Module (HSM) device to store credentials for LiveCycle Document Security 7.x, information about the credentials that are stored in the device must be migrated to the LiveCycle ES trust store.

The function of signing documents that was provided by LiveCycle Document Security 7.x is provided in LiveCycle ES by the Signature service (included in the LiveCycle Digital Signatures ES solution component). The LiveCycle ES trust store stores the various parameters that the Signature service requires for HSM signing, including options for SHA1 and certificate-based identification of an HSM signing key.

Upgrading LiveCycle Document Security 7.x to Digital Signatures ES includes migrating information from the trust.xml file (which LiveCycle ES does not use) to the trust store. Migrated data includes file-based credentials, certificates, and CRLs and preferences information. LiveCycle Configuration Manager performs this process. However, only file-based credentials are migrated, specifically the `p12record` tag in trust.xml file. The HSM reference credentials in the `hsmrecord` tag are not migrated. You must manually migrate HSM credentials. (See *Trust Store Management Help*.)

➤ **To migrate HSM credentials:**

1. Log in to LiveCycle Administration Console.
2. Click **Settings** > **Trust Store Management** > **HSM Credentials**.
3. Click **Add** to add a credential to the LiveCycle ES trust store. (Click the **Help** link in the upper-right corner and go to the "Managing HSM Credentials" section.)
4. Add all the HSM credentials that you used with LiveCycle 7.x.

Uninstalling LiveCycle ES

Before removing MySQL, back up any data you want to keep.

The uninstallation program does not remove Acrobat, which you may have installed with PDF Generator ES.

➤ **To remove the product files:**

1. Select **Start** > **Control Panel** > **Add or Remove Programs**, click **LiveCycle ES** and click **Remove**.
2. Follow the on-screen instructions and then click **Finish**.

Caution: Removing the MySQL database server permanently deletes all data.

3. Restart your computer.

Note: You can also uninstall LiveCycle ES from *[LiveCycleES_root]*_uninst\server.

3 Advanced Configuration Activities

This section describes advanced post-installation tasks that you may require for your LiveCycle ES environment. The following topics are discussed:

- Enabling Federal Information Processing Standard (FIPS)
- Configuring the service for LiveCycle ES Connector for EMC Documentum
- Configuring the service for LiveCycle ES Connector for IBM FileNet
- Configuring the service for LiveCycle ES Connector for IBM Content Manager
- Re-creating the JBoss for Windows LiveCycle ES service

Enabling Federal Information Processing Standard (FIPS)

LiveCycle ES provides a FIPS mode to restrict data protection to Federal Information Processing Standard (FIPS) 140-2 approved algorithms using the RSA BSAFE Crypto-C 2.1 encryption module.

If you did not enable this option by using LiveCycle Configuration Manager during LiveCycle ES configuration or if you enable it but want to turn it off, you can change this setting through LiveCycle Administration Console.

Modifying FIPS mode requires you to restart the server.

FIPS mode does not support Acrobat versions earlier than 7.0. If FIPS mode is enabled and the Encrypt With Password and Remove Password processes include the Acrobat 5 setting, the process fails.

In general, when FIPS is enabled, the Assembler service does not apply password encryption to any document. If this is attempted, a `FIPSModeException` is thrown, indicating that "Password encryption is not permitted in FIPS mode." Additionally, the `PDFsFromBookmarks` element is not supported in FIPS mode when the base document is password-encrypted.

➤ **To turn FIPS mode on or off:**

1. Log in to LiveCycle Administration Console.
2. Click **Settings** > **Core System** > **Core Configurations > Configurations**.
3. Select **Enable FIPS** to enable FIPS mode or deselect it to disable FIPS mode.
4. Click **OK** and restart the application server.

Note: LiveCycle ES software does not validate code to ensure FIPS compatibility. It provides a FIPS operation mode so that FIPS-approved algorithms are used for cryptographic services from the FIPS-approved libraries (RSA).

Configuring the Connector for EMC Documentum service

If you installed the LiveCycle ES Connector for EMC Documentum solution component for the first time (not an upgrade from LiveCycle ES 8.0.x), you must configure the service to connect to the Documentum repository. (See "Configuring the Connector for EMC Documentum service" in *Installing and Deploying LiveCycle ES Using Turnkey*.

If you installed the Connector for EMC Documentum service as part of your LiveCycle ES solution, complete the following procedure to configure the service to connect to the Documentum repository.

➤ **To configure Connector for EMC Documentum:**

1. Locate the adobe-component-ext.properties file in the folder (if the file does not exist, create it).
2. Add a new system property that provides the following Documentum Foundation Classes JAR files (and for the Connector for EMC Documentum 5.3 only, the location of the Documentum Content Server config folder) :
   - dfc.jar
   - (Connector for EMC Documentum 5.3) dfcbase.jar
   - (Connector for EMC Documentum 6.0) aspectjrt.jar

   The new system property should look like this one:

   ```
   [component id].ext=[JAR files and/or folders]
   ```

   Note: Do not overwrite the existing contents of the properties file. Simply append the new system property to the contents.

   For example, using default Content Server and Documentum Foundation Classes installations, add to the file one of the following system properties on a new line, with no line breaks, and end the line with a carriage return:

   - Connector for EMC Documentum 5.3 only:

     ```
     com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
     C:/Documentum/Config,
     C:/Program Files/Documentum/Shared/dfc.jar,
     C:/Program Files/Documentum/Shared/dfcbase.jar
     ```

   - Connector for EMC Documentum 6.0 only:

     ```
     com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
     C:/Program Files/Documentum/Shared/dfc.jar,
     C:/Program Files/Documentum/Shared/aspectjrt.jar
     ```

   Note: The above text contains formatting characters for line breaks. If you copy and paste this text, you must remove the formatting characters.

If you installed the Connector for EMC Documentum service as part of your LiveCycle ES solution, complete the following procedure to configure the service to connect to the Documentum repository.

➤ **To configure Connector for EMC Documentum:**

1. Locate the adobe-component-ext.properties file (if the file does not exist, create it). For JBoss, the file is in the *[LiveCycleES root]*\jboss\bin folder. For WebLogic, the file is in the *[BEA HOME]*/user_projects/domains/Adobe_LiveCycle folder.

2. Add a new system property that provides the location of the following Documentum Foundation Classes JAR files (and for Connector for EMC Documentum 5.3, the location of the Documentum Content Server config folder):

   - dfc.jar
   - (Connector for EMC Documentum 5.3) dfcbase.jar
   - (Connector for EMC Documentum 6.0) aspectjrt.jar
   - (WebLogic) log4j.jar

   The new system property should take on this form:

   ```
   [component id].ext=[JAR files and/or folders]
   ```

   For example, using default Content Server and Documentum Foundation Classes installations, add to the file one of the following system properties on a new line, with no line breaks, and end the line with a carriage return:

   - Connector for EMC Documentum 5.3 on JBoss only:

     ```
     com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
     C:/Documentum/Config,
     C:/Program Files/Documentum/Shared/dfc.jar,
     C:/Program Files/Documentum/Shared/dfcbase.jar
     ```

   - Connector for EMC Documentum 5.3 on WebLogic only:

     ```
     com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
     C:/Documentum/Config,
     C:/Program Files/Documentum/Shared/dfc.jar,
     C:/Program Files/Documentum/Shared/dfcbase.jar,
     C:/Program Files/Documentum/Shared/log4j.jar
     ```

   - Connector for EMC Documentum 6.0 on JBoss only:

     ```
     com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
     C:/Program Files/Documentum/Shared/dfc.jar,
     C:/Program Files/Documentum/Shared/aspectjrt.jar
     ```

   - Connector for EMC Documentum 6.0 on WebLogic only:

     ```
     com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
     C:/Program Files/Documentum/Shared/dfc.jar,
     C:/Program Files/Documentum/Shared/aspectjrt.jar,
     C:/Program Files/Documentum/Shared/log4j.jar
     ```

   Note: The above text contains formatting characters for line breaks. If you copy and paste this text, you must remove the formatting characters.

3. If JBoss or WebLogic is not currently running, start the JBoss for Adobe LiveCycle ES service or WebLogic for Adobe LiveCycle ES service. Otherwise, if the Adobe LiveCycle ES service is currently running, stop and then restart the service.

