



Installing and Deploying LiveCycle® ES2 for JBoss®

November 30, 2011

Adobe® LiveCycle® ES2

Version 9

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Installing and Deploying Adobe® LiveCycle® ES2 for JBoss®
November 30, 2011

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About This Document

This document is one of several resources that are available to help you learn about Adobe® LiveCycle® ES2 (Enterprise Suite), version 9.0. LiveCycle ES2 is a flexible, extensible platform that helps automate and accelerate the flow of business-critical information to and from customers, partners, constituents, and employees.

What's in this document?

This guide provides information about how to install and configure the following modules on Microsoft® Windows® and Linux® and how to deploy the modules to JBoss® Application Server:

- Adobe LiveCycle Business Activity Monitoring
- Adobe LiveCycle ES2 Connector for EMC Documentum
- Adobe LiveCycle ES2 Connector for IBM FileNet
- Adobe LiveCycle ES2 Connector for IBM Content Manager
- Adobe LiveCycle Content Services ES2
- Adobe LiveCycle Digital Signatures ES2
- Adobe LiveCycle Forms ES2
- Adobe LiveCycle Foundation
- Adobe LiveCycle Output ES2
- Adobe LiveCycle PDF Generator ES2
- Adobe LiveCycle PDF Generator 3D ES2
- Adobe LiveCycle Process Management ES2
- Adobe LiveCycle Reader Extensions ES2
- Adobe LiveCycle Rights Management ES2

Who should read this document?

This guide provides information for administrators or developers who are responsible for installing, configuring, administering, or deploying LiveCycle ES2 components. The information provided is based on the assumption that anyone reading this guide is familiar with J2EE application servers, operating systems, database servers, and web environments.

Conventions used in this document

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

| Name | Default value | Description |
|----------------------------|--|---|
| <i>[LiveCycleES2 root]</i> | Windows: C:\Adobe\Adobe LiveCycle ES2\ Linux and Solaris: /opt/adobe/adobe_lifecycle_es2/ | The installation directory that is used for all LiveCycle ES2 modules. The installation directory contains subdirectories for Adobe LiveCycle Configuration Manager. This directory also includes directories relating to third-party products. |
| <i>[appserver root]</i> | These installation locations are examples. Your installation location may be different. JBoss Application Server on Windows: C:\jboss\ JBoss Application Server on Linux: /opt/jboss / JBoss Enterprise Application Platform on Windows: C:\jboss-eap-4.3\jboss-as\ JBoss Enterprise Application Platform on Linux and Solaris: /opt/jboss-eap-4.3/jboss-as/ | The home directory of the application server that runs the LiveCycle ES2 services. |
| <i>[dbserver root]</i> | Depends on the database type and your specification during installation. | The location where the LiveCycle ES2 database server is installed. |

Most of the information about directory locations in this guide is cross-platform (all file names and paths are case-sensitive on Linux and Solaris. Any platform-specific information is indicated as required.

Additional information

The resources in this table can help you learn more about LiveCycle ES2.

| For information about | See |
|---|--|
| General information about LiveCycle ES2 and the modules | LiveCycle ES2 Overview |
| What's new in this LiveCycle ES2 (Enterprise Suite) release | What's New |
| LiveCycle ES2 terminology | LiveCycle ES2 Glossary |
| LiveCycle ES2 modules | Adobe LiveCycle ES2 |
| Other services and products that integrate with LiveCycle ES2 | Adobe Developer Connection |

| For information about | See |
|---|---|
| Installing Adobe LiveCycle Workbench ES2 | <u>Installing Your Development Environment</u> |
| Upgrading to LiveCycle ES2 from a previous version. | <u>Preparing to Upgrade to LiveCycle ES2</u> <u>Upgrading to LiveCycle ES2 for JBoss</u> |
| Troubleshooting LiveCycle ES2 | <u>Troubleshooting LiveCycle ES2</u> |
| Performing administrative tasks for LiveCycle ES2 | <u>LiveCycle ES2 Administration Help</u> |
| All the documentation available for LiveCycle ES2 | <u>LiveCycle ES2 documentation</u> |
| LiveCycle ES2 release information and last-minute changes that occur to the product | <u>Release Notes</u> |
| Patch updates, technical notes, and additional information about this product version | <u>LiveCycle Technical Support</u> |

This chapter provides information to help you understand the type of installation and deployment you should perform, and information that will help you understand the installation, configuration, and deployment process:

- [“Installation, configuration, and deployment process” on page 10](#)
- [“Installation and deployment list” on page 11](#)

For information about preparing your system for installing LiveCycle ES2, including system requirements, see [Preparing to Install LiveCycle ES2](#).

1.1 Installation, configuration, and deployment process

Installing, configuring, and deploying LiveCycle ES2 involves the following processes:

Installing: Install LiveCycle ES2 by running the installation program. Installing LiveCycle ES2 places all of the required files onto your computer, within one installation directory structure. The default installation directory is C:\Adobe\Adobe LiveCycle ES2 (Windows) or /opt/adobe_lifecycle_es2 (Linux and Solaris); however, you can install the files to a different directory. In this document, the default installation directory is referred to as *[LiveCycleES2 root]*. (See [“Installing the LiveCycle ES2 Modules” on page 12](#).)

Configuring and assembling: Configuring LiveCycle ES2 modifies various settings that determine how LiveCycle ES2 works. Assembling the product places all of the installed components into several deployable EAR and JAR files, according to your configuration instructions. Configure and assemble the components for deployment by running LiveCycle Configuration Manager. (See [“Configuring LiveCycle ES2 for Deployment” on page 17](#).) You can configure and assemble multiple LiveCycle ES2 modules at the same time.

Deploying: Deploying the product involves deploying the assembled EAR files and supporting files to the JBoss Application Server on which you plan to run your LiveCycle ES2 solution. If you have configured and assembled multiple modules, the deployable components are packaged within the deployable EAR files. Components and LiveCycle ES2 archive (LCA) files are packaged as JAR files.

Initializing the LiveCycle ES2 database: Initializing the database to be used with LiveCycle ES2 creates tables for use with User Management and other components. Deploying any module that connects to the LiveCycle ES2 database requires you to initialize the LiveCycle ES2 database after the deployment process.

1.2 Selecting tasks for configuring and deploying

After you perform an installation, you can run LiveCycle Configuration Manager to perform various tasks:

- Configure LiveCycle ES2 modules in an EAR file for deploying to the application server
- Deploy LiveCycle Business Activity Monitoring ES2 EARs
- Initialize LiveCycle ES2 database
- Deploy LiveCycle ES2 components
- Validate LiveCycle ES2 component deployment

- Import LiveCycle ES2 Samples into LiveCycle ES2 (optional)

Note: In addition to the LiveCycle ES2 samples that you can import, you can access more samples from [Adobe web site](#).

- Configure LiveCycle ES2 components

If you install Reader Extensions ES2, you can also specify and import the Reader Extensions ES2 Rights credential that is required for applying usage rights to PDF documents.

If you want to install Business Activity Monitoring, see [“Configuring and deploying LiveCycle Business Activity Monitoring ES2” on page 63](#) after you install all other LiveCycle ES2 components.

If you want to perform a turnkey installation and deployment (installs, configures, and deploys LiveCycle ES2 along with JBoss and MySQL), see [Installing and Deploying LiveCycle ES2 for JBoss Using Turnkey](#).

1.3 Upgrading to LiveCycle ES2

If you are upgrading from LiveCycle 7.x, review the [Upgrading from LiveCycle 7.x to LiveCycle ES2](#) guide.

If you are upgrading to LiveCycle ES2 from LiveCycle 8.x and later, ensure that you completed the tasks that are described in [Preparing to Upgrade to LiveCycle ES2](#) and refer to the [Upgrading to LiveCycle ES2 from LiveCycle ES](#) guide for your application server.

1.4 Installation and deployment list

The following list includes the steps that are required for installing LiveCycle ES2 by using the manual method. Your application server must be installed and configured before you perform the installation.

- Ensure that you have the required software installed and configured in the target environment. (See [Preparing to Install LiveCycle ES2 \(Single Server\)](#).)
- Run the installation program. (See [“Installing the LiveCycle ES2 Modules” on page 12.](#))
- Run LiveCycle Configuration Manager and select the Configure LiveCycle ES2 EARs task. This task configures and assembles LiveCycle ES2. (See [“Configuring LiveCycle ES2 for Deployment” on page 17.](#))
- (See)Deploy the EAR files to the application server. You must do this manually. (See [“Deploying LiveCycle ES2 to JBoss” on page 28.](#))
- Run LiveCycle Configuration Manager to deploy LiveCycle ES2 component files, initialize the LiveCycle ES2 database, and (optionally) deploy product samples. (See [“Configuring LiveCycle ES2 for Deployment” on page 17.](#))
- Access LiveCycle Administration Console and User Management. (See [“Accessing LiveCycle Administration Console” on page 31.](#))
- (Optional) Configure LDAP access. (See [“Configuring LiveCycle ES2 to access LDAP” on page 44.](#))

To perform a turnkey installation and deployment (install, configure, and deploy LiveCycle ES2 along with JBoss and MySQL), see [Installing and Deploying LiveCycle ES2 for JBoss Using Turnkey](#).

2

Installing the LiveCycle ES2 Modules

This section describes the first phase of setting up a LiveCycle ES2 system that is running the LiveCycle ES2 installation program on Windows, Linux, and Solaris. A subsequent phase will include running LiveCycle Configuration Manager to configure and deploy LiveCycle ES2.

Before you install the modules, ensure that your environment includes the software and hardware that is required to run LiveCycle ES2. You should also understand the installation options and have the environment prepared as required. (See [Preparing to Install LiveCycle ES2 \(Single Server\)](#).)

LiveCycle ES2 also provides a command line interface (CLI) for the installation program. See ["Appendix - Install Command Line Interface" on page 88](#) for instructions on using the CLI. There is also a CLI for LiveCycle Configuration Manager. See ["Appendix - LCM Command Line Interface" on page 92](#). These CLIs are intended to be used by advanced users of LiveCycle ES2 or in server environments that do not support the use of the graphical user interface of the installation program or of LiveCycle Configuration Manager.

This chapter covers the following topics:

- ["Checking the installer" on page 12](#)
- ["Installing the product files" on page 13](#)
- ["Viewing the error log" on page 16](#)

2.1 Checking the installer

Observe the following best practices with the installer files before you begin the installation process.

► **Check the DVD installation media:**

Ensure that the installation media that you received is not damaged. If you copy the installer media contents to the hard disk of your computer where you are installing LiveCycle ES2, ensure that you copy the entire DVD contents on to the hard disk. To avoid installation errors, do not copy the DVD install image to a directory path that exceeds the Windows maximum path length limit. Also, do not use special characters such as the number sign character (#) in the local path. If you use special characters in the local path, the appropriate license information may not be displayed during installation.

► **Check the downloaded files:**

If you downloaded the installer from the Adobe web site, verify the integrity of the installer file using the MD5 checksum. Do one of the following to calculate and compare the MD5 checksum of the downloaded file with the checksum published on the Adobe download web page:

- **Linux:** Use the `md5sum` command.
- **Solaris:** Use the `digest` command in Solaris.
- **Windows:** Use a tool such as WinMD5.

► **Expanding the downloaded archive files:**

If you downloaded the ESD from the Adobe web site, extract the entire `[appserver]_DVD.zip` (Windows) or `[appserver]_DVD._unix.tar.gz` (Linux or Solaris) archive file to your computer. For Solaris, use `gunzip` to extract the `.gz` file.

Note: Be sure to keep the directory hierarchy unchanged from the original ESD file.

2.2 Installing the product files

To successfully install, you need read and write permissions for the installation directory. The following installation directories are the defaults; however, you can specify a different directory as required:

- (Windows) `C:\Adobe\Adobe LiveCycle ES2\`
- (Linux or Solaris) `/opt/adobe/adobe_lifecycle_es2/`

If the LiveCycle ES2 installation path contains international characters and the UTF-8 locale is not set on the system, LiveCycle ES2 does not recognize the fonts installation directory within the internationalized `[LiveCycleES2 root]`. To avoid this issue, create a new fonts directory with the UTF-8 locale set and then run the LiveCycle Configuration Manager with UTF-8 locale, by adding the `-Dfile.encoding=utf8` argument in the `ConfigurationManager.bat` or `ConfigurationManager.sh` script.

Caution: When installing LiveCycle ES2, do not use double byte or extended latin characters (such as `âäçèéëïïöüüÄÖßÜ€`) in the installation path.

Caution: (Windows only) The LiveCycle ES2 installation directory path must not contain any non-ASCII characters (for example, international characters such as `é` or `ñ`), otherwise the JBoss Service for Adobe LiveCycle ES2 will fail to start.

When installing on Linux, the installation program uses the logged-in user's home directory as a temporary directory for storing files. As a result, messages such as the following text may appear in the console:

```
WARNING: could not delete temporary file /home/<username>/ismmp001/1556006
```

When you complete the installation, you must manually delete the temporary files.

Caution: Ensure that the temporary directory for your operating system meets the minimum requirements as outlined in [Preparing to Install LiveCycle ES2 \(Single Server\)](#). The temporary directory is one of the following locations:

- (Windows) `TMP` or `TEMP` path as set in the environment variables
- (Linux or Solaris) Logged-in user's home directory

When you are installing the modules on UNIX-like systems, you must be logged in as the root user to successfully install the modules to the default location, which is `/opt/adobe/adobe_lifecycle_es2`. If you are logged in as a non-root user, change the installation directory to one that you have permissions (read-write-execute privileges) for. For example, you can change the directory to `/home/[username]/adobe_lifecycle_es2`.

On Windows, you must have administrator privileges to install LiveCycle ES2.

Temporary files are generated in the system default temp directory or in the directory that you specified. In certain instances, the generated temporary files may remain after the installer is closed. You can remove these files manually.

On Windows, improve the speed of installation by disabling any on-access virus scanning software during installation.

2.2.1 Installing on a Windows staging platform for Linux or UNIX

LiveCycle ES2 can be installed and configured on Windows for deployment on a Linux or UNIX platform. You can use this functionality for installing on a locked-down Linux or UNIX environment. For example, a locked-down environment does not have a graphical user interface installed.

When you run the installation program on Windows, you can choose a Linux or UNIX operating system as the target platform for deploying LiveCycle ES2. The installation program installs binaries for Linux, or Solaris that are also used by LiveCycle Configuration Manager when you configure the product.

The computer running Windows can then be used as a staging location for the deployable objects, which can be copied to a Linux or UNIX computer for deployment to the application server. The application server that you are targeting must be consistent with what you choose during installation and configuration, regardless of the operating system.

2.2.2 Configuring the JAVA_HOME environment variable

The JAVA_HOME environment variable must point to the Java SDK for your application server as outlined in the Supported Software table in [Preparing to Install LiveCycle ES2 \(Single Node\)](#).

2.2.3 Installing LiveCycle ES2

This section covers the initial installation of LiveCycle ES2 product files. For information about configuration and deployment, see [“Configuring LiveCycle ES2 for Deployment” on page 17](#).

Note: To avoid permission issues during deployment, ensure that you run the LiveCycle ES2 installer and LiveCycle Configuration Manager as the same user who will run the application server.