4. Open a web browser and enter one of these URLs:

   - (JBoss) http://localhost:8080/adminui (local deployment using the default port)

- (WebLogic) http://localhost:8001/adminui (local deployment using the default port)

5. Log in using the default user name and password:

   User name: administrator

   Password: password

6. (Optional) Navigate to **Services** > **LiveCycle ES Connector for EMC Documentum** > **Repository Credentials Settings**, click **Add**, specify the Docbase information, and then click **Save**. (For more information, click **Help** in the upper-right corner.)

7. Do one of the following tasks:

   - To use the Documentum Authorization service (EMCDocumentumAuthProviderService) to display content from a Documentum repository in the Resources view of Workbench ES, continue with this procedure. Using the Documentum Authorization service overrides the default LiveCycle ES authorization and must be configured to log in to Workbench ES using Documentum credentials.
   - To use the LiveCycle ES repository, log in to Workbench ES by using the LiveCycle ES super administrator credentials (by default, *Administrator* and *password*).

   You have now completed the required steps for this procedure. Use the credentials provided in step 8 for accessing the default repository in this case and use the default LiveCycle ES authorization service.

8. Enable the Remoting and EJB endpoints by doing these tasks:

   - Log in to LiveCycle Administration Console and click **Home > Services > Application and Services > Service Management**.
   - Filter the category *Connector for EMC Documentum a*nd click **EMC DocumentumContentRepositoryConnector:1.0.**
   - Select the disabled endpoints and enable them.

9. For a JBoss installation, select **Start** > **Control Panel** > **Administrative Tools** > **Services** and restart the **JBoss for Adobe LiveCycle ES** service.

10. For a WebLogic installation, select **Start** > **Control Panel** > **Administrative Tools** > **WebLogic for Node Manager** and restart the **BEA Products NodeManager** service.

11. Log in to LiveCycle Administration Console and click **Settings** > **User Management** > **Domain Management**.

12. Click **New Enterprise Domain**, and type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

    Note: When using DB2 for your LiveCycle ES database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See "Adding enterprise domains" in *User Management Help*.)

    Note: When using MySQL for your LiveCycle ES database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in *User Management Help*.)

13. Add a custom authentication provider:

    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **Custom**.
    - Select **EMCDocumentumAuthProvider** and then click **OK**.

14. Add an LDAP authentication provider:
    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **LDAP**, and then click **OK**.
15. Add an LDAP directory:
    - Click **Add Directory**.
    - In the **Profile Name** box, type a unique name, and then click **Next**.
    - Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields.
    - (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required.
    - Click **Next**, configure the user settings, click **Next**, configure group settings, as required, and then click **Next**.

    For details about the settings, click **User Management Help** in the upper-right corner of the page.
16. Click **OK** to exit the Add Directory page and then click **OK** again.
17. Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.

    (Optional) To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.
18. Navigate to **Settings** > **User Management** > **Users and Groups**.
19. Search for users that were synchronized from LDAP and perform these tasks:
    - Select one or more users and click **Assign Role**.
    - Select one or more LiveCycle ES roles and click **OK**.
    - Click **OK** a second time to confirm the role assignment.

    Repeat this step for all users that you assign roles to. For more information , click **User Management Help** in the upper-right corner of the page.
20. Start Workbench ES and log in by using the following credentials:

    Username: *[username]@[repository_name]*

    Password: *[password]*

    The Documentum repository should now be visible in the Resources view within Workbench ES. If you do not log in using the *username@repository name*, Workbench ES attempts to log in to the default repository specified in step 8.
21. (Optional) If you intend to install the LiveCycle ES Samples for Connector for EMC Documentum, create a Documentum repository named *Samples*, and then install the samples in that repository.

After you configure the Connector for EMC Documentum service, it is recommended that you see *Administering LiveCycle ES* for information about configuring Workbench ES functions properly with your Documentum repository.

22. Open a web browser and enter this URL:
    - (JBoss) http://localhost:8080/adminui (local deployment using the default port)

- (WebLogic) http://localhost:7001/adminui (local deployment using the default port)

Configuring the Connector for IBM FileNet service

If you installed the Connector for IBM FileNet service as part of your LiveCycle ES solution, you must configure the service to connect to the FileNet object store. See one of the following sections appropriate to your version of IBM FileNet:

- "Configuring the connector using FileNet 3.5" on page 45
- "Configuring the connector using FileNet 4.0.1" on page 49)

Configuring the connector using FileNet 3.5

Complete the following procedure to configure the Connector for IBM FileNet service using FileNet 3.5.

➤ **To configure the connector using FileNet 3.5:**

1. Locate the adobe-component-ext.properties file (if the file does not exist, create it). For JBoss, the file is in the *[LiveCycle ES root]*\jboss\bin folder. For WebLogic, the file is in the *[BEA HOME]*/user_projects/domains/Adobe_LiveCycle folder.

2. Add a new system property that provides the location of these FileNet Application Engine JAR files:
   - activation.jar
   - javaapi.jar
   - log4j-1.2.8.jar
   - mailapi.jar
   - p8cjares.jar
   - soap.jar
   - xercesimpl.jar
   - xml-apis.jar
   - (optional) pe.jar

   Note: Add the pe.jar file only if your deployment uses the IBMFileNetProcessEngineConnector service. The new system property should reflect this structure:

   ```
   [component id].ext=[JAR files and/or folders]
   ```

   Note: Do not overwrite the existing contents of the properties file. Simply append the new system property to the contents.

   For example, using a default FileNet Application Engine installation on a Windows operating system, add to the file the following system property on a new line, with no line breaks, and end the line with a carriage return:

   Note: The following text contains formatting characters for line breaks. If you copy this text to a location outside this document, remove the formatting characters when you paste it to the new location.

   ```
   com.adobe.livecycle.ConnectorforIBMFileNet.ext=
   C:/Program Files/FileNet/lib2/activation.jar,
   C:/Program Files/FileNet/lib2/javaapi.jar,
   C:/Program Files/FileNet/lib2/log4j-1.2.8.jar,
   ```

```
C:/Program Files/FileNet/lib2/mailapi.jar,
C:/Program Files/FileNet/lib2/p8cjares.jar,
C:/Program Files/FileNet/lib2/soap.jar,
C:/Program Files/FileNet/lib2/xercesImpl.jar,
C:/Program Files/FileNet/lib2/xml-apis.jar,
C:/Program Files/FileNet/lib2/pe.jar
```

Note: Add the text `C:/Program Files/FileNet/lib2/pe.jar` only if your deployment uses the IBMFileNetProcessEngineConnector service.

3. If JBoss or WebLogic is not currently running, start the JBoss for Adobe LiveCycle ES service or WebLogic for Adobe LiveCycle ES service. Otherwise, if the Adobe LiveCycle ES service is currently running, stop and then restart the service.

4. Open a web browser and enter one of these URLs:
   - (JBoss) http://localhost:8080/adminui (local deployment using the default port)
   - (WebLogic) http://localhost:7001/adminui (local deployment using the default port)

5. Log in using the default user name and password:

   User name: administrator

   Password: password

6. Click **Services** > **LiveCycle ES Connector for IBM FileNet**.

7. Click **Save** and then navigate to **Services** > **Applications and Services** > **Service Management**.

8. Select the check box next to **IBMFileNetProcessEngineConnector** (if configured) and then click **Start.**

9. Do one of the following tasks:
   - To use the FileNet Authorization service (IBMFileNetAuthProviderService) to display content from a FileNet object store in the Resources view of Workbench ES, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle ES authorization and must be configured to log in to Workbench ES by using FileNet credentials.
   - To use the LiveCycle ES repository, log in to Workbench ES by using the LiveCycle ES super administrator credentials (by default, *Administrator* and *password*). The credentials provided in step 4 use the default LiveCycle ES authorization service for accessing the default repository in this case.

10. Enable the Remoting and EJB endpoints by doing the following tasks:
    - Log in to LiveCycle Administration Console and click **Home** > **Services** > **Application and Services** > **Service Management**.
    - Filter the category *Connector for IBM FileNet* and click **IBMFileNetContentRepositoryConnector:1.0.**
    - Select the disabled endpoints and enable them.

11. For a JBoss installation, select **Start** > **Control Panel** > **Administrative Tools** > **Services** and restart the **JBoss for Adobe LiveCycle ES** service.

12. For a WebLogic installation, select **Start** > **Control Panel** > **Administrative Tools** > **WebLogic for Node Manager** and restart the **BEA Products NodeManager** service.