► Install LiveCycle ES2:

1. Start the installation program:
 - (Windows) Do one of the following:
 - Navigate to the `lifecycle_server` directory on the installation media or the folder in your hard disk, and launch the `run_windows_installer.bat` file. This batch file launches the appropriate installer (32-bit or 64-bit), depending on the Windows version.
 - Navigate to the appropriate directory on the installation media or folder on your hard disk where you copied the installer, and double-click the `install.exe` file.
 - (Windows 32-bit) `\lifecycle_server\9.0\Disk1\InstData\Windows\VM`
 - (Windows 64-bit) `\lifecycle_server\9.0\Disk1\InstData\Windows_64bit\VM`
 - (Linux, Solaris) Navigate to the appropriate directory, and from a command prompt, type `./install.bin`.
 - (Linux) `/lifecycle_server/9.0/Disk1/InstData/Linux/NoVM`
 - (Solaris) `/lifecycle_server/9.0/Disk1/InstData/Solaris/NoVM`

Note: If you are installing on Solaris or Linux and you are not installing directly from a release DVD, set executable permissions on the installation file.

2. When prompted, select the language for the installation to use and click **OK**.
3. On the Introduction screen, click **Next**.
4. If you have a previous version of LiveCycle ES (8.x) installed on the computer where you are running the installer, the Preparation for Upgrade screen appears. You can choose to prepare for an upgrade to LiveCycle ES2 or perform a new installation of LiveCycle ES2. Select **Next** to continue installing LiveCycle ES2.
 - **Prepare to upgrade existing installation to LiveCycle ES2 v9.0:** Installation program prepares the data from your existing LiveCycle ES (8.x) installation for an upgrade to LiveCycle ES2. If you select this option, update your module license in LiveCycle Administration Console after the installation.
5. **Install LiveCycle ES2 v9.0:** Installation program installs LiveCycle ES2. On the Choose Installation Folder screen, accept the default directory as listed or click **Choose** and navigate to the directory where you intend to install LiveCycle ES2, and then click **Next**.

If you type the name of a directory that does not exist, it is created for you.

Caution: If you are installing on Linux or UNIX, the directory you specify should not contain any spaces; otherwise, the installation program does not install the module.

6. On the Choose Installation Type screen, select **Custom > Manual**, and click **Next**.

Note: If you are installing LiveCycle ES2 using JBoss Turnkey, see [Installing and Deploying LiveCycle ES2 Using JBoss Turnkey](#).

7. **(Windows only and when Manual installation is selected)** On the Manual Installation Options screen, select the target deployment option and click **Next**:
 - **Windows (Local):** Select this option if you are installing and deploying LiveCycle ES2 on the local server.
 - **Staged (Installed on Windows targeting remote systems):** Select this option if you plan to use Windows as a staging platform for your deployment and then select the target operating system on the remote server. You can select a UNIX operating system as the target for deployment even if you are installing on Windows. (See [“Installing on a Windows staging platform for Linux or UNIX” on page 14.](#))

Note: adobe-livecycle-weblogic.ear and adobe-contentservices.ear files fail to deploy on a remote machine if secured datasources are used with WebLogic. For more information, see [TechNote](#)

8. Read the LiveCycle ES2 Server License Agreement, select **I Accept** to accept the terms of the license agreement and then click **Next**. If you do not accept the license agreement, you cannot continue.
9. On the Pre-Installation Summary screen, review the details and click **Install**. The installation program displays the progress of the installation.
10. Review the Release Notes information and click **Next**.
11. Review the details of the Installation Complete screen.
12. The **Start LiveCycle Configuration Manager** checkbox is selected by default. Click **Done** to run the LiveCycle Configuration Manager.

Note: To run LiveCycle Configuration Manager later, deselect the **Start LiveCycle Configuration Manager** option before you click **Done**. You can start LiveCycle Configuration Manager later using

the appropriate script in the `[LiveCycleES2 root]/configurationManager/bin` directory. See [“Configuring LiveCycle ES2 for Deployment” on page 17](#).

2.3 Viewing the error log

If errors occur during the installation, the installation program creates the `Adobe_LiveCycle_ES2_InstallLog.log` file, which contains the error messages. This log file is created in the `[LiveCycleES2_root]/log` directory.

2.4 Next steps

New for 9.5

You must now configure LiveCycle ES2 for deployment. (See [“Configuring LiveCycle ES2 for Deployment” on page 17](#).) You may choose to configure LiveCycle ES2 later if you plan to install LiveCycle ES2.5 Solution Accelerators. In that case, you are required to first apply LiveCycle ES2 service pack 2 or later and install LiveCycle ES2.5 Solution Accelerators.

For more information about installing Solution Accelerators, see [Installing and Deploying LiveCycle ES2.5 Solution Accelerators](#).

3

Configuring LiveCycle ES2 for Deployment

This chapter describes how to perform the following tasks:

- Configure LiveCycle ES2 modules in EAR files for deploying to the application server
- Initialize the LiveCycle ES2 database
- Deploy LiveCycle ES2 components
- Configure LiveCycle ES2 components
- (Optional) Configure the LiveCycle ES2 Connectors for ECM, Reader Extensions ES2, PDF Generator ES2, and PDF Generator 3D ES2 modules

Note: (Optional) LiveCycle Configuration Manager does not support configuration, deployment and database initialization for LiveCycle Business Activity Monitoring ES2 on manual installation option. See [“Configuring and deploying LiveCycle Business Activity Monitoring ES2” on page 63](#) if you want to install BAM.

- (Optional) Import the LiveCycle ES2 samples into LiveCycle ES2

3.1 About LiveCycle Configuration Manager

LiveCycle Configuration Manager is a wizard-like tool used to configure, deploy, and validate LiveCycle ES2 components for deployment to the application server. LiveCycle Configuration Manager is installed with the module files when you run the LiveCycle ES2 installation program. When you run LiveCycle Configuration Manager, you specify the LiveCycle ES2 modules you are configuring, and the tasks that you want LiveCycle Configuration Manager to perform.

3.2.1 CLI versus GUI versions of LiveCycle Configuration Manager

This section describes the GUI version of LiveCycle Configuration Manager. For instructions about using the command line interface (CLI) version of LiveCycle Configuration Manager, see [“Appendix - LCM Command Line Interface” on page 92](#).

You can configure LiveCycle using LCM in GUI, CLI, and manual modes. The following table summarizes the configuration steps and their corresponding valid modes (GUI, CLI, or manual).

| LiveCycle ES2 configuration task | LCM GUI | LCM CLI | Manual (Non-LCM) |
|---|---------|---------|------------------|
| Configure LiveCycle ES2 | Yes | Yes | No |
| Configure application server | | | Yes |
| Validate application server configuration | | | Yes |
| Deploy LiveCycle ES2 EARs | | | Yes |
| Initialize LiveCycle ES2 database | Yes | Yes | No |
| Initialize Business Activity Monitoring ES2 | Yes | Yes | Yes |

| LiveCycle ES2 configuration task | LCM GUI | LCM CLI | Manual (Non-LCM) |
|--|---------|---------|------------------|
| Validate LiveCycle ES2 server connection | Yes | Yes | No |
| Deploy LiveCycle ES2 components | Yes | Yes | No |
| Validate LiveCycle ES2 component deployment | Yes | Yes | Yes |
| Configure LiveCycle components (Includes the following tasks) <ul style="list-style-type: none"> • Configure ECM connectors • Configure PDF Generator ES2 • Configure Reader Extensions ES2 | Yes | Yes | Yes |
| Import Samples | Yes | Yes | Yes |

3.3 Configuring and deploying LiveCycle ES2

When you run LiveCycle Configuration Manager, you can select the tasks that you want the program to perform automatically.

Tip: LiveCycle Configuration Manager verifies the values that are specified on each screen when you click **Next**. If it cannot validate a value, a warning message appears, the property on the screen becomes red, and you cannot proceed until you enter a valid value.

Tip: If you are running LiveCycle Configuration Manager again after an earlier run, parameters that are already configured are shown as non-editable. Click **Edit configurations** to make these fields editable and make changes.

After LiveCycle Configuration Manager configures the LiveCycle ES2 EAR files, it places the following files in the `[LiveCycleES2 root]/configurationManager/export` directory:

- `adobe-livecycle-native-jboss-[OS].ear`
- `adobe-livecycle-jboss.ear`
- `adobe-workspace-client.ear` (if you installed LiveCycle Process Management ES2)
- and `adobe-contentservices.ear` (if you installed LiveCycle Content Services ES2)

When you manually deploy the LiveCycle ES2 EAR files, you can access the files in this directory and deploy them to the application server.

After LiveCycle Configuration Manager configures the LiveCycle ES2 EAR files, you may rename the EAR files to a custom file name (for example, to specify in the file name a version identifier, or any other information required by standard practices in the local JDK environment).

Tip: You can override the font while selecting or browsing to a directory or file name on a LiveCycle Configuration Manager screen. Add the following JVM argument to `ConfigurationManager.bat` (Windows) or `ConfigurationManager.sh` (Linux, UNIX):

```
-Dlcm.font.override=<FONT_FAMILY _NAME>
```

For example, `-Dlcm.font.override=SansSerif`.

► **Configure using LiveCycle Configuration Manager:**

Tip: You can press **F1** in LiveCycle Configuration Manager to view Help information for the screen you are viewing. This Help contains details that may not be included in this document and are specific to the context of each screen in LiveCycle Configuration Manager.

Tip: If you are running LiveCycle Configuration Manager again after an earlier run, parameters that are already configured are shown as non-editable. Click **Edit configurations** to make these fields editable and make changes.

1. If you did not start LiveCycle Configuration Manager automatically from the installation program, navigate to the `[LiveCycleES2 root]/configurationManager/bin` directory and enter the appropriate command:
 - (Windows) `ConfigurationManager.bat`
 - (Non-Windows) `ConfigurationManager.sh`
2. If prompted, select a language and click **OK**.
3. On the Welcome screen, click **Next**.
4. On the Upgrade task selection screen, ensure that no options are selected, then click **Next** to continue.

Caution: If you want to upgrade an existing LiveCycle ES installation, do not continue this procedure. For upgrade information and procedures, see the [Preparing to Upgrade to LiveCycle ES2 from 8.x](#) guide applicable to your current version of LiveCycle ES2 and the [Upgrading to LiveCycle ES2](#) guide applicable to your application server.

5. On the Module Selection screen, select the LiveCycle ES2 modules and then click **Next**.

Caution: Do not select Adobe Business Activity Monitoring ES2 if you are installing LiveCycle ES2 on a 32-bit computer. Business Activity Monitoring ES2 is supported only on 64-bit computers, operating systems, and application servers.

6. On the Task Selection screen, select all the tasks you want to perform and click **Next**.
The **Configure Application Server**, **Validate Application Server Configuration**, and **Deploy LiveCycle ES2 EARs** tasks are not available for JBoss. You must configure your JBoss Application Server and deploy the LiveCycle ES2 EARs manually (see the [Preparing to Install LiveCycle ES2 \(Single Server\)](#) guide).
7. On the Configure LiveCycle ES2 (1 of 5) screen, click **Configure**. Click **Next** when done.
8. On the Configure LiveCycle ES2 (2 of 5) screen, click **Next** to accept the default directory locations, or customize the directories that LiveCycle ES2 will use to access fonts, and then click **Next**.
 - (Optional) To change the default location of the **Adobe server fonts directory**, type the path or browse to the directory.
 - (Optional) Specify a directory for the **Customer fonts directory**. The directory contains any additional fonts that you have licensed and installed.
 - (Optional) To change the default location of the **System fonts directory**, type the path or browse to the directory.
 - (Optional) To enable FIPS, ensure that **Enable FIPS** is selected. Select this option only if you require the Federal Information Processing Standards (FIPS) to be enforced.

9. Click **Browse** on the Configure LiveCycle ES2 (3 of 5) screen to specify the **Location of the temporary directory**.

(UNIX only) If a non-root user is running the application server, the user must have full permissions on the specified temporary directory.

Note: If you do not create the temporary directory, the default system-configured location is used.

10. On the Configure LiveCycle ES2 (4 of 5) screen, click **Browse** to specify the path for the Global Document Storage (GDS) directory.

Note: The default GDS directory is `<server instance>\svcnative\DocumentStorage`

11. On the Configure Persistent Document Storage (5 of 5) screen, select the option for persistent document storage in addition to the GDS directory. Select one of the following:

- **Use GDS:** Use the file system-based GDS for all persistent document storage. This option provides the best performance, and a single location for GDS.
- **Use database:** Use the LiveCycle ES2 database for storing the persistent documents and long-lived artifacts. However, the file-system based GDS is also required for storing short-lived artifacts.

Note: When choosing the database option, no sensitive data is persisted to the file-system based GDS, therefore eliminating the need for back-up if LiveCycle is moved to another server. Using the database simplifies backup and restore procedures.

12. Click **Configure** to configure the LiveCycle ES2 EARs with this directory information and, after the configuration is complete, click **Next**.

13. **(Content Services ES2 only)** On the LiveCycle Content Services ES2 Configuration screen, set the following parameters that Content Services ES2 will use, and click **Next**.

- **Deploy Type:** Select **Single Server**.
- **Content storage root directory:** Specify the root directory that is used by Content Services ES2.

Note: Run LiveCycle Configuration Manager with the UTF-8 locale if you want to specify a content storage root directory having international characters.

- (Optional) **Enable CIFS:** Select this option to allow Windows-based clients to access files from the server that runs LiveCycle ES2 using the Common Internet File System (CIFS) protocol. Click **Next** to specify the following details:

- **CIFS Server Name:** Specify the name through which the Content Services ES2 Repository will be accessible. By default, LiveCycle Configuration Manager populates the server name of the LiveCycle ES2 server with 'a' attached to it. For example, if the LiveCycle ES2 server name is `lcs_server`, the CIFS Server name will be populated as `lcs_server.a`. You must ensure that the CIFS server name that you specify is unique within the network.

- **Choose the CIFS Server Implementation:** Select the type of CIFS implementation supported on the server as one of the following:

JAVA (Socket Based): Specify the alternate IP address assigned to the CIFS Server, and how the server name will be resolved in the local domain. For example, if the primary IP is 10.40.68.142, assign 10.40.68.143 as the alternate IP. Ensure that this IP is not allocated to any other machine on the network.

Windows Native (DLL Based): Click **Browse** to select the path (usually, `C:\windows\system32`) to where LiveCycle Configuration Manager will copy the DLL files. The path where DLL files will be copied must be specified in the system PATH environment

variable. For example, for Windows Server 2003 and 2008, the system PATH must include `C:\Windows\system32`.

- **Use WINS Server or Broadcast to resolve Local Domain:** Select the method used to resolve the local domain:

Broadcast: Specify the broadcast address (subnet mask) of the network segment in the local domain. For example, 10.40.91.255. In Broadcast mode, the CIFS server and clients must be in the same subnet.

WINS Server: Specify the IP addresses of the primary and secondary WINS servers. For example, 10.40.4.248. If WINS server is selected, the clients can reside in any subnet in the local domain.

Windows only

CIFS is not supported on Windows when the application server is running in pure IPv6 mode.

You may have to update your DNS entries with CIFS server name and the virtual IP address assigned so that Windows clients can access the CIFS server by name.

UNIX only

For UNIX machines, only Java implementation is supported. For UNIX machines, you must create a virtual interface and assign a virtual IP address that can be used as the alternate IP address for CIFS implementation. This ensures that the UNIX machines can run Samba and CIFS on the same machine, but on two different IP addresses, because both these services use the same ports.

To enable CIFS on an IPv6 implementation of LiveCycle ES2, you must edit the `contentservices.war` file after the configuration of the EAR files is completed. Update the EAR file and then proceed to the next step in LiveCycle Configuration Manager. See [“Enabling CIFS in IPv6 mode” on page 56](#).

In addition to these steps in LiveCycle Configuration Manager, you must complete other manual configuration steps for Windows Server 2003 and Windows Server 2008. See “Server configuration for enabling CIFS” in the [Preparing to Install LiveCycle ES2 \(Single Server\)](#) guide

14. **(Content Services ES2 only)** On the LiveCycle Content Services ES2 Module Configuration screen, do the following tasks, and then click **Configure** to configure the LiveCycle ES2 EAR files with the Content Services ES2 settings. After the configuration is complete, click **Next**. See Alfresco documentation for more information.
 - Select the Alfresco Module Packages (AMP) that you want to include in Content Services ES2. By default, all AMPs that are dependent on the selected LiveCycle ES2 modules are included.
 - (Optional) To include your own AMPs, select the **Do you want to package your own AMPs** in Content Services box, and click **Browse** to select the directory where the custom AMPs are available. All AMPs in the selected directory are packaged.

Note: If you want to enable SharePoint clients to migrate to Alfresco CMS, you must add the SharePoint AMP:

`[LiveCycleES2 root]\LiveCycle_ES_SDK\misc\ContentServices\adobe-vti-module.amp`

After you add this file, follow the steps detailed in [“Configuring SharePoint client access” on page 55](#).

15. **(Windows only)** On the Configure Acrobat for LiveCycle PDF Generator screen, click **Configure** to run the script that will configure Adobe Acrobat and required environment settings. Click **Next** when complete.

This screen appears only when LiveCycle Configuration Manager is running locally on a server computer. You must have Adobe Acrobat already installed or this step will fail.

Note: To use OpenOffice.org on Linux or Solaris, set the `Openoffice_PATH` environment variable. Refer to [“Setting environment variables” on page 35](#).

16. On the Configure LiveCycle ES2 Summary screen, click **Next**. Configured archives are placed in the `[LiveCycleES2 root]/configurationManager/export` directory. Ensure that the application server is configured and running.

Note: The JBoss 4.2.1 deployment creates distinct directories for the data sources for each database type under the `/jboss/server/` folder. Each database is prefixed with “lc_”. For example, data source files for MySQL are placed in `lc_mysql`. In the following sections, `lc_<db-name>` is used to designate these distinct directories.

17. Without exiting LiveCycle Configuration Manager, manually deploy the LiveCycle ES2 EAR files to JBoss by copying the following files from the `[LiveCycleES2 root]/configurationManager/export` directory to the following directory: (Manually-configured JBoss) `[appserver root]/server/all/deploy` or (Adobe-preconfigured JBoss) `[appserver root]/server/lc_<db-name>/deploy`:

- `adobe-livecycle-native-jboss-[OS].ear`
- `adobe-livecycle-jboss.ear`
- `adobe-workspace-client.ear` (Process Management ES2 only)
- `adobe-contentservices.ear` (Content Services ES2 only)

You can optionally deploy the LiveCycle ES2 Forms, Output, and Assembler IVS EARs as well.

Caution: Deploying the IVS EAR files to a production environment is not recommended.

18. Start JBoss to ensure the LiveCycle ES2 applications start successfully.
19. Return to LiveCycle Configuration Manager.

Caution: Deploying the IVS EAR files to a production environment is not recommended.

20. On the LiveCycle ES2 Database Initialization screen, verify that 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 has completed successfully, click **Next**.
21. On the LiveCycle ES2 Server Information screen, in the **Password** box, type `password`. (This password is the default administrator password; it is recommended that you change the password later.)
22. Click **Verify Server Connection**, and when complete, click **Next**.

Note: The server information that appears on this screen represents default values for the deployment. Verifying the server connection helps 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 Central Migration Bridge Service Deployment Configuration screen, if applicable, select the **Include Central Migration Bridge Service in deployment** option and then click **Next**.
24. On the LiveCycle Component Deployment screen, click **Deploy**. The components that are deployed at this time are Java archive files that plug into the LiveCycle ES2 service container for purposes of deploying, orchestrating, and executing services. Click **View Progress Log** to view the deployment progress and, when the deployment has completed successfully, click **Next**.

25. On the LiveCycle Component Deployment Validation screen, click **Validate**. LiveCycle Configuration Manager validates that the LiveCycle components (Java archive files) are deployed to and running on the LiveCycle ES2 server. Click **View Progress Log** to view the validation progress and, when the validation has completed successfully, click **Next**.
26. On the Configure LiveCycle Components screen, select the tasks to run with LiveCycle Configuration Manager, and click **Next**. Press **F1** for more information.
27. **(Optional - EMC Documentum only)** On the Specify Client for EMC Documentum screen, select **Configure Connector for EMC Documentum Content Server**, and specify the following settings. Enter the details, click **Verify**, and when complete, click **Next** to continue.
 - **Choose EMC Documentum Client Version:** Select the client version to use with the EMC Documentum Content Server.
 - **EMC Documentum Client Installation Directory Path:** Click **Browse** to select the directory path.
28. **(Optional - EMC Documentum only)** On the Specify EMC Documentum Content Server Settings screen, enter the EMC Documentum Server details, and then click **Next**. Press F1 for information about the details you need to enter.
29. **(Optional - EMC Documentum only)** On the Configure Adobe LiveCycle ES2 Connector for EMC Documentum screen, click **Configure Documentum Connector**. When completed, click **Next**.
30. **(Optional - IBM Content Manager only)** On the Specify Client for IBM Content Manager screen, select **Configure Client for IBM Content Manager**, and enter a value for the **IBM Content Manager Client Installation Directory Path**. Click **Verify** and when complete, click **Next** to continue.
31. **(Optional - IBM Content Manager only)** On the Specify IBM Content Manager Server Settings screen, enter the details of the IBM Content Manager Server, and click **Next**. Press F1 for more information.
32. **(Optional - IBM Content Manager only)** On the Configure Adobe LiveCycle ES2 Connector for IBM Content Manager screen, click **Configure IBM Content Manager Connector**. When complete, click **Next**.
33. **(Optional - IBM FileNet only)** On the Specify Client for IBM FileNet screen, select **Configure Client for IBM FileNet Content Manager**, and specify the following settings. Enter the details, click **Verify**, and when complete, click **Next** to continue.
 - **Choose IBM FileNet Client Version:** Select the client version that you want to use with the EMC Documentum Content Server.
 - **IBM FileNet Client Installation Directory Path:** Click **Browse** to select the directory path.
34. **(Optional - IBM FileNet only)** On the Specify IBM FileNet Content Server Settings screen, enter the required details, and click **Next**. Press F1 for more information.
35. **(Optional - IBM FileNet only)** On the Specify Client for IBM FileNet Process Engine screen, enter the required details, and click **Verify**. When complete, click **Next**. Press F1 for more information.
36. **(Optional - IBM FileNet only)** On the Specify IBM FileNet Process Engine Server Settings screen, enter the required details and click **Next**. Press F1 for more information.
37. **(Optional - IBM FileNet only)** On the Configure Adobe LiveCycle ES2 Connector for IBM FileNet screen, click **Configure FileNet Connector**. When complete, click **Next**. Press F1 for more information.

38. **(Optional- LiveCycle ES2 Connector for Microsoft SharePoint only)** On the Adobe LiveCycle ES2 Connector for Microsoft SharePoint screen, enter the following details and click **Configure**. When complete, click **Next**.

Note: You can skip this step if you want to configure the SharePoint Connector later using LiveCycle Administration Console.

- **User Name and Password:** Enter the user account details that will be used to connect to the SharePoint server.
- **Host Name:** Enter the host name of the SharePoint server in the format <hostname> : <port>. The port number must be of the web application on the SharePoint server.
- **Domain Name:** Enter the domain in which the SharePoint server is present.

39. **(PDF Generator ES2 only)** On the **Administrator user credentials for LiveCycle server machine** screen, enter the user name and password of a user with administrative privileges on the server computer, and then click **Add**.

Note: You must add at least one administrative user for Windows 2008 Server. On Windows 2008 Server, User Account Control (UAC) must be disabled for the users you add. To disable UAC, click **Control Panel > User Accounts > Turn User Account Control on or off** and deselect **Use User Account Control (UAC) to help protect your computer**, then click **OK**. Restart the computer to apply these changes.

For Windows Server 2003, Linux, and Solaris, adding a user is not mandatory. Users added on Linux and Solaris platforms must have `sudo` privileges.

For more information, press **F1** on this screen to access the LiveCycle Configuration Manager Help.

40. **(Only for PDF Generator ES2 when LiveCycle Configuration Manager is running locally on a server machine)** On the **LiveCycle PDFGenerator System Readiness Test** screen, click **Start** to validate if the system has been appropriately configured for PDF Generator ES2.

41. **(PDF Generator ES2 only)** Review the System Readiness Tool Report and click **Next**.

42. **(Reader Extensions ES2 only)** On the LiveCycle Reader Extensions ES2 Credential Configuration screen, specify the details that are associated with the Reader Extensions ES2 credential that activates the module services:

- **Credential file:** The path and file name of the Reader Extensions ES2 credential (.pfx or .p12 file type).
- **Credential Password:** The password that is associated with the credential. This password was provided with the credential file.
- **User defined name for this credential:** The name (or alias) that you specified for this credential when it is configured.

This name appears in the Reader Extensions ES2 web interface, and the alias that is used to reference the credential through SDK calls. You can create any unique name for the Reader Extensions ES2 credential.

Note: You can skip this step at this time by selecting **Configure later using LiveCycle Administration Console**. You can configure the Reader Extensions ES2 credential by using LiveCycle Administration Console after you complete the deployment. (After logging in to LiveCycle Administration Console, click **Home > Settings > Trust Store Management > Local Credentials**.)

Click **Configure** and then click **Next**.

43. (Optional) On the LiveCycle ES2 Samples Import screen, click **Import**. When the import has completed successfully, click **Next** or click **Skip LiveCycle Samples Import** and then click **Next** to import the samples at a later time.

Caution: Do not import the LiveCycle ES2 Samples in a production employment. These samples create users with default passwords, which may be a security concern for your production environment.

44. On the Summary page, review the tasks performed, and click **Next**.
45. The Next steps screen displays the URL and login information. Click **Finish** to exit LiveCycle Configuration Manager.

Note: After you configure LiveCycle ES2, complete the post-configuration activities that apply to your solution implementation.

3.4 Configuring WebSphere Application Server if global security is enabled

If your installation uses global security, you must run WebSphere Application Server as a user with the appropriate roles. You can employ one of the following options to configure WebSphere Application Server to run if WebSphere global security is enabled:

- Create a new user with the necessary roles, and run WebSphere Application Server as that user (see [“To create a new WebSphere Application Server user \(WebSphere 6.1\):” on page 25](#) or [“To create a new WebSphere Application Server user \(WebSphere 7.0\):” on page 25](#)). If a user already exists to run WebSphere Application Server, assign the necessary roles to that user. (see [“To configure an existing WebSphere Application Server user:” on page 26](#)).

Caution: Ensure that you start WebSphere Application Server as this user. Some WebSphere processes may fail if you start WebSphere Application Server as a different user while global security is enabled.

In a secure environment, it is recommended that you employ this option.

- Configure the EVERYONE group with the necessary roles. (See [“To configure the EVERYONE group \(WebSphere 6.1 only\)” on page 26](#)).

► To create a new WebSphere Application Server user (WebSphere 6.1):

1. In the WebSphere Administrative Console navigation tree, click **Environment** > **Naming** > **CORBA Naming Service Users**, and then in the right pane, click **Add**.
2. In **User**, type the name of the user that will run WebSphere Application Server, and in **Roles**, select the required roles.
3. Click **OK** or **Apply**.
4. Click **Save** directly to master configuration.

► To create a new WebSphere Application Server user (WebSphere 7.0):

1. In the WebSphere Administrative Console navigation tree, click **Environment** > **Naming** > **CORBA Naming Service Users**, and then in the right pane, click **Add**.

2. In **Roles**, select all the roles.
 3. Under Search and Select Users, select the User Realm.
 4. In the search box, type the search string and click **Search**.
- Note:** To retrieve all users, type an asterisk (*).
5. From the Available text box, select the required users and click the right arrow to add them to the Mapped to role box.
 6. Click **OK** or **Apply**.
 7. Click **Save** directly to master configuration.

➤ **To configure an existing WebSphere Application Server user:**

1. In the WebSphere Administrative Console navigation tree, click **Environment > Naming > CORBA Naming Service Users**, and then in the right pane, select the user.
2. In **Roles**, select the required roles.
3. Click **OK** or **Apply**.
4. Click **Save** directly to master configuration.

➤ **To configure the EVERYONE group (WebSphere 6.1 only)**

1. In the WebSphere Administrative Console navigation tree, click **Environment > Naming > CORBA Naming Service Groups**.
2. Enable **Select from special subjects**, and then from the Special subjects list, select the **EVERYONE** group.
3. In **Roles**, select the required roles.
4. Click **OK** or **Apply**.
5. Click **Save** directly to master configuration.

➤ **To configure the EVERYONE group (WebSphere 7.0 only)**

1. In the WebSphere Administrative Console navigation tree, click **Environment > Naming > CORBA Naming Service Groups**.
2. In **Roles**, select the required roles.
3. Enable **Select from special subjects**, and then from the Special subjects list, select the **EVERYONE** group.

Note: If the EVERYONE group is already configured, the group will not be shown in the Special subjects list. You only need to assign the required roles to this group if not already done so.

4. Click **OK** or **Apply**.
5. Click **Save** directly to master configuration.

3.5 Next steps

Now that you have configured and deployed LiveCycle ES2, you can do the following tasks:

- Verify the deployment. (See [“Verifying the deployment” on page 31.](#))
- Access LiveCycle Administration Console. (See [“Accessing LiveCycle Administration Console” on page 31.](#))
- Configure PDF Generator ES2 or PDF Generator 3D ES2. (See [“Configuring LiveCycle PDF Generator ES2 or 3D ES2” on page 34.](#))
- Perform the final setup for Rights Management ES2. (See [“Setting watched folder performance parameters” on page 43.](#))
- Configure LiveCycle ES2 modules to access LDAP. (See [“Configuring LiveCycle ES2 to access LDAP” on page 44.](#))
- Perform watched folder performance-tuning for PDF Generator ES2. (See [“Setting watched folder performance parameters” on page 43.](#))
- Enable FIPS mode. (See [“Enabling FIPS mode” on page 45.](#))
- Enable HTML digital signatures. (See [“Configuring HTML digital signature” on page 46.](#))
- Configuring Connector for EMC Documentum, Connector for IBM Content Manager, or Connector for IBM FileNet. (See [“Configuring the Connector for EMC Documentum service” on page 46](#), [“Configuring the Connector for IBM FileNet service” on page 50](#), or [“Configuring the Connector for IBM Content Manager” on page 57.](#))
- Set environment variables for PDF Generator ES2. (See [“Setting environment variables” on page 35.](#))
- Install and deploy LiveCycle Business Activity Monitoring ES2. (See [“Configuring and deploying LiveCycle Business Activity Monitoring ES2” on page 63.](#))
- Uninstall LiveCycle ES2. (See [“Uninstalling LiveCycle ES2” on page 61.](#))

4

Deploying LiveCycle ES2 to JBoss

This chapter describes how to deploy LiveCycle ES2 to JBoss Application Server:

- [“About deploying LiveCycle ES2 modules” on page 28](#)
- [“Summary of deployable components” on page 28](#)
- [“Deploying to JBoss Application Server” on page 28](#)

4.1 About deploying LiveCycle ES2 modules

Before you deploy LiveCycle ES2, ensure that you completed these tasks:

- Installed the required software and files, and know the location of the directories you will be working with. If you did not complete this task, see [Preparing to Install LiveCycle ES2 \(Single Server\)](#).
- Run LiveCycle Configuration Manager to configure and assemble LiveCycle ES2 modules according to your system and application server requirements. To add a module to your deployment, you can run LiveCycle Configuration Manager to make the changes and then redeploy the updated EAR file.