13. Restart your application server.

14. Log in to LiveCycle Administration Console and click **Settings** > **User Management** > **Domain Management**.

15. Click **New Enterprise Domain** and type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

    Note: When using DB2 for your LiveCycle ES database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See "Adding enterprise domains" in *User Management Help*.)

    Note: When using MySQL for your LiveCycle ES database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in *User Management Help*.)

16. Add a custom authentication provider:
    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **Custom**.
    - Select **IBMFileNetAuthProviderService** and then click **OK**.

17. Add an LDAP authentication provider:
    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **LDAP** and then click **OK**.

18. Add an LDAP directory:
    - Click **Add Directory**.
    - In the **Profile Name** box, type a unique name, and then click **Next**.
    - Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields.
    - (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required. When finished, click **Next**.
    - Configure the user settings, click **Next**, configure group settings as required, and then click **Next**.

      For details about the settings, click the **Help** link in the upper-right corner of the page.

19. Click **OK** to exit the Add Directory page and then click **OK** again.

20. Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.

    (Optional) To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.

21. Navigate to **Settings** > **User Management** > **Users and Groups**.

22. Search for users that were synchronized from LDAP and perform these tasks:
    - Select one or more users and click **Assign Role**.
    - Select one or more LiveCycle ES roles and click **OK**.
    - Click **OK** a second time to confirm the role assignment.

    Repeat this step for all users you want to assign roles to. For more information, click the **Help** link in the upper-right corner of the page.

23. Start Workbench ES and log in using the following credentials:

    Username: *[username]@[repository_name]*

    Password: *[password]*

    The FileNet object store should now be visible in the Resources view within Workbench ES. If you do not log in using *username@repository_name*, Workbench ES attempts to log in to the default repository specified in step 4.

24. (Optional) If you intend to install the LiveCycle ES samples for Connector for IBM FileNet, create a FileNet object store named *Samples* and then install the samples in that object store.

After you configure your Connector for IBM FileNet service, it is recommended that you see *Administering LiveCycle ES* for information about configuring Workbench ES functions properly with your FileNet repository.

Configuring the connector using FileNet 4.0.1

Choose one of the following procedures, as applicable to your application server, to configure the Connector for IBM FileNet service using FileNet 4.0.1:

- (JBoss Application Server or WebLogic Server) "To configure the connector using FileNet 4.0.1 and CEWS transport:" on page 49
- (WebLogic Server only) "To configure the connector using FileNet 4.0.1 and EJB transport:" on page 54

➤ **To configure the connector using FileNet 4.0.1 and CEWS transport:**

1. Using the method that is appropriate to your application server, add a new Java option in the registry where other arguments are defined:
   - (JBoss Application Server) Open the application server run file *[appserver root]*/bin/run.bat (Windows) or *[appserver root]*/bin/run.sh (UNIX) in a text editor and add the location of the FileNet Configuration files as a Java option to the application server start command.
   - (WebLogic Server) In the WebLogic Administration Console, do these tasks:
     - Under Domain Structure, click **Environment** > **Servers**.
     - In the right pane, click the name of your server, and then click the **Configuration** tab > **Server Start**.
     - Under Change Center, click **Lock & Edit** and, in the **Arguments** box, enter the Java option.

   The new Java option is as follows:

   ```
   -Dwasp.location=/<configuration files location>
   ```

   For example, using a default FileNet Application Engine installation on a Windows operating system, add this Java option:

   ```
   -Dwasp.location=C:/Progra~1/FileNet/AE/CE_API/wsi
   ```

   Note: If JBoss or WebLogic is running as a service, add the Java option in the registry where other JVM arguments are defined.

2. On JBoss, save the edited file; on WebLogic, click **Save**.

3. (JBoss only) If your deployment uses the Process Engine Connector service, copy this file:

   [appserver root]\client\logkit.jar to the directory *[appserver root]*\server\all\lib.

4. Locate the adobe-component-ext.properties file (if the file does not exist, create it). On JBoss, the file is located in the *[LiveCycle ES root]/*jboss/bin folder. On WebLogic, the file is in the *[BEA_HOME]*/user_projects/domains/Adobe_LiveCycle folder.

5. Add a new system property that provides the location of these FileNet Application Engine JAR files:
   - javaapi.jar
   - log4j-1.2.13.jar
   - soap.jar
   - wasp.jar
   - builtin_serialization.jar
   - wsdl_api.jar
   - jaxm.jar

- jaxrpc.jar
- saaj.jar
- jetty.jar
- runner.jar
- p8cjares.jar
- Jace.jar
- (optional) pe.jar

Note: Add the pe.jar file only if your deployment uses the IBMFileNetProcessEngineConnector service. The new system property should reflect this structure:

```
[component id].ext=[JAR files and/or folders]
```

Note: Do not overwrite the existing contents of the properties file. Simply append the new system property to the contents.

For example, using a default FileNet Application Engine installation on a Windows operating system, add the following system property on a new line with no line breaks and end the line with a carriage return:

Note: The following text contains formatting characters for line breaks. If you copy this text to a location outside this document, remove the formatting characters when you paste it to the new location.

```
com.adobe.livecycle.ConnectorforIBMFileNet.ext=
C:/Program Files/FileNet/AE/CE_API/lib2/javaapi.jar,
C:/Program Files/FileNet/AE/CE_API/lib2/log4j-1.2.13.jar,
C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/soap.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/wasp.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/builtin_serialization.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/wsdl_api.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/jaxm.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/jaxrpc.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/saaj.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/jetty.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/runner.jar,
C:/Program Files/FileNet/AE/CE_API/lib2/p8cjares.jar,
C:/Program Files/FileNet/AE/CE_API/lib/Jace.jar,
C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar
```

Note: Add `C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar` only if your deployment uses the IBMFileNetProcessEngineConnector service.

6. (FileNet Process Engine Connector only) Using a text editor, create a file with the following content as a single line and end the line with a carriage return:

   ```
   RemoteServerUrl = cemp:http://[contentserver_IP]:[contentengine_port]/
   wsi/FNCEWS40DIME/
   ```

7. Save the file as WCMApiConfig.properties in a separate folder, and add the location of the folder that contains the WCMApiConfig.properties file to the adobe-component-ext.properties file.

   For example, if you save the file as c:/pe_config/WCMApiConfig.properties, add the path c:/pe_config to the adobe-component-ext.properties file.

8. (JBoss only) Locate the login-config.xml file in the *[appserver root]*/server/all/conf folder and add the following application policy as a child of the <policy> node:

```
<application-policy name = "FileNetP8WSI">
 <authentication>
 <login-module code = "com.filenet.api.util.WSILoginModule" flag =
     "required" />
 </authentication>
</application-policy>
```

9. (FileNet Process Engine Connector on JBoss only) If your deployment uses the process engine, add the following node to the login-config file:

```
<application-policy name = "FileNetP8">
  <authentication>
    <login-module code = "com.filenet.api.util.WSILoginModule" flag =
    "required" />
  </authentication>
</application-policy>
```

10. (WebLogic only) If a custom JAAS configuration file is being used, add the following lines in the custom JAAS configuration file:

```
FileNetP8 {weblogic.security.auth.login.UsernamePasswordLoginModule
  required authOnLogin=true;};
FileNetP8WSI {com.filenet.api.util.WSILoginModule required;};
FileNetP8Engine
  {weblogic.security.auth.login.UsernamePasswordLoginModule required
  authOnLogin=true;};
FileNetP8Server
  {weblogic.security.auth.login.UsernamePasswordLoginModule required
  authOnLogin=true;};
```

Tip: You can determine whether a custom JAAS configuration file is used from the value of the `-Djava.security.auth.login.config` property in the application server start command.

11. (FileNet Process Engine Connector on WebLogic only) If your deployment uses the FileNet Process Engine Connector, do one of these tasks, as applicable to your configuration:

    - If your deployment uses a custom JAAS file, add the following line to the custom JAAS file:

      ```
      FileNetP8 {com.filenet.api.util.WSILoginModule required;};
      ```

    - If your deployment does not use a custom JAAS file, use a text editor to create a file with the following content:

      ```
      FileNetP8 {com.filenet.api.util.WSILoginModule required;};
      ```

      Save the file as jaas.conf.WSI and add the location of the file as the following Java option in the WebLogic Server start command:

      ```
      -Djava.security.auth.login.config=<JAAS file location>
      ```

      For example, if you save the file as C:/pe_config/jaas.conf.WSI, add the following Java option:

      ```
      -Djava.security.auth.login.config=C:/pe_config/jaas.conf.WSI
      ```

12. If JBoss Application Server or WebLogic Server is not currently running, start the server. Otherwise, stop and then restart the server. If JBoss or WebLogic runs as a service, start (or restart) the Adobe LiveCycle ES service.

13. Open a web browser and enter this URL:

    http://localhost:<port number>/adminui (local deployment using the default port)

    On JBoss, the port number is 8080. On WebLogic, the port number is 7001.

14. Log in using the default user name and password:

    User name: administrator

    Password: password

15. Click **Services** > **LiveCycle ES Connector for IBM FileNet**.

16. Provide all of the required FileNet repository information and, under Repository Service Provider Information, select **IBM FileNet Repository Provider**.

    If your deployment uses the optional process engine service, under Process Engine Settings, select **Use Process Engine Connector Service** and specify the process engine settings. For more information, click the **Help** link in the upper-right corner of the page.

    Note: The credentials that you provide in this step are validated later when you start the IBM FileNet repository services. If the credentials are not valid, an error is thrown and the services will not start.

17. Click **Save** and navigate to **Services** > **Applications and Services** > **Service Management**.

18. Select the check box next to **IBMFileNetProcessEngineConnector** (if configured) and then click **Start.**

19. Select the check box next to each of these services and then click **Start**:

    - IBMFileNetAuthProviderService
    - IBMFileNetContentRepositoryConnector
    - IBMFileNetRepositoryProvider
    - IBMFileNetProcessEngineConnector (if configured)

    If any of the services do not start correctly, verify the settings entered in step 16.

20. Do one of the following tasks:

    - To use the FileNet Authorization service (IBMFileNetAuthProviderService) to display content from a FileNet object store in the Resources view of Workbench ES, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle ES authorization and must be configured to log in to Workbench ES by using FileNet credentials.
    - To use the LiveCycle ES repository, log in to Workbench ES by using the LiveCycle ES super administrator credentials (by default, *Administrator* and *password*). The credentials provided in step 16 use the default LiveCycle ES authorization service for accessing the default repository in this case.

21. Enable the Remoting and EJB endpoints by doing these tasks:

    - Log in to LiveCycle Administration Console and click **Home > Services > Application and Services > Service Management**.
    - Filter the category *Connector for IBM FileNet* and click **IBMFileNetContentRepositoryConnector:1.0.**
    - Select the disabled endpoints and enable them.

22. For a JBoss installation, select **Start** > **Control Panel** > **Administrative Tools** > **Services** and restart the **JBoss for Adobe LiveCycle ES** service.

23. For a WebLogic installation, select **Start** > **Control Panel** > **Administrative Tools** > **WebLogic for Node Manager** and restart the **BEA Products NodeManager** service.

24. Restart your application server.

25. Log in to LiveCycle Administration Console and click **Settings** > **User Management** > **Domain Management**.

26. Click **New Enterprise Domain** and then type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

    Note: When using DB2 for your LiveCycle ES database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See "Adding enterprise domains" in *User Management Help*.)

    Note: When using MySQL for your LiveCycle ES database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in *User Management Help*.)

27. Add a custom authentication provider:
    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **Custom**.
    - Slect **IBMFileNetAuthProviderService** and then click **OK**.

28. Add an LDAP authentication provider:
    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **LDAP** and then click **OK**.

29. Add an LDAP directory:
    - Click **Add Directory** and, in the **Profile Name** box, type a unique name, and then click **Next**.
    - Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields.
    - (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required. When finished, click **Next**.
    - Configure the user settings, click **Next**, configure group settings as required, and then click **Next**.

      For details about the settings, click **Help** link in the upper-right corner of the page.

30. Click **OK** to exit the Add Directory page, and then click **OK** again.

31. Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.

    (Optional) To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.

32. Navigate to **Settings** > **User Management** > **Users and Groups**.

33. Search for users that were synchronized from LDAP and perform these tasks:

- Select one or more users and click **Assign Role**.
- Select one or more LiveCycle ES roles and click **OK**.
- Click **OK** a second time to confirm the role assignment.

Repeat this step for all users you want to assign roles to. For more information, click the **Help** link in the upper-right corner of the page.

34. Start Workbench ES and log in using the following credentials:

    User name: *[username]@[repository_name]*

    Password: *[password]*

    The FileNet object store should now be visible in the Resources view within Workbench ES. If you do not log in using the *username@repository name*, Workbench ES attempts to log in to the default repository specified in step 16.

35. (Optional) If you intend to install the LiveCycle ES Samples for Connector for IBM FileNet, create a FileNet object store named *Samples* and install the samples in that object store.

After you configure your Connector for IBM FileNet service, it is recommended that you see *Administering LiveCycle ES* for information about configuring Workbench ES functions properly with your FileNet repository.

➤ **To configure the connector using FileNet 4.0.1 and EJB transport:**

1. Locate the adobe-component-ext.properties file in the *[BEA_HOME]*/user_projects/domains/Adobe_LiveCycle folder (if the file does not exist, create it).

2. Add a new system property that provides the location of the following FileNet Application Engine JAR files:

   - javaapi.jar
   - log4j-1.2.13.jar
   - p8cjares.jar
   - Jace.jar
   - (optional) pe.jar

   Note: Add the pe.jar file only if your deployment uses the IBMFileNetProcessEngineConnector service. The new system property should reflect this structure:

   ```
   [component id].ext=[JAR files and/or folders]
   ```

   For example, using a default FileNet Application Engine installation on a Windows operating system, add the following system property on a new line, with no line breaks, and end the line with a carriage return:

   Note: The following text contains formatting characters for line breaks. If you copy this text to a location outside this document, remove the formatting characters when you paste it to the new location.

   ```
   com.adobe.livecycle.ConnectorforIBMFileNet.ext=
   C:/Program Files/FileNet/AE/CE_API/lib2/javaapi.jar,
   C:/Program Files/FileNet/AE/CE_API/lib2/log4j-1.2.13.jar,
   C:/Program Files/FileNet/AE/CE_API/lib2/p8cjares.jar,
   C:/Program Files/FileNet/AE/CE_API/lib/Jace.jar,
   C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar
   ```

Note: Add `C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar` only if your deployment uses the IBMFileNetProcessEngineConnector service.

3. (FileNet Process Engine Connector only) Using a text editor, create a file with the following content as a single line and end the line with a carriage return:

```
RemoteServerUrl = cemp:http://[contentserver_IP]:[contentengine_port]/
wsi/FNCEWS40DIME/
```

4. Save the file you created as WCMApiConfig.properties in a separate folder, and add the location of the folder that contains the WCMApiConfig.properties file to the adobe-component-ext.properties file.

   For example, if you save the file as c:/pe_config/WCMApiConfig.properties, add the path c:/pe_config to the adobe-component-ext.properties file.

5. If a custom JAAS configuration file is being used, add the following lines in the custom JAAS configuration file:

```
FileNetP8 { weblogic.security.auth.login.
  UsernamePasswordLoginModule required authOnLogin=true; };
FileNetP8WSI { com.filenet.api.util.WSILoginModule required; };
FileNetP8Engine { weblogic.security.auth.login.
  UsernamePasswordLoginModule required authOnLogin=true; };
FileNetP8Server { weblogic.security.auth.login.
  UsernamePasswordLoginModule required authOnLogin=true; };
```

Tip: You can determine whether a custom JAAS configuration file is used from the value of the `-Djava.security.auth.login.config` property in the application server start command.

6. (FileNet Process Engine Connector only) If your deployment uses the FileNet Process Engine Connector, do one of these tasks, as applicable to your configuration:

   - If your deployment uses a custom JAAS file, add the following line to the custom JAAS file:

     ```
     FileNetP8 {com.filenet.api.util.WSILoginModule required;};
     ```

   - If your deployment does not use a custom JAAS file, use a text editor to create a file with the following content:

     ```
     FileNetP8 {com.filenet.api.util.WSILoginModule required;};
     ```

     Save the file as jaas.conf.WSI and add the location of the file as the following Java option in the WebLogic Server start command:

     ```
     -Djava.security.auth.login.config=<JAAS file location>
     ```

     For example, if you save the file as C:/pe_config/jaas.conf.WSI add the following Java option:

     ```
     -Djava.security.auth.login.config=C:/pe_config/jaas.conf.WSI
     ```

7. If WebLogic Server is not currently running, start the server. Otherwise, stop and then restart the server.

8. Open a web browser and enter this URL:

   `http://localhost:7001/adminui` (local deployment using the default port)

9. Log in using the default user name and password:

   User name: administrator

   Password: password

10. Click **Services** > **LiveCycle ES Connector for IBM FileNet**.

11. Provide all of the required FileNet repository information and, under Repository Service Provider Information, select **IBM FileNet Repository Provider**.