If you are deploying LiveCycle ES2 for the first time, initialize the database by using LiveCycle Configuration Manager after you deploy the product.

If you are using an external web server, see your web server documentation for information about the configuration that is required to allow access to the application server.

4.2 Summary of deployable components

During the deployment process, you need to deploy the following components for LiveCycle ES2:

- adobe-livecycle-native-jboss-[OS].ear
- adobe-livecycle-jboss.ear
- adobe-workspace-client.ear (LiveCycle Process Management ES2 only)
- adobe-contentservices.ear (LiveCycle Content Services ES2 only)

After LiveCycle ES2 is configured with LiveCycle Configuration Manager (required), these files are located in the `[LiveCycleES2 root]/configurationManager/export/` directory.

4.3 Deploying to JBoss Application Server

Deploy LiveCycle ES2 modules to JBoss Application Server by copying the deployable components to the deploy directory. JBoss Application Server can be running or stopped when you copy the files to the directory. After you copy the files, start or restart the server to ensure that the services start correctly.

➤ **To deploy LiveCycle ES2 modules to JBoss Application Server:**

- Copy the following files from the *[LiveCycleES2 root]/configurationManager/export* directory to the following directory: (Manually-configured JBoss) *[appserver root]/server/all/deploy* or (Adobe-preconfigured JBoss) *[appserver root]/server/lc_<db-name>/deploy*:
 - adobe-livecycle-native-jboss-*[OS]*.ear
 - adobe-livecycle-jboss.ear
 - adobe-contentservices.ear
 - adobe-workspace-client.ear (LiveCycle Process Management ES2 only)

This chapter describes how to verify the deployment by accessing the LiveCycle Administration Console and checking the application server log files. It also describes how to get started using LiveCycle ES2 modules and services after they are installed, configured, and deployed to your application server:

- [“Configuring a Windows service for JBoss Application Server” on page 30](#)
- [“Restart the application server” on page 31](#)
- [“Set the date, time, and time zone” on page 31](#)
- [“Verifying the deployment” on page 31](#)
- [“Installing LiveCycle ES2.5 Solution Accelerators” on page 32 \(optional\)](#)
- [“Accessing module web applications” on page 32](#)
- [“Accessing User Management” on page 34](#)
- [“Configuring LiveCycle PDF Generator ES2 or 3D ES2” on page 34](#)
- [“Configuring LiveCycle ES2 to access LDAP” on page 44](#)
- [“Enabling FIPS mode” on page 45](#)
- [“Configuring HTML digital signature” on page 46](#)
- [“Configuring the Document Management service” on page 46](#)
- [“Configuring the Connector for EMC Documentum service” on page 46](#)
- [“Configuring the Connector for IBM FileNet service” on page 50](#)
- [“Configuring the Connector for IBM Content Manager” on page 57](#)
- [“Perform a system image backup” on page 61](#)
- [“Isloating JBoss Clusters” on page 81](#)
- [“Uninstalling LiveCycle ES2” on page 61](#)

After you configure the settings in this chapter, for additional information about configuring your LiveCycle ES2 environment for development and production, see [LiveCycle ES2 Administration Help](#).

5.1 Configuring a Windows service for JBoss Application Server

If your JBoss Application Server runs on a Windows operating system, you may optionally install a Windows service to manage them. The Windows service provides a GUI that simplifies starting and stopping of the application servers of your cluster.

You must install JBoss Application Server before you create the Windows service to manage the application server. See [“Appendix - Configuring JBoss as a Windows Service” on page 103](#) for information about using the JBoss Web Native Connector to configure JBoss as a Windows service.

5.2 Restart the application server

When you first deploy LiveCycle ES2, the server is in a deployment mode in which most modules are in memory. As a result, the memory consumption is high and the server is not in a typical production state. You must restart the application server to get the server back into a clean state.

5.3 Set the date, time, and time zone

Setting the date, time, and time zone on all servers connected to your LiveCycle ES2 environment will ensure that time-dependent modules, such as LiveCycle Digital Signatures ES2 and LiveCycle Reader Extensions ES2, function correctly. For example, if a signature appears to have been created in the future, it will not validate.

Servers that require synchronization are database servers, LDAP servers, HTTP servers and J2EE servers.

5.4 Verifying the deployment

You can verify the deployment by logging in to LiveCycle Administration Console. If you log in successfully, then LiveCycle ES2 is running on the application server and the default user is created in the database.

You can review the application server log files to ensure that components were deployed correctly or to determine the cause of any deployment issues you may encounter.

5.4.1 Accessing LiveCycle Administration Console

LiveCycle Administration Console is the web-based portal for accessing a variety of configuration pages where you can set run-time properties that control the way LiveCycle ES2 operates. When you log in to LiveCycle Administration Console, you can access User Management, Watched Folder, and Email client configuration, and administrative configuration options for other services. LiveCycle Administration Console also provides access to Applications and Services, which administrators use for managing archives and deploying services to a production environment.

The default user name and password for logging in is *administrator* and *password*. After you log in the first time, access User Management and change the password. If you have upgraded, the user name and password remain the same as when they were set by the administrator when LiveCycle ES (8.x) was configured.

Before you access LiveCycle Administration Console, LiveCycle ES2 must be deployed and running on your application server.

For information about using LiveCycle Administration Console, see [LiveCycle ES2 Administration Help](#).

► To access LiveCycle Administration Console:

1. Type the following URL in a web browser:

```
http://[host name]:[port]/adminui
```

The default port number for JBoss is 8080.

2. After you log in, click **Services** to access the service administration pages or click **Settings** to access the pages on which you can administer settings for different modules.

5.4.2 Change default password

LiveCycle ES2 creates one or more default users during the installation. The password for these users is in the product documentation and is publicly available. You must change this default password, depending on your security requirements.

The LiveCycle ES2 administrator user password is set to “password” by default. You must change it in LiveCycle Administration Console > Settings > User Management.

5.4.3 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. You can open the log files by using any text editor.

5.5 Installing LiveCycle ES2.5 Solution Accelerators

New for 9.5

If you are planning to install LiveCycle ES2.5 Solution Accelerators, you are required to first apply LiveCycle ES2 service pack 2 or later and install LiveCycle ES2.5 Solution Accelerators. However, note that you need to rerun LiveCycle Configuration Manager after installing LiveCycle ES2.5 Solution Accelerators.

For more information about installing Solution Accelerators, see [Installing and Deploying LiveCycle ES2.5 Solution Accelerators](#).

5.6 Accessing module web applications

After LiveCycle ES2 is deployed, you can access the web applications that are associated with the following modules:

- LiveCycle Reader Extensions ES2
- LiveCycle Workspace ES2
- LiveCycle Content Services ES2
- LiveCycle Rights Management ES2
- LiveCycle Business Activity Monitoring ES2

After accessing 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 [LiveCycle ES2 Administration Help](#).)

► To access the Reader Extensions ES2 web application:

Note: You must apply a Reader Extensions ES2 credential and apply the user roles for a new user. (See “Configuring credentials for use with Reader Extensions ES2” in [LiveCycle ES2 Administration Help](#).)

1. Open a web browser and enter this URL if you are using a local deployment:

`http://localhost:[port]/ReaderExtensions`

For JBoss, the port is 8080

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

User name: administrator

Password: password

Note: You must have administrator or superuser privileges to log in using the default user name and password. To allow other users to access the Reader Extensions ES2 web application, you must create the users in User Management and grant them the Reader Extensions Web Application role.

► **To access Workspace ES2:**

1. Open a web browser and enter this URL if you are using a local deployment:

`http://localhost:[port]/workspace`

For JBoss, the port is 8080

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

User name: administrator

Password: password

► **To access the Content Services ES2 web application:**

Note: You must apply the LiveCycle ContentSpace Administrator or LiveCycle ContentSpace User 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 if you are using a local deployment:

`http://localhost:[port]/contentspace`

For JBoss, the port is 8080

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

User name: administrator

Password: password

5.7 Accessing Rights Management ES2

You must create a user with the LiveCycle Rights Management End User role in User Management and log in to the Rights Management ES2 administrator or end-user applications by using the login information that is associated with that user.

Note: The default administrator user cannot access the Rights Management ES2 end-user web application but you can add the appropriate role to its profile. You can create a new user or modify an existing user through LiveCycle Administration Console.

► **To access the Rights Management ES2 end-user web application:**

1. Open a web browser and enter this URL:

`http://[server]:[port]/edc/Login.do`

► **To access the Rights Management ES2 administration web application:**

1. Open a web browser and enter this URL:

`http:// [server] : [port] /adminui`

2. Click **Services > LiveCycle Rights Management ES2**. For information about setting up users and roles for Rights Management ES2, see [LiveCycle ES2 Administration Help](#).

► **To assign the LiveCycle Rights Management End User role:**

1. Log in to LiveCycle Administration Console. (See [“Accessing LiveCycle Administration Console” on page 31](#).)
2. Click **Settings > User Management > Users and Groups**.
3. In the **Find** box, type `all` and, in the **In** list, select **Groups**.
4. Click **Find** and, for the required domains, click **All Principals** in the list that appears.
5. Click the **Role Assignments** tab and click **Find Roles**.
6. In the list of roles, select the check box next to **LiveCycle Rights Management End User**.
7. Click **OK** and then click **Save**.

5.8 Accessing User Management

By using User Management, administrators can maintain a database of all users and groups, synchronized with one or more third-party user directories. User Management provides authentication, authorization, and user management for LiveCycle ES2 modules, including Reader Extensions ES2, Workspace ES2, Rights Management ES2, Process Management ES2, Forms ES2, PDF Generator ES2, PDF Generator 3D ES2, and Content Services ES2.

► **To access User Management:**

1. Log in to LiveCycle Administration Console.
2. On the home page, 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.

5.9 Configuring LiveCycle PDF Generator ES2 or 3D ES2

If you installed LiveCycle PDF Generator ES2 or LiveCycle PDF Generator 3D ES2 as part of your LiveCycle ES2 solution, complete the following tasks:

- [“Setting environment variables” on page 35](#)
- [“Configuring the application server to use HTTP proxy server” on page 36](#)
- [“Setting the Adobe PDF Printer as the default printer” on page 36](#)
- [“Configuring Acrobat Professional” on page 36](#)
- [“Configuring user accounts for multi-threaded file conversions” on page 37](#)

- [“Installing East Asian characters in Windows Server 2003” on page 38](#)
- [“Adding fonts to PDF Generator ES2 or PDF Generator 3D ES2” on page 39](#)
- [“Installing the Network Printer Client” on page 42](#)
- [“Setting watched folder performance parameters” on page 43](#)

5.9.1 Setting environment variables

If you installed the PDF Generator ES2 or PDF Generator 3D ES2 module 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. The table below lists the native applications that PDF Generator ES2 or PDF Generator 3D ES2 requires you to set up environment variables for.

| Application | Environment variable | Example |
|-------------------|----------------------|---|
| Acrobat | Acrobat_PATH | C:\Program Files\Adobe\Acrobat 9.0\Acrobat\Acrobat.exe Note: The environment variable Acrobat_PATH is case-sensitive. |
| Adobe FrameMaker® | FrameMaker_PATH | C:\Program Files\Adobe\FrameMaker7.1\FrameMaker.exe |
| Notepad | Notepad_PATH | C:\WINDOWS\Notepad.exe Note: You can leave the Notepad_PATH variable blank. |
| OpenOffice | OpenOffice_PATH | C:\Program Files\OpenOffice.org 3 |
| Adobe 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 environment variable OpenOffice_PATH 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.

► **To create a new Windows environment variable:**

1. Select **Start > Control Panel > System**.
2. Click the **Advanced** tab and click **Environment Variables**.
3. In the System variables section, click **New**.
4. Enter the environment variable name you need to set (for example, enter `Photoshop_PATH`). This folder is the one that contains the executable file. For example, type the following code:

```
D:\Program Files\Adobe\Adobe Photoshop CS4\Photoshop.exe
```

► **To set the PATH variables on Linux (OpenOffice only):**

- Type the following command:

```
export OpenOffice_PATH=/opt/openoffice.org3
```

5.9.2 Configuring the application server to use HTTP proxy server

If the computer that LiveCycle ES2 is running on uses proxy settings to access external web sites, 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]
```

Complete the following procedure to start your application server with HTTP proxy host setting.

► **To add the setting to JBoss:**

1. From a command line, edit the run script in the *[appserver root]/bin/* directory:

- (Windows) run.bat
- (Linux, UNIX) run.sh

2. Add the following text to the script file:

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

3. Save and close the file.

5.9.3 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 ES2 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**.

5.9.4 Configuring Acrobat Professional

This procedure is required only if you upgraded to or installed Acrobat after you completed the LiveCycle ES2 installation. Upgrading Acrobat can be completed after you run LiveCycle Configuration Manager and deploy LiveCycle ES2 to the application server. Acrobat Professional root directory is designated as *[Acrobat root]*. Typically, the root directory is *C:\Program Files\Adobe\Acrobat 9.0\Acrobat*.

► **To configure Acrobat for use with PDF Generator:**

1. If an earlier version of Acrobat is installed, uninstall it by using Add or Remove Programs in the Windows Control Panel.
2. Do one of the following:
 - If you are using the media, insert the Acrobat CD.
 - If you are using the ESD downloads, download Acrobat from your ESD location.
3. Install Acrobat by running the AutoPlay.exe file.
4. Navigate to the additional\scripts folder on the LiveCycle ES2 installation media.

Run the following batch file `Acrobat_for_PDFG_Configuration.bat`
`[LiveCycleES2 root]/pdfg_config`

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

► **To validate the Acrobat 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 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 (For example, `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 ES2)** Register the DLL file located at `[LiveCycleES2 root]\plugins\x86_win32\PDFG3dAddin.dll`.

5.9.5 Configuring user accounts for multi-threaded file conversions

By default, PDF Generator ES2 can convert only one OpenOffice, Microsoft Word, or PowerPoint document at a time. If you enable multi-threaded conversions, PDF Generator ES2 can convert more than one of the documents concurrently by launching multiple instances of OpenOffice or PDFMaker (which is used to perform the Word and PowerPoint conversions).

Note: Only Microsoft Word 2007 and Microsoft PowerPoint 2007 are supported with multi-threaded file conversions. Microsoft Excel 2003 or 2007 versions are not supported.

If you need to enable multi-threaded file conversion, you must first perform the tasks outlined in the “Enabling multi-threaded file conversions” section of the [Preparing to Install LiveCycle ES2 \(Single Server\)](#) guide.

For Linux and Solaris users, you must create your users and make these additional configurations to remove the password prompts.

► **Add a user account:**

1. In LiveCycle Administration Console, click **Services > LiveCycle PDF Generator ES2 > User Accounts**.
2. Click **Add** and enter the user name and password of a user who has administrative privileges on the LiveCycle ES2 server. If you are configuring users for OpenOffice, dismiss the initial OpenOffice activation dialogs.

Note: If you are configuring users for OpenOffice, the number of instances of OpenOffice cannot be greater than number of user accounts specified in this step.

3. Restart the LiveCycle ES2 server.

► **Additional configuration required for OpenOffice on Linux or Solaris**

1. Add user accounts as described above.
2. Add entries for additional users (other than the administrator who runs the LiveCycle ES2 server in the `/etc/sudoers` file. For example, if you are running LiveCycle ES2 as a user named `lcaadm` and a server named `myhost`, and you want to impersonate `user1` and `user2`, add the following entries to `/etc/sudoers`:

```
lcaadm myhost=(user1) NOPASSWD: ALL
lcaadm myhost=(user2) NOPASSWD: ALL
```

This configuration enables `lcaadm` to run any command on host 'myhost' as 'user1' or 'user2' without prompting for password.

3. Allow all the users that you added via Add a user account to make connections to the LiveCycle ES2 server. For example, to allow a local user named `user1` the permission of making the connection to the LiveCycle ES2 server, use the following command:

```
xhost +local:user1@
```

For more details, refer to `xhost` command documentation.

4. Restart the server.

5.9.6 Installing East Asian characters in Windows Server 2003

When HTML files are converted to PDF by using PDF Generator ES2 or PDF Generator 3D ES2, some East Asian languages, such as Japanese, Korean, and Chinese, and also right-to-left languages, such as Arabic, Armenian, Georgian, Hebrew, Indic, Thai, and Vietnamese, may not be displayed in the PDF file.

To ensure that these languages are displayed in Windows Server 2003, appropriate fonts must be present on the client and server.

► **To install East Asian characters in Windows Server 2003:**

1. Select **Start > Control Panel** and open **Regional and Language Options**.
2. Click the **Languages** tab and select **Install Files for East Asian Languages**.
3. Click the **Advanced** tab and select all the options under Code Page Conversion Tables.

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

5.9.7 Adding fonts to PDF Generator ES2 or PDF Generator 3D ES2

LiveCycle ES2 provides a central repository of fonts named *Adobe LiveCycle ES2 Fonts Management*, which is accessible to all LiveCycle ES2 modules. Make the extra fonts available to non-LiveCycle ES2 applications on the server so that PDF Generator can use these fonts to create PDF documents that are created with these applications.

5.9.7.1 Non-LiveCycle applications

The following list contains non-LiveCycle ES2 applications that PDF Generator ES2 or PDF Generator 3D ES2 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 applications 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.

5.9.7.2 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 ES2 fonts repository, 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.

5.9.7.3 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 3.x and above.
- *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.

5.9.7.4 Adding new fonts to other applications

If you added support for PDF creation in other applications, see the Help for these applications to add new fonts. In Windows, copying your custom fonts to the C:\Windows\Fonts (or equivalent) folder should be sufficient.

5.9.8 Configuring HTML to PDF conversions

The HTML-to-PDF conversion process is designed to use the settings from Acrobat 9 that override the settings from LiveCycle PDF Generator ES2.

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 Professional” on page 36](#).
2. Locate the pdfgen.api file in the `[LiveCycleES2 root]\plugins\x86_win32` directory and copy it to `[Acrobat root]\Acrobat\plug_ins` directory.

5.9.8.1 Enabling support for Unicode fonts in HTML to PDF conversions

Caution: The HTML-to-PDF conversion fails if a zipped input file contains HTML files with double-byte characters in 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`
 - `/usr/share/fonts (Solaris)`

Note: Ensure that the directory `/usr/lib/X11/fonts` exists. If it does not, create a symbolic link from `/usr/share/X11/fonts` to `/usr/lib/X11/fonts` using the `ln` command.

2. Modify the font-name mapping in the `cffont.properties` file located in the `[LiveCycleES2 root]/adobe-generatepdf-dsc.jar` file:

- Extract 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. In the example below, `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`).

5.9.9 Modifying Microsoft Visio 2007 default macro settings

When a Microsoft Visio 2007 file containing macros is submitted for conversion, the resultant Microsoft Office Visio Security Notice dialog causes the conversion to time out. To successfully convert files that contain macros, the default macro settings in Visio must be changed.

► Change the default Visio 2007 macro settings:

- In Visio 2007, click **Tools > Trust Center > Macro Settings** and select either of the following options and then click **OK**:
 - Disable all macros without notification
 - Enable all macros

5.9.10 Installing the Network Printer Client

PDF Generator ES2 includes an executable file to install the PDF Generator ES2 network printer on a client computer. After the installation is complete, a PDF Generator ES2 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 ES2 Network Printer Client (wizard) is supported on 32-bit Windows platforms only.

If the PDFG Network Printer fails to install on Windows or if you want to install the printer on UNIX or Linux platforms, use the operating system's native Add Printer utility and configure it as described in ["To configure PDFG Network Printer on Windows using the native Add Printer wizard:" on page 42.](#)

► To install the PDF Generator ES2 Network Printer Client:

1. Ensure that you successfully installed PDF Generator ES2 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 ES2 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 ES2 has been successfully installed."

4. Click **OK**. You will now have a printer named *Adobe LiveCycle PDF Generator ES2* in your list of available printers.

► To configure PDFG Network 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 PDFG 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 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 ES2 Network Printer Client using Proxy server port forwarding**

1. Configure port forwarding on the CC Proxy server on a particular port to the LiveCycle ES2 server, and disable the authentication at proxy server level (since LiveCycle ES2 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 ES2 server.
2. Install PDFG Network Printer using the following URL:

```
http:// [proxy server] : [forwarded port] /pdfg-ipp/install.
```
3. Provide the necessary credentials for authentication of the PDFG Network Printer.
4. The PDFG Network Printer will be installed on the client machine which you can use for PDF conversion using the firewall protected LiveCycle ES2 server.

5.9.11 Setting watched folder performance parameters

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

► **To set performance parameters for PDF Generator:**

1. Log in to LiveCycle Administration Console and click **Services > Applications and Services > Service Management**.
2. In the list of services, navigate to and click **PDFGConfigService**, and then set the following values:
 - **PDFG Cleanup Scan Seconds:** 1800
 - **Job Expiration Seconds:** 6000
 - **Server Conversion Timeout:** Change the default of 270 to a higher value, such as 450.
3. Click **Save** and restart the server.

5.10 Final setup for LiveCycle Rights Management ES2

Rights Management ES2 requires the application server to be configured to use SSL. (See [LiveCycle ES2 Administration Help](#).)

5.11 Configuring LiveCycle ES2 to access LDAP

If you configured LDAP for LiveCycle 7.x 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 (Enterprise Domain):**

1. Open a web browser, navigate to `http://[host]:[port]/adminui` and log in. (See [“Accessing LiveCycle Administration Console” on page 31](#).)
2. Click **Settings > User Management > Domain Management**, and then click **New Enterprise Domain**.
3. In the **ID** box, type a unique identifier for the domain and, in the **Name** box, type a descriptive name for the domain.
Note: When using MySQL for your LiveCycle ES2 database, use only single-byte (ASCII) characters for the ID. (See “Adding enterprise domains” in [LiveCycle ES2 Administration Help](#).)
4. Click **Add Authentication** and, in the **Authentication Provider** list, select **LDAP**.
5. Click **OK**.
6. Click **Add Directory** and, in the **Profile Name** box, type a name for your LDAP profile.
7. Click **Next**.
8. Specify values in the **Server**, **Port**, **SSL**, and **Binding** boxes, and in the **Populate Page with** box, select a directory settings option such as **Default Sun ONE values**. Also, specify values in the **Name** and **Password** box that would be used to connect to the LDAP database when anonymous access is not enabled. (See “Directory settings” in [LiveCycle ES2 Administration Help](#).)
9. (Optional) Test your configuration:
 - Click **Test**. The screen displays a message indicating either a successful server test or any configuration errors that exist.
10. Click **Next** and configure the **User Settings** as required. (See “Directory settings” in [LiveCycle ES2 Administration Help](#).)
11. (Optional) Test your configuration:
 - Click **Test**.
 - In the Search Filter box, verify the search filter or specify a new search filter, and then click **Submit**. The screen displays a list of entries that match the search criteria.
 - Click **Close** to return to the User Settings screen.

12. Click **Next** configure the **Group Settings** as required. (See “Directory settings” in [LiveCycle ES2 Administration Help](#).)
 13. (Optional) Test your configuration:
 - Click **Test**.
 - In the Search Filter box, verify the search filter or specify a new search filter, and then click **Submit**. The screen displays a list of entries that match the search criteria.
 - Click **Close** to return to the Group Settings screen.
 14. Click **Finish** to exit the New Directory page and then click **OK** to exit.
- **To configure User Management (Local Domain):**
1. Open a web browser, navigate to `http://[host]:[port]/adminui`, and log in. (See “[Accessing LiveCycle Administration Console](#)” on page 31.)
 2. Click **Settings > User Management > Domain Management**, and then click **New Local Domain**.
 3. In the appropriate boxes, enter the domain ID and name. (See “Adding local domains” in [LiveCycle ES2 Administration Help](#).)
 4. (Optional) Disable account locking by deselecting the **Enable Account Locking** option.
 5. Click **OK**.

5.12 Enabling FIPS mode

LiveCycle ES2 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 ES2 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 Settings > 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 ES2 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).

5.13 Configuring HTML digital signature

To use the HTML digital signature feature of Forms ES2, complete the following procedure.

► **To enable HTML digital signature:**

1. Manually deploy the `[LivecycleES2 root]/deploy/adobe-forms-ds.ear` file to your application server.
2. Log in to LiveCycle Administration Console and click **Services > LiveCycle Forms ES2**.
3. Select **HTML Digital Signature Enabled** and then click **Save**.

5.14 Configuring the Document Management service

If you installed Content Services ES2 and your application server is running on a non-default port, modify the port that the Document Management service uses.

► **To modify the port:**

1. Log in to LiveCycle Administration Console and click **Services > Applications and Services > Service Management**.
2. In the list, select **DocumentManagementService**.
3. On the **Configuration** tab, in the **HTTP Port** box, specify the port number you are using and then click **Save**.

5.15 Configuring the Connector for EMC Documentum service

Note: LiveCycle ES2 supports EMC Documentum, versions 6.0, 6.5 and 6.7 SP1 only. Make sure your ECM is upgraded accordingly.

If you installed the Connector for EMC Documentum service as part of your LiveCycle ES2 solution, 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 `[appserverdomain]` folder (if the file does not exist, create it).
2. Add a new system property that provides the following Documentum Foundation Classes JAR files:
 - `dfc.jar`
 - `aspectjrt.jar`
 - `log4j.jar`
 - `jaxb-api.jar`

- (For Connector for EMC Documentum 6.5 only)
 - configservice-impl.jar,
 - configservice-api.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:

Note: If you copy and paste this text, you must remove the formatting characters.

- 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
```

- Connector for EMC Documentum 6.5 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,  
C:/Program Files/Documentum/Shared/jaxb-api.jar,  
C:/Program Files/Documentum/Shared/configservice-impl.jar,  
C:/Program Files/Documentum/Shared/configservice-api.jar
```

- Connector for EMC Documentum 6.7 SP1 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,  
C:/Program Files/Documentum/Shared/jaxb-api.jar,  
C:/Program Files/Documentum/Shared/configservice-impl.jar,  
C:/Program Files/Documentum/Shared/configservice-api.jar  
C:/Program Files/Documentum/Shared/commons-codec-1.3.jar  
C:/Program Files/Documentum/Shared/commons-lang-2.4.jar
```

3. Open a web browser and enter this URL:

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

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

User name: administrator

Password: password

5. Navigate to **Services > LiveCycle ES2 Connector for EMC Documentum > Configuration Settings** and perform these tasks:

- Type the required Documentum repository information.
- To use Documentum as your repository provider, under Repository Service Provider Information, select **EMC Documentum Repository Provider**, and then click **Save**.

6. (Optional) Navigate to **Services > LiveCycle ES2 Connector for EMC Documentum > Repository Credentials Settings**, click **Add**, specify the Docbase information, and then click **Save**.

7. If JBoss Application 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:8080/adminui (local deployment using the default port)
9. Log in using the default user name and password:
 User name: administrator
 Password: password
10. Navigate to **Services > Applications and Services > Service Management** and select the following services:
 - EMCDocumentumAuthProviderService
 - EMCDocumentumContentRepositoryConnector
 - EMCDocumentumRepositoryProvider
11. Click **Start**. If any of the services do not start correctly, check the settings entered in step ?.
12. Do one of the following tasks:
 - To use the Documentum Authentication service (EMCDocumentumAuthProviderService) to display content from a Documentum repository in the Resources view of Workbench ES2, continue with this procedure. Using the Documentum Authentication service overrides the default LiveCycle ES2 authentication and must be configured to log in to Workbench ES2 using Documentum credentials.
 - To use the LiveCycle ES2 repository, log in to Workbench ES2 by using the LiveCycle ES2 super administrator credentials (by default, *Administrator* and *password*).

You have now completed the required steps for this procedure. Use the credentials provided in step ? for accessing the default repository in this case and use the default LiveCycle ES2 authentication service.
13. Restart the 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 MySQL for your LiveCycle ES2 database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in [LiveCycle ES2 Administration Help](#).)
16. Add a custom authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **Custom**.
 - Select **EMCDocumentumAuthProvider** 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.
 - 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.
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 ES2 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.
23. Start Workbench ES2 and log in by using the credentials for the Documentum repository:
Username: *[username]@[repository_name]*
Password: *[password]*

After you log in, the Documentum repository appears in the Resources view within Workbench ES2. If you do not log in using the *username@repository_name*, Workbench ES2 attempts to log in to the default repository specified in step ?.
24. (Optional) To install the LiveCycle ES2 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, see [LiveCycle ES2 Administration Help](#) for information about configuring Workbench ES2 with your Documentum repository.

5.16 Creating the XDP MIME format in a Documentum repository

Before users can store and retrieve XDP files from a Documentum repository, you must do one of these tasks:

- Create a corresponding XDP format in each repository where users will access XDP files.