    If your deployment uses the optional process engine service, under Process Engine Settings, select **Use Process Engine Connector Service** and specify the process engine settings. For more information, click the **Help** link in the upper-right corner of the page.

    Note: The credentials you provide during this step are validated later when you start the IBM FileNet repository services. If the credentials are not valid, an error is thrown and the services will not start.

12. Click **Save**.

13. Under FileNet DSC Configuration Information, in the **Port Number box**, enter the port number where Content Engine is running. The default port is 7001.

14. Click **Save** and then navigate to **Services** > **Applications and Services** > **Service Management**.

15. Select the check box next to each of these services and then click **Start**:

    - IBMFileNetAuthProviderService
    - IBMFileNetContentRepositoryConnector
    - IBMFileNetRepositoryProvider
    - IBMFileNetProcessEngineConnector (if configured)

    If any of the services do not start correctly, verify the settings entered in step 11.

16. Do one of the following tasks:

    - To use the FileNet Authorization service (IBMFileNetAuthProviderService) to display content from a FileNet object store in the Resources view of Workbench ES, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle ES authorization and must be configured to log in to Workbench ES by using FileNet credentials.
    - To use the LiveCycle ES repository, log in to Workbench ES by using the LiveCycle ES super administrator credentials (by default, *Administrator* and *password*). The credentials provided in step 11 use the default LiveCycle ES authorization service for accessing the default repository in this case.

17. Restart WebLogic Server.

18. Log in to LiveCycle Administration Console and click **Settings** > **User Management** > **Domain Management**.

19. Click **New Enterprise Domain** and type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

    Note: When using DB2 for your LiveCycle ES database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See "Adding enterprise domains" in *User Management Help*.)

    Note: When using MySQL for your LiveCycle ES database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in *User Management Help*.)

20. Add a custom authentication provider:

    - Click **Add Authentication** and, in the **Authentication Provider** list, select **Custom**.

- Select **IBMFileNetAuthProviderService** and **c**lick **OK**.

21. Add an LDAP authentication provider:
    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **LDAP** and then click **OK**.
22. Add an LDAP directory:
    - Click **Add Directory** and, in the **Profile Name** box, type a unique name, and then click **Next**.
    - Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields.
    - (Optional) Select **Retrieve Base DN** to retrieve base domain names as required. When finished, click **Next**.
    - Configure the user settings, click **Next**, configure group settings,as required, and then click **Next**.

      For information, click the **Help** link in the upper-right corner of the page.
23. Click **OK** to exit the Add Directory page, and then click **OK** again.
24. Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.

    (Optional) To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.
25. Navigate to **Settings** > **User Management** > **Users and Groups**.
26. Search for users that were synchronized from LDAP and perform these tasks:
    - Select one or more users and click **Assign Role**.
    - Select one or more LiveCycle ES roles,and click **OK**.
    - Click **OK** a second time to confirm the role assignment.

    Repeat this step for all users you want to assign roles to. For more information, click the **Help** link in the upper-right corner of the page.
27. Start Workbench ES and log in using the following credentials:

    User name: *[username]@[repository_name]*

    Password: *[password]*

    The FileNet object store should now be visible in the Resources view within Workbench ES. If you do not log in by using the *username@repository name*, Workbench ES attempts to log in to the default repository specified in step 11.
28. (Optional) If you intend to install the LiveCycle ES Samples for Connector for IBM FileNet, you must create a FileNet object store named *Samples* and install the samples in that object store.

After you configure your Connector for IBM FileNet service, it is recommended that you see *Administering LiveCycle ES* for information about configuring Workbench ES functions properly with your FileNet repository.

If you installed the LiveCycle ES Connector for IBM FileNet solution component for the first time (not an upgrade from LiveCycle ES 8.0.x), additional steps are required for configuring the service to connect to

the FileNet object store. (See "Configuring the LiveCycle ES Connector for IBM FileNet service" in the *Installing and Deploying LiveCycle ES* guide for your application server.)

If you upgraded Connector for IBM FileNet from an existing LiveCycle ES 8.0.x installation, you must complete the steps in this section.

➤ **To enable the Remoting and EJB endpoints:**

1. Log in to LiveCycle Administration Console and click **Home > Services** > **Application and Services** > **Service Management**.
2. In the **Category** list, select the category *Connector for IBM FileNet* and click **Filter**.
3. From the filtered results, click **IBMFileNetContentRepositoryConnector:1.0**.
4. On the **Configure IBMFileNetContentRepositoryConnector** page, click the **Endpoints** tab, select the disabled endpoints and click **Enable**.

➤ **To configure the IBMFileNetProcessEngineConnector service using FileNet 3.5:**

1. Locate the adobe-component-ext.properties file in the following directory:
   - *(WebLogic) [BEA HOME]*/user_projects/domains/Adobe_LiveCycle
   - *(JBoss) [appserver root]*/bin

   Modify the existing system property for Connector for IBM FileNet that provides the location of the FileNet Application Engine JAR file called pe.jar. The updated system property should reflect this structure:

   ```
   [component id].ext=[JAR files and/or folders]
   ```

   For example, using a default FileNet Application Engine installation on a Windows operating system, modify the file to reflect the following system property on a new line, with no line breaks, and end the line with a carriage return:

   Note: If you copy this text to a location outside this document, remove any formatting characters or line breaks when you paste it to the new location.

   ```
   com.adobe.livecycle.ConnectorforIBMFileNet.ext= C:/Program
   Files/FileNet/lib2/activation.jar, C:/Program Files/FileNet/lib2/javaapi.jar,
   C:/Program Files/FileNet/lib2/log4j-1.2.8.jar, C:/Program
   Files/FileNet/lib2/mailapi.jar, C:/Program Files/FileNet/lib2/p8cjares.jar,
   C:/Program Files/FileNet/lib2/soap.jar, C:/Program
   Files/FileNet/lib2/xercesImpl.jar, C:/Program
   Files/FileNet/lib2/xml-apis.jar, C:/Program Files/FileNet/lib2/pe.jar
   ```

2. If the application server is not currently running, start the server; otherwise, stop and then restart the server.
3. If you are upgrading a cluster, repeat steps 1 to 2 on each server instance of the cluster.
4. Open a web browser and enter this URL:

   http://localhost:[port]/adminui (local deployment using the default port)

5. Log in using the default user name and password:

   User name: *administrator*

   Password: *password*

6. Click **Services** > **LiveCycle ES Connector for IBM FileNet**.

7. Under Process Engine Settings, select **Use Process Engine Connector Service** and specify the process engine settings. For more information, click the **Help** link on the upper-right corner of the page.

   Note: The credentials you provide in this step are validated later when you start the IBM FileNet repository services. If the credentials are not valid, an error is thrown and the services will not start.

8. Click **Save**.

9. Navigate to **Services** > **Applications and Services** > **Service Management**.

10. Select the check box next to the **IBMFileNetProcessEngineConnector** service and click **Start**. If the service does not start correctly, verify the settings that are entered in step 7.