- Configure the Connector for EMC Documentum service to use a Documentum Administrator account when accessing the Documentum repository. In this case, the Connector for EMC Documentum service uses the XDP format whenever it is required.
- ▶ **To create the XDP format on Documentum Content Server using Documentum Administrator:**
 1. Log in to Documentum Administrator.
 2. Click **Formats** and then select **File > New > Format**.
 3. Type the following information in the corresponding fields:
 - Name:** xdp
 - Default File Extension:** xdp
 - Mime Type:** application/xdp
 4. Repeat steps 1 to 3 for all other Documentum repositories where users will store XDP files.
- ▶ **To configure the Connector for EMC Documentum service to use a Documentum Administrator:**
 1. Open a web browser and enter this URL:
http://localhost:[port]/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 ES2 Connector for EMC Documentum > Configuration Settings**.
 4. Under Documentum Principal Credentials Information, update the following information and then click **Save**:
 - User Name:** [Documentum Administrator user name]
 - Password:** [Documentum Administrator password]
 5. Click **Repository Credentials Settings**, select a repository from the list or, if none exist, click **Add**.
 6. Provide the appropriate information in the corresponding fields and then click **Save**:
 - Repository Name:** [Repository Name]
 - Repository Credentials User Name:** [Documentum Administrator user name]
 - Repository Credentials Password:** [Documentum Administrator password]
 7. Repeat steps 5 to 6 for all repositories where users will store XDP files.

5.17 Configuring the Connector for IBM FileNet service

LiveCycle ES2 supports IBM FileNet, versions 4.0, 4.5 and 5.0 only. Make sure your ECM is upgraded accordingly.

If you installed the Connector for IBM FileNet service as part of your LiveCycle ES2 solution, you must configure the service to connect to the FileNet object store.

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

► **To configure the connector using FileNet 4.x or FileNet 5.0 and CEWS transport:**

1. Open the application server run file in a text editor. The run file is as follows:
 - (Windows) `[appserver root]/bin/run.bat`
 - (UNIX) `[appserver root]/bin/run.sh`
2. Add the location of the FileNet Configuration files as a Java option to the application server start command, and then save the file.

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

```
-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
```

3. If your deployment uses the Process Engine Connector service, copy the file `[appserver root]\client\logkit.jar` to the following directory:
 - **(Manually-configured JBoss)** `[appserver root]/server/all/lib`
 - **(Adobe-preconfigured JBoss)** `[appserver root]/server/lc_<db-name>/lib`
4. Locate the `adobe-component-ext.properties` file in the `[appserver root]/bin` folder (if the file does not exist, create it).
5. Add a new system property that provides the location of these FileNet Application Engine JAR files:
 - `javaapi.jar`
 - `soap.jar`
 - `wasp.jar`
 - `builtin_serialization.jar` (FileNet 4.0 only)
 - `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]
```

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.

Note: For FileNet 4.x, add following .jar files

```
com.adobe.livecycle.ConnectorforIBMFileNet.ext=  
C:/Program Files/FileNet/AE/CE_API/lib2/javaapi.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/wsdapi.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.

Note: For FileNet 4.5, remove the line C:/Program Files/FileNet/AE/CE_API/wsi/lib/builtin_serialization.jar,

Note: For FileNet 5.0, add following .jar files

```
C:/Program Files/FileNet/AE/CE_API/lib/Jace.jar,  
C:/Program Files/FileNet/AE/CE_API/lib2/javaapi.jar,  
C:/Program Files/FileNet/AE/CE_API/lib2/log4j.jar,  
C:/Program Files/FileNet/AE/Router/lib/mailapi.jar,  
C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar  
C:/Program Files/FileNet/AE/CE_API/lib/stax-api.jar,  
C:/Program Files/FileNet/AE/CE_API/lib/xlxsScanner.jar  
C:/Program Files/FileNet/AE/CE_API/lib/xlxsScannerUtils.jar  
C:/Program Files/FileNet/AE/Router/java/jre/lib/xml.jar
```

6. (FileNet Process Engine Connector only) Configure the connection properties for the process engine as follows:

- 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/
```

- 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.

Note: The filename is case-sensitive.

7. Locate the `login-config.xml` file in the following folder and add the following application policy as a child of the `<policy>` node:

- **(Manually-configured JBoss)** `[appserver root]/server/all/conf`
- **(Adobe-preconfigured JBoss)** `[appserver root]/server/lc_<db-name>/conf`

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

8. (FileNet Process Engine Connector 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>
```

9. If the application server is not currently running, start the server. Otherwise, stop and then restart the server.
10. If JBoss runs as a service, start (or restart) the JBoss for Adobe LiveCycle ES2 service.
11. Open a web browser and enter this URL:

`http:// [host] : [port] /adminui`

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

User name: administrator

Password: password

13. Click **Services > LiveCycle ES2 Connector for IBM FileNet**.
14. 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.

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

16. 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 14.
17. 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 ES2, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle ES2 authorization and must be configured to log in to Workbench ES2 by using FileNet credentials.
 - To use the LiveCycle ES2 repository, log in to Workbench ES2 by using the LiveCycle ES2 super administrator credentials (by default, *Administrator* and *password*). The credentials provided in step 14 use the default LiveCycle ES2 authorization service for accessing the default repository in this case.
18. Restart your application server.
19. Log in to LiveCycle Administration Console and click **Settings > User Management > Domain Management**.
20. 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 MySQL for your LiveCycle ES2 database, use only single-byte (ASCII) characters for the ID. (See “Adding enterprise domains” in [LiveCycle ES2 Administration Help](#).)
21. Add a custom authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **Custom**.
 - Select **IBMFileNetAuthProviderService** and then click **OK**.
22. Add an LDAP authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **LDAP** and then click **OK**.
23. 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.
24. Click **OK** to exit the Add Directory page, and then click **OK** again.

25. 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.
26. Navigate to **Settings > User Management > Users and Groups**.
27. 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 ES2 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.
28. Start Workbench ES2 and log in using the following credentials for the IBM FileNet repository:
User name: *[username]@[repository_name]*
Password: *[password]*
The FileNet object store should now be visible in the Resources view within Workbench ES2. If you do not log in using the *username@repository name*, Workbench ES2 attempts to log in to the default repository specified in step 14.
29. (Optional) If you intend to install the LiveCycle ES2 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 [LiveCycle ES2 Administration Help](#) for information about configuring Workbench ES2 functions properly with your FileNet repository.

5.18 Configuring SharePoint client access

You can configure Microsoft SharePoint clients to access content services from LiveCycle ES2. For this, you should add the SharePoint Alfresco Module Package using LiveCycle Configuration Manager. The SharePoint AMP file (adobe-vti-module.amp) is available in *[LiveCycleES2 root]\LiveCycle_ES_SDK\misc\ContentServices* folder.

After you add the SharePoint AMP, perform the following steps:

5.18.1 Obtain and edit the share.war file

Alfresco CMS uses the file share.war to connect with Content Services ES2. You should modify the share.war file to enable SharePoint clients to access Content Services ES2.

1. Obtain the share.war from the Alfresco installation. See your Alfresco documentation for more details.
2. Copy the file share.war to a directory in your file system.
3. Use a file archive utility such as WinRar to open the share.war file.

4. From the file archive utility window, extract the file `WEB-INF/classes/alfresco/webscript-framework-config.xml` and open it using a text editor.
5. Locate the line `<endpoint-url>http://localhost:8080/alfresco/s</endpoint-url>` and change it to `<endpoint-url>http://localhost:8080/contentspace/s</endpoint-url>`
6. Save and close the file.

5.18.2 Deploy the share.war file

1. Open the archive file `adobe-contentservices.ear` using an archive utility such as WinRAR from the location appropriate to your application server.
 - (Adobe-preconfigured JBoss): `[appserver root]\server\lc_<db-name>\deploy`.
 - (Manually-configured JBoss): `[appserver root]\server\all\deploy`
2. Add the updated `share.war` file to the `adobe-contentservices.ear` archive that is opened in the archive utility window.
3. From the file archive utility window, extract the file `application.xml` to a folder in the local file system, and open it using a text editor. This file is in the `adobe-contentservices.ear\META-INF` directory.

4. Add the following lines under the `<application >` tag:

```
<module id="Share">
  <web>
    <web-uri>share.war</web-uri>
    <context-root>/share</context-root>
  </web>
</module>
```

5. Copy the updated `application.xml` file back to the `adobe-contentservices.ear` archive.
6. Save and close the archive.
7. Deploy the updated EAR file.

Note: For JBoss, you can copy the updated EAR file to the `[appserver root]\jboss\server\lc_<db-name>\deploy\` directory for Adobe-preconfigured JBoss and `[appserver root]\server\all\deploy` for manually-configured JBoss.

5.19 Enabling CIFS in IPv6 mode

If you want to enable CIFS for Content Services ES2 on an IPv6 implementation, you must explicitly add an additional IPv6 address to the machine that hosts LiveCycle ES2. This IPv6 address should be a static IP address that resides in the same subnet as the clients. You need to do the following tasks after you configure LiveCycle ES2 using LiveCycle Configuration Manager. Typically, you should pause the LiveCycle Configuration Manager after the EAR file configuration and then edit the EAR file. After you have edited the EAR file, you can go back to the LiveCycle Configuration Manager to deploy the updated EAR file along with other selected EAR files.

5.19.1 Edit the contentservices.war file

1. Navigate to `[LiveCycleES2 root]\configurationManager\export` directory.
2. Use a file archive utility such as WinRar to open the `contentservices.war` file.
3. From the file archive utility window, extract the file `contentservices.war\WEB-INF\classes\alfresco\file-services-custom.xml` and open it using a text editor.
4. Locate the following line and change it by adding `ipv6="enabled"`:

```
<tcpipSMB platforms="linux,solaris,macosx,windows,AIX"/>
```

to

```
<tcpipSMB platforms="linux,solaris,macosx,windows,AIX" ipv6="enabled"/>
```
5. Save and close the file
6. From the file archive utility window, extract the file `contentservices.war\WEB-INF\classes\alfresco\extension\file-servers-properties` into a folder in the local file system, and open it using a text editor.
7. Locate the line `cifs.ipv6=disabled` and replace it with `cifs.ipv6=enabled`.
8. Save and close the file.
9. Copy the updated `file-servers-custom.xml` file into the archive under `contentservices.war\WEB-INF\classes\alfresco\extension\`.
10. Save the `contentservices.war` file.

Note: After you update the EAR files, you should use the LiveCycle Configuration Manager to deploy the updated EAR file.

5.20 Configuring the Connector for IBM Content Manager

Note: LiveCycle ES2 supports IBM Content Manager, version 8.4 only. Make sure your ECM is upgraded accordingly.

If you installed the Connector for IBM Content Manager service as part of your LiveCycle ES2 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 in the `[appserver root]/bin` folder. If the file does not exist, create it.
2. Add a new system property that provides the location of the following IBM I14C JAR files, Config folder that contains the IBM I14C property files, and a ZIP file from DB2 Universal Database Client installation:
 - `cmb81.jar`
 - `cmbcm81.jar`
 - `cmbicm81.jar`

- cmblog4j81.jar
- cmbsdk81.jar
- cmbutil81.jar
- cmbutilicm81.jar
- cmbview81.jar
- cmbwas81.jar
- cmbwcm81.jar
- cmgmt

Note: cmgmt is not a JAR file. On Windows, by default, this folder is at
C:/Program Files/IBM/db2cmv8/.

- common.jar
- db2jcc.jar
- db2jcc_license_cisuz.jar
- db2jcc_license_cu.jar
- ecore.jar
- ibmjgssprovider.jar
- ibmjsseprovider2.jar
- ibmpkcs.jar
- icrm81.jar
- jcache.jar
- log4j-1.2.8.jar
- xerces.jar
- xml.jar
- xsd.jar

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:

```
C:/Program Files/IBM/db2cmv8/cmgmt,  
C:/Program Files/IBM/db2cmv8/java/jre/lib/ibmjsseprovider2.jar,  
C:/Program Files/IBM/db2cmv8/java/jre/lib/ibmjgssprovider.jar,  
C:/Program Files/IBM/db2cmv8/java/jre/lib/ibmpkcs.jar,  
C:/Program Files/IBM/db2cmv8/java/jre/lib/xml.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmbview81.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmb81.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmbcm81.jar,  
C:/Program Files/IBM/db2cmv8/lib/xsd.jar,  
C:/Program Files/IBM/db2cmv8/lib/common.jar,  
C:/Program Files/IBM/db2cmv8/lib/ecore.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmbicm81.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmbwcm81.jar,  
C:/Program Files/IBM/db2cmv8/lib/jcache.jar,
```

```
C:/Program Files/IBM/db2cmv8/lib/cmbutil81.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmbutilicm81.jar,  
C:/Program Files/IBM/db2cmv8/lib/icmrm81.jar,  
C:/Program Files/IBM/db2cmv8/lib/db2jcc.jar,  
C:/Program Files/IBM/db2cmv8/lib/db2jcc_license_cu.jar,  
C:/Program Files/IBM/db2cmv8/lib/db2jcc_license_cisuz.jar,  
C:/Program Files/IBM/db2cmv8/lib/xerces.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmblog4j81.jar,  
C:/Program Files/IBM/db2cmv8/lib/log4j-1.2.8.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmbSDK81.jar,  
C:/Program Files/IBM/db2cmv8/lib/cmbwas81.jar
```

3. If the application server is not currently running, start the server; otherwise, stop and then restart the server.

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 this URL:
`http://[host]:[port]/adminui`
2. Log in using the default user name and password:
User name: *administrator*
Password: *password*
3. Click **Services > LiveCycle ES2 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 ES2, continue with this procedure. Using the IBM Content Manager Authorization service overrides the default LiveCycle ES2 authorization and must be configured to log in to Workbench ES2 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 ES2, log in to Workbench ES2 by using the LiveCycle ES2 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 ES2 authorization service for accessing the default repository in this case.
6. Log in to the LiveCycle Administration Console, and click **Settings > User Management > Domain Management**.

7. 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 MySQL for your LiveCycle ES2 database, use only single-byte (ASCII) characters for the ID. (See “Adding enterprise domains” in [LiveCycle ES2 Administration Help](#).)

8. Add a custom authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **Custom**, and then select **IBMCMAuthProviderService** and click **OK**.
9. Add an LDAP authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **LDAP** and then click **OK**.
10. 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.
11. Click **OK** to exit the Add Directory page and click **OK** again.
12. 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.
13. To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.
14. Navigate to **Settings > User Management > Users and Groups**.
15. 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 ES2 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.

16. Start Workbench ES2 and log in using the following credentials for IBM Content Manager data store:

Username: *[username]@[repository_name]*

Password: *[password]*

The IBM Content Manager data store can now be used in the Processes view within Workbench ES2 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 [LiveCycle ES2 Administration Help](#).

5.21 Perform a system image backup

After LiveCycle ES2 is installed and deployed into production areas and before the system is live, it is recommended that you perform a system image backup on servers to which LiveCycle ES2 is implemented. The LiveCycle ES2 database, GDS directory, and application servers must be part of this backup. This is a complete system backup that you can use to restore the contents of your computer if your hard drive or entire computer stops working. See the “LiveCycle ES2 Backup and Recovery” topic in [LiveCycle ES2 Administration Help](#).

5.22 Uninstalling LiveCycle ES2

The uninstaller located in the *[LiveCycleES2 root]* directory removes the files and applications that were created by the LiveCycle ES2 installer. However, the uninstaller does not remove any custom, non-LiveCycle application folders or files deployed on the application server. If some folders are not removed during uninstallation, restart the system and delete those folders manually.

Note: If you installed LiveCycle ES2 using the command line interface (CLI), you must uninstall LiveCycle ES2 using the CLI itself. See [“Appendix - Install Command Line Interface” on page 88](#).

Caution: By running the uninstaller, all the contents within the product installation directory are subject to removal without further warning. Before you proceed, back up any data you do not want to lose.

► To remove the files from your computer:

1. Invoke the uninstall program:
 - (Windows) Do one of the following:
 - Use **Add or Remove Programs** in the Windows Control Panel and remove **Adobe LiveCycle ES2**.
 - Manually uninstall:
 - Navigate to the directory that contains the uninstaller:
[LiveCycleES2 root]\Uninstall_Adobe LiveCycle ES2
 - Double-click the `Uninstall Adobe LiveCycle ES2.exe` file.

- (UNIX) Do the following:
 - From a terminal, navigate to the directory that contains the uninstall script:
`cd /opt/adobe/adobe_livecycle_es2/Uninstall_Adobe LiveCycle ES2.`
 - Type `./Uninstall Adobe LiveCycle ES2` (you may need to make this binary an executable file by typing a command, such as `chmod 777`).

Note: (UNIX) Navigate to the directory (Uninstall_Adobe LiveCycle ES2) which contains the uninstall script to run it. Because the directory name contains spaces, you should include the entire directory path as part of the command to uninstall the product.

2. Follow the on-screen instructions in the uninstall program, and then click **Finish**.
3. If you are planning to reinstall LiveCycle ES2, remove all residual directories and files existing under the `[LiveCycleES2 root]` directory.

Configuring and deploying LiveCycle Business Activity Monitoring ES2

This section describes the tasks that must be performed to manually configure and deploy LiveCycle Business Activity Monitoring ES2 (BAM):

- [“Adobe-preconfigured JBoss” on page 63](#)
- [“Installing JBoss” on page 64](#)
- [“Configuring the keystore” on page 66](#)
- [“Creating the bam.properties file” on page 66](#)
- [“Create the BAM Server metadata and geography databases” on page 67](#)
- [“Installing database drivers on JBoss for BAM Server” on page 67](#)
- [“Configuring the BAM Server data source for databases” on page 68](#)
- [“Configure Process Management ES2 for BAM Server” on page 77](#)
- [“Deploying BAM Server EAR file to JBoss” on page 77](#)
- [“Configuring Business Activity Monitoring ES2” on page 78](#)
- [“Using BAM Dashboard” on page 80](#)
- [“Shutting down BAM Server” on page 81](#)
- [“Additional documentation” on page 81](#)
- [“Uninstalling Business Activity Monitoring ES2” on page 81](#)

6.1 Adobe-preconfigured JBoss

The Adobe-preconfigured JBoss software for Business Activity Monitoring ES2 is delivered as part of the LiveCycle ES2 media. This is the simplest option for installing JBoss because advanced knowledge of JBoss is not required. Adobe downloads the standard JBoss 4.2.1 archives from the JBoss website and configures them with the options required to run BAM in a stand-alone configuration. You can review these configurations in the following section.

The preconfigured JBoss software is located on the installation media or electronic software distribution (ESD) download in the /third_party directory. To use JBoss 4.2.1 as your application server, extract and copy JBoss_4.2.1_bam.zip file to the location where you intend to install JBoss. The Adobe-preconfigured JBoss has all the configuration steps completed except for the steps described in the following sections:

- [“Setting JAVA_HOME in run.bat or run.sh” on page 64](#)
- [“Create the BAM Server metadata and geography databases” on page 67](#)
- [“Installing database drivers on JBoss for BAM Server” on page 67](#)
- [“Configuring the BAM Server data source for databases” on page 68](#)
- [“Configure Process Management ES2 for BAM Server” on page 77](#)
- [“Deploying BAM Server EAR file to JBoss” on page 77](#)
- [“Configuring Business Activity Monitoring ES2” on page 78](#)
- [“Using BAM Dashboard” on page 80](#)

If you intend to download a supported version of JBoss from the Internet, perform the steps in the following sections.

6.2 Installing JBoss

If you are deploying LiveCycle ES2 modules in addition to BAM in a production environment, BAM must be deployed to a separate application server instance. For larger production environments, you must deploy BAM on a separate computer running a 64-bit operating system. The BAM modelling processes require large amounts of RAM and can require more than the memory limitations on 32-bit systems.

If you are manually configuring JBoss to run BAM Server, download JBoss 4.2.1 from the [JBoss Application Server Download](#) site and install the JBoss instance that will host BAM Server to a directory such as C:\jboss-bam. See ["Customizing port numbers" on page 64](#) to resolve port number conflicts.

The instructions in this document use the following naming conventions for common file paths.

| Name | Description | Default value |
|---------------------|--|--|
| [jboss bam root] | The home directory of the application server for Business Activity Monitoring ES2. | JBoss on Windows: C:\jboss- bam JBoss on Linux: /opt/jboss-bam |
| [LiveCycleES2 root] | The location where the LiveCycle ES2 services are installed | Windows: C:\Adobe\Adobe LiveCycle ES2 UNIX: /opt/adobe/adobe_lifecycle_es2 |

Most of the information about directory locations in this document is cross-platform (all file names and paths are case-sensitive on UNIX). Platform-specific information is indicated as required.

6.2.1 Setting JAVA_HOME in run.bat or run.sh

1. Open run.bat or run.sh from [jboss bam root]\bin.
 - (Windows): set JAVA_HOME=[jdk1.6.0_14]
 - (Linux): export JAVA_HOME=/[FILE PATH]/jdk1.6.0_14]
2. Save and close the file.

6.2.2 Modify the JBoss Service property values

1. Locate the file [jboss bam root]\server\all\conf\jboss-service.xml.
2. Ensure <attribute name="CallByValue"> is true.

6.2.3 Customizing port numbers

To run more than one JBoss instance on a single computer, you must change the port numbers in the following list for the secondary servers to avoid conflicts. The alternate port numbers are suggestions only. Use a utility such as TCPView for Windows or Netstat to verify that the alternate port is available.

For each of the following files, open it in a text editor and make the changes as indicated:

[jboss bam root]\server\all\deploy\jboss-web-deployer\server.xml

- Change HTTP/1.1 Connector port from 8080 to 8888
- Change AJP 1.3 Connector port from 8009 to 8099
- Change SSL/TLS Connector port from 8443 to 8493

[jboss bam root]\server\all\conf\jboss-service.xml

- Change WebService port from 8083 to 8899
- Change NamingService port from 1099 to 9999
- Change RMIport from 1098 to 9998
- Change RMIObjectPort from 4444 to 9444
- Change PooledInvoker ServerBindPort from 4445 to 9445

[jboss bam root]\server\all\conf\jacob.properties

- Change OAPort from 3528 to 9528
- Change OASSLPort from 3529 to 9529

[jboss bam root]\server\all\deploy\snmp-adaptor.sar\META-INF\jboss-service.xml

- Change port from 1162 to 1182
- Change port from 1161 to 1181

[jboss bam root]\server\all\deploy\snmp-adaptor.sar\managers.xml

- Change port from 1162 to 1182

[jboss bam root]\server\all\deploy\ejb3.deployer\META-INF\jboss-service.xml

- Change port from 3873 to 9873

[jboss bam root]\server\all\deploy\httpha-invoker.sar\META-INF\jboss-service.xml

- Change port from 8080 to BAM JBoss port (For example, 8888)

[jboss bam root]\server\all\conf\jboss-minimal.xml

- Change port from 1099 to 9999
- Change port from 1098 to 9998

6.2.4 Modifying the WAR file class-loading isolation

Note: The jboss-service.xml is set by default.

1. Open the [jboss bamroot]/server/all/deploy/jboss-web.deployer/META-INF/jboss-service.xml.
2. Locate <attribute name="Java2ClassLoadingCompliance"> and ensure that the value is `false`.
3. Locate <attribute name="UseJBossWebLoader"> and ensure that the value is `false`.
4. Save and close the file.

6.3 Configuring the keystore

You need administrator and user keystores for password encryption and decryption. You also need to specify the location of these keystores.

► Set up the keystores and keystore locations:

1. Copy the *admin.jks* keystore file from `[LiveCycleES2 root]\LiveCycle_ES_SDK\misc\Business_Activity_Monitoring\keystore` to a location that will be called *[Admin Keystore Location]*. The default password is 40fd2442fa.
2. Copy the *user_sample.jks* keystore file from `[LiveCycleES2 root]\LiveCycle_ES_SDK\misc\Business_Activity_Monitoring\keystore` to a location that will be called *[User Keystore Location]*. The default password is 8deb5102f8.

► Create a user keystore:

It is strongly recommended that you create your own user keystore. To create a user keystore, do the following:

1. Refer to “Working with Encryption Configuration” in [LiveCycle Workbench ES2 Help](#) for information on how to create a Java Keystore.
2. Specify the location of your user keystore with the system setting property called `Keystore Location` in your `bam.properties` file. (See [“Creating the bam.properties file” on page 66.](#))

6.4 Copying the BAM JAR files

1. Navigate to the directory `[LiveCycleES2 root]/deploy`.
2. Copy the jar files to the following location:
 - `[jboss bam root]\bin\obiProperties_Lava_Adobe.jar`
 - `[jboss bam root]\bin\obiProperties.jar`

6.5 Creating the bam.properties file

Before you begin installation, you must create a system properties text file called `bam.properties`, typically in your `[appserver-bam root]/bin` directory. This document refers to this file location as *[bam.properties file location]*. The properties are required so that Business Activity Monitoring ES2 can start properly. Without this text file, BAM Workbench might display the First Time Setup web page dialog box because some required system properties are not set.

You must set the following properties and defaults in your start-up properties text file:

```
SMTP\ Host=[Hostname or IP Address]
SMTP\ From\ Address=smtp@company.com
SMTP\ User=user
SMTP\ Password=password
Logging\ Directory=[log Directory]
Recovery\ Log\ Directory=[Recovery Log Directory]
Recover\ State\ on\ Restart=true
Enable\ Checkpoint=true
```

```
Admin\ Keystore\ Location= [Admin Keystore Location]/admin.jks
Keystore\ Location= [User Keystore Location]/user_sample.jks
Keystore\ Password=8deb5102f8
User\ PrivateKey\ Password=8deb5102f8
```

Note: The location where recovery files would be saved is referred to as *[Recovery Log Directory]*. All spaces in property names must be escaped with a back slash (\) character. In addition, you should use front slash (/) characters for all the file paths used in bam.properties.

6.6 Create the BAM Server metadata and geography databases

You must have a BAM Server metadata database created to store the definitions of process metrics that BAM Server monitors. In addition, you must create a Business Activity Monitoring ES2 geography database to support geography maps, which is required for using geography charts in the BAM Dashboard. For details on supported databases and permissions, see [Preparing to Install LiveCycle ES2 \(Single Server\)](#).

6.6.1 Create user accounts

You must create a dedicated user account that BAM Server can use to connect to the BAM Server metadata and geography databases. For details on the required user permissions, please consult [Preparing to Install LiveCycle ES2 \(Single Server\)](#).

6.7 Installing database drivers on JBoss for BAM Server

To enable BAM Server to connect to the BAM Server metadata database and the LiveCycle ES2 database, install the drivers for the types of databases you are using.

Note: LiveCycle ES2 and BAM Server run in completely different JBoss navigation trees, which means that drivers are required in each tree. As a result, reinstall these drivers for BAM Server.

► Install the JDBC driver for MySQL:

- Copy the mysql-connector-java-5.1.6-bin.jar file from the *[LiveCycleES2 root]/lib/db/mysql* directory to the *[jboss bam root]/server/all/lib* directory.

► Install the JDBC driver for SQL Server:

- Copy the sqljdbc.jar file from the *[LiveCycleES2 root]/lib/db/mssql* directory to the *[jboss_bam_root]/server/all/lib/* directory.

► Install the JDBC driver for Oracle:

- Copy the ojdbc6.jar file from the *[LiveCycleES2 root]/lib/db/oracle* directory to the *[jboss bam root]/server/all/lib* directory.

6.8 Configuring the BAM Server data source for databases

The following procedure describes how to configure the BAM Server data sources for metadata and geography databases.

► Configure the MySQL data source:

1. Copy the `adobe-ds-jboss-mysql.xml` from `[JBoss_DVD]/third_party/datasources/bam` to `[jboss bam root]/server/all/deploy`.
2. Rename it as `adobe-ds.xml` and open it in a text editor.
3. Modify the following code in the `adobe-ds.xml` file:

```
<local-tx-datasource>
  <jndi-name>IDP_DS</jndi-name>
  <connection-url>jdbc:mysql:// [host name] : [port] / [dbname for adobe]
</connection-url>
  <use-java-context>>false</use-java-context>
  <driver-class>com.mysql.jdbc.Driver</driver-class>
  <user-name>[lc username]</user-name>
  <password>[lc password]</password>
  <min-pool-size>10</min-pool-size>
  <max-pool-size>50</max-pool-size>
  <valid-connection-checker-class-name>com.mysql.jdbc.integration.
jboss.MySqlValidConnectionChecker</valid-connection-checker-class-name>
  <exception-sorter-class-name>com.mysql.jdbc.integration.
jboss.ExtendedMysqlExceptionSorter</exception-sorter-class-name>
  <new-connection-sql>SELECT count (*) from DUAL</new-connection-sql>
  <check-valid-connection-sql>SELECT count (*) from DUAL
</check-valid-connection-sql>
  <blocking-timeout-millis>20000</blocking-timeout-millis>
  <idle-timeout-minutes>10</idle-timeout-minutes>
  <prepared-statement-cache-size>50</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
</local-tx-datasource>

<local-tx-datasource>
  <jndi-name>EDC_DS</jndi-name>
  <connection-url>jdbc:mysql:// [host name] : [port] / [dbname for adobe]
</connection-url>
  <use-java-context>>false</use-java-context>
  <driver-class>com.mysql.jdbc.Driver</driver-class>
  <user-name>[lc username]</user-name>
  <password>[lc password]</password>
  <min-pool-size>1</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <valid-connection-checker-class-name>com.mysql.jdbc.integration.
jboss.MySqlValidConnectionChecker</valid-connection-checker-class-name>
  <exception-sorter-class-name>com.mysql.jdbc.integration.
jboss.ExtendedMysqlExceptionSorter</exception-sorter-class-name>
  <new-connection-sql>SELECT count (*) from DUAL</new-connection-sql>
  <check-valid-connection-sql>SELECT count (*) from DUAL
</check-valid-connection-sql>
  <blocking-timeout-millis>20000</blocking-timeout-millis>
```

```
<idle-timeout-minutes>10</idle-timeout-minutes>
<prepared-statement-cache-size>100</prepared-statement-cache-size>
<transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
</local-tx-datasource>

<no-tx-datasource>
  <jndi-name>com.cognos.obl.metadata.metaDatasource</jndi-name>
  <use-java-context>false</use-java-context>
  <connection-url>jdbc:mysql:// [host name] : [port] / [dbname for adobe meta]
  </connection-url>
  <driver-class>com.mysql.jdbc.Driver</driver-class>
  <user-name> [bam username] </user-name>
  <password> [bam password] </password>
  <min-pool-size>1</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <blocking-timeout-millis>20000</blocking-timeout-millis>
  <idle-timeout-minutes>10</idle-timeout-minutes>
  <prepared-statement-cache-size>50</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
</no-tx-datasource>

<no-tx-datasource>
  <jndi-name>com.cognos.obl.geo.geoDatasource</jndi-name>
  <use-java-context>false</use-java-context>
  <connection-url>jdbc:mysql:// [host name] : [port] / [dbname for adobe_geo]
  </connection-url>
  <driver-class>com.mysql.jdbc.Driver</driver-class>
  <user-name> [bam username] </user-name>
  <password> [bam password] </password>
  <min-pool-size>10</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <blocking-timeout-millis>20000</blocking-timeout-millis>
  <idle-timeout-minutes>10</idle-timeout-minutes>
  <prepared-statement-cache-size>50</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
</no-tx-datasource>
```

where:

- *[host name]* is the name of the computer where MySQL is running. Provide the hostname or IP address of the LiveCycle ES2 database server. Do not use the default localhost.
- *[port]* is the port that is used to access the database. The default port for MySQL is 3306.
- *[dbname for adobe]* is the name of the LiveCycle ES2 database .
- *[dbname for adobe_meta]* is the name of the BAM Server metadata database.
- *[dbname for adobe_geo]* is the name of the BAM Server geography database.
- *[bam username]* is the name of the database user account that can access the BAM Server metadata database and geography database.
- *[bam password]* is the password for the user name that is specified for the *[bam username]* element.
- *[lc username]* is the name of the database user account that can access the LiveCycle ES2 database.