11. Restart the server.

➤ **To configure the IBMFileNetProcessEngineConnector service using FileNet 4.0.1 and CEWS Tranport:**

1. Locate the adobe-component-ext.properties file in the following directory:

   - (WebLogic) *[BEA HOME]*/user_projects/domains/Adobe_LiveCycle
   - (JBoss) *[appserver root]*/bin

   Modify the existing system property for Connector for IBM FileNet that provides the location of the FileNet Application Engine JAR file called pe.jar. The updated system property should reflect this structure:

   ```
   [component id].ext=[JAR files and/or folders]
   ```

   For example, using a default FileNet Application Engine installation on a Windows operating system, modify the file to reflect the following system property on a new line, with no line breaks, and end the line with a carriage return:

   Note: If you copy this text to a location outside this document, remove any formatting characters or line breaks when you paste it to the new location.

```
com.adobe.livecycle.ConnectorforIBMFileNet.ext= C:/Program
Files/FileNet/AE/CE_API/lib2/javaapi.jar, C:/Program
Files/FileNet/AE/CE_API/lib2/log4j-1.2.13.jar, C:/Program
Files/FileNet/AE/Workplace/WEB-INF/lib/soap.jar, C:/Program
Files/FileNet/AE/CE_API/wsi/lib/wasp.jar, C:/Program
Files/FileNet/AE/CE_API/wsi/lib/builtin_serialization.jar, C:/Program
Files/FileNet/AE/CE_API/wsi/lib/wsdl_api.jar, C:/Program
Files/FileNet/AE/CE_API/wsi/lib/jaxm.jar, C:/Program
Files/FileNet/AE/CE_API/wsi/lib/jaxrpc.jar, C:/Program
Files/FileNet/AE/CE_API/wsi/lib/saaj.jar, C:/Program
Files/FileNet/AE/CE_API/wsi/lib/jetty.jar, C:/Program
Files/FileNet/AE/CE_API/wsi/lib/runner.jar, C:/Program
Files/FileNet/AE/CE_API/lib2/p8cjares.jar, C:/Program
Files/FileNet/AE/CE_API/lib/Jace.jar, C:/Program
Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar
```

2. Using a text editor, create a file with the following content as a single line and end the line with a carriage return:

```
RemoteServerUrl = cemp:http://[contentserver_IP]:[contentengine_port]/
wsi/FNCEWS40DIME/
```

3. Save the file as WCMApiConfig.properties in a separate folder, and add the location of the folder that contains the file to the adobe-component-ext.properties file.

   For example, if you save the file as c:/pe_config/WCMApiConfig.properties, add the path c:/pe_config to the adobe-component-ext.properties file.

4. (WebLogic only) If your deployment uses the FileNet Process Engine Connector, do one of these tasks, as applicable to your configuration:

   - If your deployment uses a custom JAAS file, add the following line to the custom JAAS file:

     ```
     FileNetP8 {com.filenet.api.util.WSILoginModule required;};
     ```

   - If your deployment does not use a custom JAAS file, use a text editor to create a file called jaas.conf.WSI with the following content:

     ```
     FileNetP8 {com.filenet.api.util.WSILoginModule required;};
     ```

     Add the location of the file as the following Java option in the WebLogic Server start command:

     ```
     -Djava.security.auth.login.config=<JAAS file location>
     ```

     For example, if you save the file as C:/pe_config/jaas.conf.WSI add the following Java option:

     ```
     -Djava.security.auth.login.config=C:/pe_config/jaas.conf.WSI
     ```

5. (JBoss only) Locate the login-config.xml file in the [appserver root]/server/all/conf folder and add the following node:

   ```
   <application-policy name = "FileNetP8">
     <authentication>
       <login-module code = "com.filenet.api.util.WSILoginModule" flag =
       "required" />
     </authentication>
    </application-policy>
   ```

6. If the application server is not currently running, start the server. Otherwise, stop and then restart the server.

7. If JBoss or WebLogic run as a service, start (or restart) the appropriate LiveCycle ES service.

8. If you are upgrading a cluster, repeat steps 1 to 6 on each server instance of the cluster.

9. Open a web browser and enter this URL:

   http://localhost:*[port]*/adminui (local deployment using the default port)

10. Log in using the default user name and password:

    User name: *administrator*

    Password: *password*

11. Click **Services** > **LiveCycle ES Connector for IBM FileNet**.

12. Under Process Engine Settings, select **Use Process Engine Connector Service** and specify the process engine settings. For more information, click the **Help** link on the upper-right corner of the page.

Note: The credentials you provide in this step are validated later when you start the IBM FileNet repository services. If the credentials are not valid, an error is thrown and the services will not start.

13. Click **Save**.

14. Navigate to **Services** > **Applications and Services** > **Service Management**.

15. Select the **IBMFileNetProcessEngineConnector** service and then click **Start**. If the service does not start correctly, verify the settings entered in step10.

➤ **(WebLogic only) To configure the IBMFileNetProcessEngineConnector service using FileNet 4.0.1 and EJB Transport:**

1. Locate the adobe-component-ext.properties file in the following directory:
   - (WebLogic) *[BEA HOME]*/user_projects/domains/Adobe_LiveCycle
   - (JBoss) *[appserver root]*/bin

   Modify the existing system property for Connector for IBM FileNet that provides the location of the FileNet Application Engine JAR file called pe.jar.

   The updated system property should reflect this structure:

   ```
   [component id].ext=[JAR files and/or folders]
   ```

   For example, using a default FileNet Application Engine installation on a Windows operating system, modify the file to reflect the following system property on a new line, with no line breaks, and end the line with a carriage return:

Note: If you copy this text to a location outside this document, remove any formatting characters or line breaks when you paste it to the new location.

```
com.adobe.livecycle.ConnectorforIBMFileNet.ext= C:/Program
Files/FileNet/AE/CE_API/lib2/javaapi.jar, C:/Program
Files/FileNet/AE/CE_API/lib2/log4j-1.2.13.jar, C:/Program
Files/FileNet/AE/CE_API/lib2/p8cjares.jar, C:/Program
Files/FileNet/AE/CE_API/lib/Jace.jar, C:/Program
Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar
```

2. Using a text editor, create a file with the following content as a single line and end the line with a carriage return:

   ```
   RemoteServerUrl = cemp:http://[contentserver_IP]:[contentengine_port]/
   wsi/FNCEWS40DIME/
   ```

3. Save the file as WCMApiConfig.properties in a separate folder, and add the location of the folder that contains the file to the adobe-component-ext.properties file.

   For example, if you save the file as c:/pe_config/WCMApiConfig.properties, add the path c:/pe_config to the adobe-component-ext.properties file.

4. If your deployment uses the FileNet Process Engine Connector, do one of these tasks, as applicable to your configuration:
   - If your deployment uses a custom JAAS file, add the following line to the custom JAAS file:

     ```
     FileNetP8 {com.filenet.api.util.WSILoginModule required;};
     ```

   - If your deployment does not use a custom JAAS file, use a text editor to create a file called jaas.conf.WSI with the following content:

```
FileNetP8 {com.filenet.api.util.WSILoginModule required;};
```

Add the location of the file as the following Java option in the WebLogic Server start command:

```
-Djava.security.auth.login.config=<JAAS file location>
```

For example, if you save the file as C:/pe_config/jaas.conf.WSI add the following Java option:

```
-Djava.security.auth.login.config=C:/pe_config/jaas.conf.WSI
```

5. If WebLogic Server is not currently running, start the server; otherwise, stop and then restart the server.
6. If you are upgrading a cluster, repeat steps 1 to 5 on each WebLogic Server instance of the cluster.
7. Open a web browser and enter this URL:

   http://localhost:7001/adminui (local deployment using the default port)
8. Log in using the default user name and password:

   User name: *administrator*

   Password: *password*
9. Click **Services** > **LiveCycle ES Connector for IBM FileNet**.
10. Under Process Engine Settings, select **Use Process Engine Connector Service** and specify the process engine settings. For more information, click the **Help** link on the upper-right corner of the page.

    Note: The credentials you provide in this step are validated later when you start the IBM FileNet repository services. If the credentials are not valid, an error is thrown and the services will not start.
11. Click **Save**.
12. Navigate to **Services** > **Applications and Services** > **Service Management**.
13. Select the **IBMFileNetProcessEngineConnector** service and then click **Start**. If the service does not start correctly, verify the settings entered in step10.

Configuring the Connector for IBM Content Manager service

If you installed the Connector for IBM Content Manager service as part of your LiveCycle ES solution, complete the following procedure to configure the service to connect to the IBM Content Manager data store.

➤ **To configure Connector for IBM Content Manager:**

1. Locate the `adobe-component-ext.properties` file. For JBoss the file is in the *[LiveCycleES root]*\jboss\bin folder. For WebLogic, the file is in the *[BEA HOME]*/user_projects/domains/Adobe_LiveCycle folder (If the file does not exist, you must create it. Add a new system property that provides the location of the following IBM II4C JAR Files, Config folder containing the IBM II4C property files and a ZIP file from DB2 Universal Database Client installation:
   - Clio4CM.jar
   - cmb81.jar
   - cmbcm81.jar
   - cmbdb281.jar
   - cmbdb2c81.jar
   - cmbfed81.jar
   - cmbfedc81.jar
   - cmbicm81.jar
   - cmbicmc81.jar
   - cmbicmcup.jar
   - cmbjdbc81.jar
   - cmbjdbcc81.jar
   - cmblog4j81.jar
   - cmbsdk81.jar
   - cmbservlets81.jar
   - cmbtag81.jar
   - cmbupes81.jar
   - cmbutil81.jar
   - cmbutilfed81.jar
   - cmbutilicm81.jar
   - cmbutiljdbc81.jar
   - cmbview81.jar
   - cmbwas81.jar
   - cmbwcm81.jar
   - cmbwebservices.jar
   - cmbxmlmap.jar
   - cmbxmlservice.jar
   - common.jar

- common.resources.jar
- ecore.jar
- ecore.resources.jar
- ecore.xmi.jar
- icmadm81.jar
- icmrm81.jar
- icmsdk81.jar
- jcache.jar
- log4j-1.2.8.jar
- NLVLog.jar
- xalan.jar
- xerces.jar
- xsd.jar
- xsd.resources.jar
- cmgmt (copy this folder and its contents)
- db2java.zip

The new system property look like this structure:

```
[component id].ext=[JAR files and/or folders]
```

For example, using a default DB2 Universal Database Client and II4C installation, in the file, add the following system property on a new line, with no line breaks, and end the line with a carriage return:

```
com.adobe.livecycle.ConnectorforIBMCM.ext=
C:/Program Files/IBM/db2cmv8/lib/Clio4CM.jar,
C:/Program Files/IBM/db2cmv8/lib/cmb81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbcm81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbdb281.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbdb2c81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbfed81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbfedc81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbicm81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbicmc81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbicmcup.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbjdbc81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbjdbcc81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmblog4j81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbsdk81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbservlets81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbtag81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbupes81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbutil81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbutilfed81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbutilicm81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbutiljdbc81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbview81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbwas81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbwcm81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbwebservices.jar,
```

```
C:/Program Files/IBM/db2cmv8/lib/cmbxmlmap.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbxmlservice.jar,
C:/Program Files/IBM/db2cmv8/lib/common.jar,
C:/Program Files/IBM/db2cmv8/lib/common.resources.jar,
C:/Program Files/IBM/db2cmv8/lib/ecore.jar,
C:/Program Files/IBM/db2cmv8/lib/ecore.resources.jar,
C:/Program Files/IBM/db2cmv8/lib/ecore.xmi.jar,
C:/Program Files/IBM/db2cmv8/lib/icmadm81.jar,
C:/Program Files/IBM/db2cmv8/lib/icmrm81.jar,
C:/Program Files/IBM/db2cmv8/lib/icmsdk81.jar,
C:/Program Files/IBM/db2cmv8/lib/jcache.jar,
C:/Program Files/IBM/db2cmv8/lib/log4j-1.2.8.jar,
C:/Program Files/IBM/db2cmv8/lib/NLVLog.jar,
C:/Program Files/IBM/db2cmv8/lib/xalan.jar,
C:/Program Files/IBM/db2cmv8/lib/xerces.jar,
C:/Program Files/IBM/db2cmv8/lib/xsd.jar,
C:/Program Files/IBM/db2cmv8/lib/xsd.resources.jar,
C:/Program Files/IBM/db2cmv8/cmgmt,
C:/Program Files/IBM/SQLLIB/java/db2java.zip
```

2. If JBoss or WebLogic is not currently running, start the JBoss for Adobe LiveCycle ES service or WebLogic for Adobe LiveCycle ES service. Otherwise, if the Adobe LiveCycle ES service is currently running, stop and then restart the service.

You can now connect to the IBM Content Manager data store from the IBMCMConnectorService Property Sheets by using the Use User Credentials as the login mode.

You have now completed the required steps for this procedure.

(Optional) If you want to connect to IBM Content Manager data store from IBMCMConnectorService Property Sheets by using the Use Credentials From Process Context as the login mode, complete the following procedure.

➤ **To connect using Use Credentials from process context login mode:**

1. Open a web browser and enter one of the following URLs:
   - (JBoss) http://localhost:8080/adminui (local deployment using the default port)
   - (WebLogic) http://localhost:8001/adminui (local deployment using the default port)
2. Log in using the default user name and password:

   User name: *administrator*

   Password: *password*
3. Click **Services** > **LiveCycle ES Connector for IBM Content Manager** > **Configuration Settings**.
4. Type all of the required repository information and click **Save**. For more information about the IBM Content Manager repository information, click the **Help** link in the upper-right corner of the page.
5. Do one of the these tasks:
   - To use the IBM Content Manager Authorization service (IBMCMProviderService) to use content from an IBM Content Manager data store, in the Processes view of Workbench ES, continue with this procedure. Using the IBM Content Manager Authorization service overrides the default LiveCycle ES

authorization and must be configured to log in to Workbench ES by using IBM Content Manager credentials.

- To use the System Credentials provided in step 4 to use content from an IBM Content Manager data store, in the Processes view of Workbench ES, log in to Workbench ES by using the LiveCycle ES super administrator credentials (by default, `Administrator` and `password`). You have now completed the required steps for this procedure. The System Credentials that are provided in step 4 use the default LiveCycle ES authorization service for accessing the default repository in this case.

6. For a JBoss installation, select **Start** > **Control Panel** > **Administrative Tools** > **Services** and restart the **JBoss for Adobe LiveCycle ES** service.

7. For a WebLogic installation, select **Start** > **Control Panel** > **Administrative Tools** > **WebLogic for Node Manager** and restart the **BEA Products NodeManager** service.

8. Log in to the LiveCycle Administration Console, and click **Settings** > **User Management** > **Domain Management**.

9. Click **New Enterprise Domain** and type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

   Note: When using DB2 for your LiveCycle ES database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See "Adding enterprise domains" in *User Management Help*.)

   Note: When using MySQL for your LiveCycle ES database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in *User Management Help*.)

10. Add a custom authentication provider:
    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **Custom**, and then select **IBMCMAuthProviderService** and click **OK**.

11. Add an LDAP authentication provider:
    - Click **Add Authentication**.
    - In the **Authentication Provider** list, select **LDAP** and then click **OK**.

12. Add an LDAP directory:
    - Click **Add Directory**.
    - In the **Profile Name** box, type a unique name, and then click **Next**.
    - Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields. (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required. When finished, click **Next**.
    - Configure the user settings, click **Next**, configure group settings as required, and then click **Next**.

    For details about the above settings, click the **Help** link in the upper-right corner of the page.

13. Click **OK** to exit the Add Directory page and click **OK** again.

14. Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.

15. To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.

16. Navigate to **Settings** > **User Management** > **Users and Groups**.

17. Search for users that were synchronized from LDAP and do these tasks:
    - Select one or more users and click **Assign Role**.
    - Select one or more LiveCycle ES roles and click **OK**.
    - Click **OK** a second time to confirm the role assignment.

    Repeat this step for all users that you want to assign roles to. For more information, click the **Help** link in the upper-right corner of the page.

18. Start Workbench ES and log in using the following credentials:

    Username: *[username]@[repository_name]*

    Password: *[password]*

    The IBM Content Manager data store can now be used in the Processes view within Workbench ES when the login mode for IBMCMConnectorService orchestrable components is selected as **Use Credentials from process context**.

After you configure your Connector for IBM Content Manager service, it is recommended that you see *Administering LiveCycle ES*.

Re-creating the JBoss for Adobe LiveCycle ES service

The JBoss turnkey installation option creates the Windows service known as *JBoss for Adobe LiveCycle ES* service. You need to re-create only the JBoss for Adobe LiveCycle ES service in order to make changes to the JBoss configuration. For example, you can re-create the service to modify the heap size or the MaxPerm size, or to set the JBoss for Adobe LiveCycle ES service to autostart.

Note: LiveCycle ES stores the configuration for JBoss in the Windows registry and not in the configuration files in the Jboss/bin directory. As a result, if the configurations must be altered, the supported procedure is to re-create the service with your preferred configurations.

Before you re-create the service, delete the old service.

➤ **To stop and delete the current JBoss for Adobe LiveCycle ES service:**

1. Determine whether the JBoss for Adobe LiveCycle ES service is running. From a Windows command prompt, type this line:

   ```
   sc query "JBoss for Adobe LiveCycle ES"
   ```

   If the service is running, the following text is returned:

   ```
   SERVICE_NAME: JBoss for Adobe LiveCycle ES
          TYPE : 10  WIN32_OWN_PROCESS
          STATE : 4  RUNNING
          (STOPPABLE,NOT_PAUSABLE,ACCEPTS_SHUTDOWN)
          WIN32_EXIT_CODE    : 0  (0x0)
          SERVICE_EXIT_CODE: 0  (0x0)
          CHECKPOINT        : 0x0
          WAIT_HINT         : 0x0
   ```

2. If the service is running, stop it by typing the following line from a Windows command prompt:

   ```
   sc stop "JBoss for Adobe LiveCycle ES"
   ```

3. Remove the current service from the Windows registry by typing the following line from a Windows command prompt:

   ```
   sc delete "JBoss for Adobe LiveCycle ES"
   ```

   Note: If the service is running or another process has an open handle to the service, the service is simply marked for deletion.

➤ **To re-create the JBoss for Adobe LiveCycle ES service:**

1. Ensure that the JBoss for Adobe LiveCycle ES service is removed and then, from a Windows command prompt, type the following line:

   ```
   sc query "JBoss for Adobe LiveCycle ES"
   ```

   Ensure that the following line is returned:

   ```
   The specified service does not exist as an installed service.
   ```

2. Back up the original InstallJBossService.bat file before you make any modifications.

3. Edit the *[LC_INSTALL_ROOT]*\jboss\InstallJBossService.bat file, and change the JBoss configuration accordingly. For example, you can modify the Heap Size value.

4. Save the changes to the file in a new file called InstallJBossServiceforProductionServerXVersion2.bat.

5. Run the InstallJBossServiceforProductionServerXVersion2.bat file by typing the following line from a Windows command prompt:

   ```
   InstallJBossServiceforProductionServerXVersion2.bat
   ```

6. Start the JBoss for Adobe LiveCycle ES service by typing the following line from a Windows command prompt:

   ```
   sc start "JBoss for Adobe LiveCycle ES"
   ```

   Note: If you have LiveCycle ES PDF Generator ES or LiveCycle ES PDF Generator 3D ES installed, you need to provide the computer name and administrator password when starting the service.

7. Verify that the JBoss for Adobe LiveCycle ES service is running by typing the following line from a Windows command prompt:

   ```
   sc query "JBoss for Adobe LiveCycle ES"
   ```

8. Review the JBoss log files located in the *[LC_INSTALL]*\jboss\server\all\log\ folder to ensure that the JBoss Application Server is using the new configuration parameters you specified.

   Note: If you have PDF Generator ES or PDF Generator 3D ES installed, a log file is not created when the service is started. This omission is for security reasons. The PDF Generator ES or PDF Generator 3D ES services require that the administrator password is specified. Therefore, no log file is generated because it would log the password.

The JBoss for Adobe LiveCycle ES service is a launcher service for the JBoss process. The service will show as being started even if the Java process associated with JBoss is still starting and is not ready to respond to requests. Conversely, when the Windows Service for JBoss is ordered to stop, it issues a terminate command to the JBoss Java process and waits for the process to stop. The JBoss process shutdown can take several minutes.

4 Troubleshooting

This section provides details about troubleshooting LiveCycle ES.

Viewing the log files

Events, such as run-time or startup errors, are recorded to the application server log files. If you have problems deploying to the application server, you can use the log files to help you find the problem. Use any text editor to open the log files.

JBoss Application Server logs

The JBoss Application Server log files are in the *[LiveCycleES root]*/jboss/server/all/log directory. These log files are provided:

- boot.log
- server.log.[yyyy-mm-dd]
- server.log

LiveCycle ES installation logs

The installation log files, adobe_lc8.2_server_install.log and adobe_lc8.2_server_install_jboss_service.log are in the temp\tmp directory.

LiveCycle Configuration Manager logs

The LiveCycle Configuration Manager log files are in the *[LiveCycleES root]*\configurationManager\log directory.

Troubleshooting considerations

This section contains possible issues you may encounter when installing and deploying LiveCycle ES, and suggests steps for avoiding issues or working around them.

LiveCycle Output ES issue with shared printer

If you installed LiveCycle Output ES by using the WebLogic turnkey installation, you may experience printing issues when using a shared printer.

➤ **To address the printing issues:**

1. Stop Managed Server from a command line.
2. Stop Node Manager from the Windows services panel.
3. Stop WebLogic Administration Server from the Windows services panel.
4. Run both Node Manager and WebLogic Administration Server from a domain credential (assuming that printers are accessible to this user).
5. Start Managed Server from the WebLogic Server Administration Console.

LiveCycle Output ES will now start receiving the required credentials and print on all accessible printers.

Changing the Windows server name causes errors on WebLogic

If you need to change the name of your Windows 2003 server after you install and configure your LiveCycle ES environment on WebLogic, regenerate your keystore; otherwise, the Node Manager will fail. (See "Configuring the keystore" in *Installing and Deploying LiveCycle ES for WebLogic*.)

"HTTP tunneling is disabled" error messages on WebLogic

If you encounter error messages such as the message below, in the WebLogic Administration Server log file, add an argument to your Server Start page for the managed server called *LCServer1* to change the protocol from HTTP to T3.

```
HTTPClntLogin: Login rejected with code: 'Failed', reason:
java.net.ProtocolException: HTTP tunneling is disabled
```

➤ **To change the transport protocol from HTTP to T3:**

1. To access the WebLogic Server Administration Console, type `http://[host name]:[port]/console` in the URL line of a web browser, where ***[port]*** is the non-secure listening port. By default, this port value is 7001.
2. On the login screen, type your WebLogic user name and password and click **Log In**.
3. Under Change Center, click **Lock & Edit**.
4. Under Domain Structure, click **Environment** > **Servers** and, in the right pane, click the managed server name **LCServer1**.
5. In the Settings for Server pane, click the **Configuration** tab > **Server Start** tab.

6. In the **Arguments** box, add the following argument, separated by a space delimiter:

   ```
   -Dweblogic.management.server=t3://[hostname]:[port]
   ```

7. Click **Save** and then click **Activate Changes**.

Missing DLL error on WebLogic

You may receive the following error message while WebLogic Admininstation Server is starting:

"Unable to load performance pack. Using Java I/O instead. Please ensure that wlntio.dll is in PATH."

This message can be safely ignored. If you experience performance issues, open a command prompt and add the path to the DLL in your environment variables as follows:

```
set PATH=%WL_HOME%\server\bin;C:\Programs\Adobe_LiveCycle_8.2\weblogic\wlser
ver_10.0\server\native\win\32
```

Connector for EMC Documentum error

While using LiveCycle ES Connector for EMC Documentum with the Documentum DFC 5.3 client installed on LiveCycle ES server, you may see the following error in the server logs:

```
DM_CCONTENT_E_REMOVE_DIRECTORY
```

If this occurs, add the following entry to the [DMAPI_CONFIGURATION] section of the dmcl.ini file:

```
'local_clean_on_init=F'
```

On a Windows server, by default the dmcl.ini file is located in the *[Windows Installation Drive]*\WINDOWS folder.

Restart the LiveCycle ES server for this change to take affect.

A Appendix - Turnkey Environment Overview

This table provides an overview of the environment for each of the LiveCycle ES turnkey installations.

Turnkey installation for JBoss	Turnkey installation for WebLogic
J2EE application server: • JBoss 4.0.3 SP1	J2EE application server: • BEA WebLogic 10.1 MP1
Servers: • All	Servers: • AdminServer • LCServer1
Database: • MySQL 5.0.18	Database: • MySQL 5.0.18
Windows services: • MySQL for Adobe LiveCycle ES • JBoss for Adobe LiveCycle ES	Windows services: • MySQL for Adobe LiveCycle ES • BEA Products NodeManager (C_Adobe_LiveCycle8.2_weblogic_wlserver_10.1) • BEA Weblogic Admin for Adobe LiveCycle ES
Primary Ports: • 8080 (Web port)	Primary Ports: • 7001 (AdminServer Web Port) • 8001 (LCServer1 Web Port) • 5559 (Node Manager Port)
Processes: • Mysqld-max-nt.exe [MySQL] • java.exe (JBoss all server)	Processes: • Mysqld-max-nt.exe (MySQL) • beasvc.exe (Node Manager) • beasvc.exe > java.exe (AdminServer) • java.exe (LCServer1)

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