- `[lc password]` is the password for the user name that is specified for the `[lc username]` element.

4. Save and close the file.

► **Configure the SQL Server data source:**

1. Copy the `adobe-ds-jboss-mssql.xml` from `[JBoss_DVD]/third_party/datasources/bam` to `[jboss bam root]/server/all/deploy`.
2. Rename it as `adobe-ds.xml` and open it in a text editor.
3. Modify the following code in the `adobe-ds.xml` file:

```
<local-tx-datasource>
  <jndi-name>IDP_DS</jndi-name>
  <connection-url>jdbc:sqlserver:// [host name] : [port] ;DatabaseName=
  [dbname for adobe]</connection-url>
  <use-java-context>>false</use-java-context>
  <driver-class>com.microsoft.sqlserver.jdbc.SQLServerDriver</driver-class>
  <user-name>[lc username]</user-name>
  <password>[lc password]</password>
  <min-pool-size>10</min-pool-size>
  <max-pool-size>50</max-pool-size>
  <blocking-timeout-millis>60000</blocking-timeout-millis>
  <idle-timeout-minutes>15</idle-timeout-minutes>
  <prepared-statement-cache-size>100</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
  <!-- sql to call when connection is created
  <new-connection-sql>some arbitrary sql</new-connection-sql>
  -->
  <!-- sql to call on an existing pooled connection when it is obtained from
  pool
  <check-valid-connection-sql>some arbitrary sql
  </check-valid-connection-sql>
  -->
  <!-- corresponding type-mapping in the standardjbosscomp-jdbc.xml (optional)
  -->
  <metadata>
    <type-mapping>MS SQLSERVER2005</type-mapping>
  </metadata>
</local-tx-datasource>
```

```
<local-tx-datasource>
  <jndi-name>EDC_DS</jndi-name>
  <connection-url>jdbc:sqlserver:// [host name] : [port] ;DatabaseName=
  [dbname for adobe]</connection-url>
  <use-java-context>>false</use-java-context>
  <driver-class>com.microsoft.sqlserver.jdbc.SQLServerDriver</driver-class>
  <user-name>[lc username]</user-name>
  <password>[lc password]</password>
  <min-pool-size>1</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <blocking-timeout-millis>60000</blocking-timeout-millis>
  <idle-timeout-minutes>15</idle-timeout-minutes>
  <prepared-statement-cache-size>100</prepared-statement-cache-size>
```

```
<transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
<!-- sql to call when connection is created
<new-connection-sql>some arbitrary sql</new-connection-sql>
-->
<!-- sql to call on an existing pooled connection when it is obtained from
pool
<check-valid-connection-sql>some arbitrary sql
</check-valid-connection-sql>
-->
<!-- corresponding type-mapping in the standardjbosscmp-jdbc.xml (optional)
-->
<metadata>
  <type-mapping>MS SQLSERVER2005</type-mapping>
</metadata>
</local-tx-datasource>

<no-tx-datasource>
  <jndi-name>com.cognos.obj.metadata.metaDataSource</jndi-name>
  <use-java-context>false</use-java-context>
  <connection-url>jdbc:sqlserver:// [host name] : [port] ;DatabaseName=
  [dbname for adobe_meta]</connection-url>
  <driver-class>com.microsoft.sqlserver.jdbc.SQLServerDriver</driver-class>
  <user-name>[bam username]</user-name>
  <password>[bam password]</password>
  <min-pool-size>1</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <blocking-timeout-millis>60000</blocking-timeout-millis>
  <idle-timeout-minutes>15</idle-timeout-minutes>
  <prepared-statement-cache-size>100</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
  <metadata>
    <type-mapping>MS SQLSERVER2005</type-mapping>
  </metadata>
</no-tx-datasource>

<no-tx-datasource>
  <jndi-name>com.cognos.obj.geo.geoDataSource</jndi-name>
  <use-java-context>false</use-java-context>
  <connection-url>jdbc:sqlserver:// [host name] : [port] ;DatabaseName=
  [dbname for adobe_geo]</connection-url>
  <driver-class>com.microsoft.sqlserver.jdbc.SQLServerDriver</driver-class>
  <user-name>[bam username]</user-name>
  <password>[bam password]</password>
  <min-pool-size>10</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <blocking-timeout-millis>60000</blocking-timeout-millis>
  <idle-timeout-minutes>15</idle-timeout-minutes>
  <prepared-statement-cache-size>100</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
  <metadata>
    <type-mapping>MS SQLSERVER2005</type-mapping>
  </metadata>
</no-tx-datasource>
```

where:

- *[host name]* is the name of the computer where SQL Server 2005 is running. Provide the hostname or IP address of the LiveCycle ES2 database server. Do not use the default localhost.

Note: The JDBC driver for SQL Server does not parse numeric IPv6 addresses. If you are employing the SQL Server in an IPv6 environment, the server name must be specified in the following format:

```
<connection-url>jdbc:sqlserver://;serverName=[Numeric IPv6 address of  
the database host]:[port];databaseName=[LiveCycleES2  
database]</connection-url>
```

When you specify the IPv6 address of the server in this format, you must note that the string **;serverName** is a keyword; it must not be replaced with the actual server name.

- *[port]* is the port that is used to access the database. The default port for SQL Server 2005 is 1433.
- *[dbname for adobe]* is the name of the LiveCycle ES2 database .
- *[dbname for adobe_meta]* is the name of the BAM Server metadata database.
- *[dbname for adobe_geo]* is the name of the BAM Server geography database.
- *[bam username]* is the name of the database user account that can access the BAM Server metadata database and geography database.
- *[bam password]* is the password for the user name that is specified for the *[bam username]* element.
- *[lc username]* is the name of the database user account that can access the LiveCycle ES2 database.
- *[lc password]* is the password for the user name that is specified for the *[lc username]* element.

4. Save and close the file.

► Configure the Oracle data source:

1. Copy the `adobe-ds-jboss-oracle.xml` from `[JBoss_DVD]/third_party/datasources/bam` to `[jboss bam root]/server/all/deploy`.
2. Rename it as `adobe-ds.xml` and open it in a text editor.
3. Modify the following code in the `adobe-ds.xml` file:

```
<local-tx-datasource>  
  <jndi-name>IDP_DS</jndi-name>  
  <connection-url>jdbc:oracle:thin:@//[host name]:[port]:[dbSID for adobe]  
</connection-url>  
  <use-java-context>>false</use-java-context>  
  <driver-class>oracle.jdbc.driver.OracleDriver</driver-class>  
  <user-name>[lc username]</user-name>  
  <password>[lc password]</password>  
  <min-pool-size>10</min-pool-size>  
  <max-pool-size>50</max-pool-size>  
<exception-sorter-class-name>org.jboss.resource.adapter.jdbc.vendor.  
OracleExceptionSorter</exception-sorter-class-name>  
  <blocking-timeout-millis>20000</blocking-timeout-millis>  
  <idle-timeout-minutes>10</idle-timeout-minutes>  
  <prepared-statement-cache-size>50</prepared-statement-cache-size>  
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>  
</local-tx-datasource>
```

```
<local-tx-datasource>
  <jndi-name>EDC_DS</jndi-name>
  <connection-url>jdbc:oracle:thin:@// [host name] : [port] : [dbSID for adobe]
  </connection-url>
<use-java-context>false</use-java-context>
  <driver-class>oracle.jdbc.driver.OracleDriver</driver-class>
  <user-name>[lc username]</user-name>
  <password>[lc password]</password>
  <min-pool-size>1</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <exception-sorter-class-name>org.jboss.resource.adapter.jdbc.vendor.
  OracleExceptionSorter</exception-sorter-class-name>
  <blocking-timeout-millis>20000</blocking-timeout-millis>
  <idle-timeout-minutes>10</idle-timeout-minutes>
  <prepared-statement-cache-size>50</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
</local-tx-datasource>

<no-tx-datasource>
  <jndi-name>com.cognos.obi.metadata.metaDataSource</jndi-name>
  <use-java-context>false</use-java-context>
  <connection-url>jdbc:oracle:thin:@// [host name] : [port] :
  [dbSID for adobe_meta]</connection-url>
  <driver-class>oracle.jdbc.driver.OracleDriver</driver-class>
  <user-name>[bam username]</user-name>
  <password>[bam password]</password>
  <min-pool-size>1</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <exception-sorter-class-name>org.jboss.resource.adapter.jdbc.vendor.
  OracleExceptionSorter</exception-sorter-class-name>
  <blocking-timeout-millis>60000</blocking-timeout-millis>
  <idle-timeout-minutes>15</idle-timeout-minutes>
  <prepared-statement-cache-size>100</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
</no-tx-datasource>

<no-tx-datasource>
  <jndi-name>com.cognos.obi.geo.geoDataSource</jndi-name>
  <use-java-context>false</use-java-context>
  <connection-url>jdbc:oracle:thin:@// [host name] : [port] :
  [dbSID for adobe_geo]</connection-url>
  <driver-class>oracle.jdbc.driver.OracleDriver</driver-class>
  <user-name>[bam username]</user-name>
  <password>[bam password]</password>
  <min-pool-size>10</min-pool-size>
  <max-pool-size>20</max-pool-size>
  <exception-sorter-class-name>org.jboss.resource.adapter.jdbc.vendor.
  OracleExceptionSorter</exception-sorter-class-name>
  <blocking-timeout-millis>60000</blocking-timeout-millis>
  <idle-timeout-minutes>15</idle-timeout-minutes>
  <prepared-statement-cache-size>100</prepared-statement-cache-size>
  <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
```

</no-tx-datasource>

where:

- *[host name]* is the name of the computer where Oracle is running. Provide the hostname or IP address of the LiveCycle ES2 database server. Do not use the default localhost.
- *[port]* is the port that is used to access the database. The default port for Oracle is 1521.
- *[dbSID for adobe]* is the system ID of the LiveCycle ES2 database.
- *[dbSID for adobe_meta]* is the system ID of the BAM Server metadata database.
- *[dbSID for adobe_geo]* is the system ID of the BAM Server geography database.
- *[bam username]* is the name of the database user account that can access the BAM Server metadata database and geography database.
- *[bam password]* is the password for the user name that is specified for the *[bam username]* element.
- *[lc username]* is the name of the database user account that can access the LiveCycle ES2 database.
- *[lc password]* is the password for the user name that is specified for the *[lc username]* element.

4. Save and close the file.

6.8.1 Configure required JVM options for JBoss

You must configure the JVM to support BAM Server.

1. Navigate to the *[jboss bam root]/bin* directory and open the startup script in a text editor:
 - (Windows) `run.bat`
 - (Linux) `run.sh`
2. Change the `JAVA_OPTS` memory settings to 2048M minimum and 2048M maximum, and include `-server` to improve the performance:
 - (Windows) `set JAVA_OPTS=%JAVA_OPTS% -XX:MaxPermSize=256m -Xms2048m -Xmx2048m`
 - (Linux) `JAVA_OPTS="$JAVA_OPTS -XX:MaxPermSize=256m -Xms2048m -Xmx2048m"`

For large data loads, consider increasing the maximum memory even higher. For any production environment, at least 16 GB RAM is recommended.

3. Add a `JAVA_OPTS` setting to point to the `bam.properties` file:
 - (Windows) `set JAVA_OPTS=%JAVA_OPTS% -DCASBOOTPROPS=bam.properties -Dcom.cognos.obi.bootstrap.envpropname=CASBOOTPROS`
 - (Linux) `JAVA_OPTS="$JAVA_OPTS -DCASBOOTPROPS=bam.properties -Dcom.cognos.obi.bootstrap.envpropname=CASBOOTPROS"`

Note: If the JBoss `run.sh` is not invoked from the *[jboss bam root]/bin* directory, change the above settings to ensure that the `bam.properties` file is referred using the absolute path:
`-DCASBOOTPROPS=[jboss bam root]/bin/bam.properties`

4. Add a `JAVA_OPTS` setting to enable UTF-8 character support:

- (Windows) `set JAVA_OPTS=%JAVA_OPTS% -Dfile.encoding=utf8`
- (Linux) `JAVA_OPTS="$JAVA_OPTS -Dfile.encoding=utf8"`

5. Add a `JAVA_OPTS` setting to disable double logging of system output. This is a work-around to JBoss.

- (Windows): `set JAVA_OPTS=%JAVA_OPTS%
-Dorg.jboss.logging.Log4jService.catchSystemOut=false
-Dorg.jboss.logging.Log4jService.catchSystemErr=false`
- (Linux): `JAVA_OPTS="$JAVA_OPTS
-Dorg.jboss.logging.Log4jService.catchSystemOut=false
-Dorg.jboss.logging.Log4jService.catchSystemErr=false"`

Note: You must enter these in a single line.

6. Set the property `anonymousaccessenabled` to `false` to disable anonymous login.

- (Windows): `set JAVA_OPTS=%JAVA_OPTS% -Danonymousaccessenabled=false`
- (Linux): `JAVA_OPTS="$JAVA_OPTS -Danonymousaccessenabled=false"`

7. Set the property `integrationenabled` to `false`.

- (Windows): `set JAVA_OPTS=%JAVA_OPTS% -Dintegrationenabled=false`
- (Linux): `JAVA_OPTS="$JAVA_OPTS -Dintegrationenabled=false"`

8. Set `JBOSS_CLASSPATH`:

- (Windows):
`set JBOSS_CLASSPATH=%JBOSS_CLASSPATH%;obiProperties_Lava_Adobe.jar;
obiProperties.jar;%RUN_CLASSPATH%`
- (Linux):
`JBOSS_CLASSPATH="$JBOSS_CLASSPATH:obiProperties_Lava_Adobe.jar:obiProperti
es.jar:$RUN_CLASSPATH"`

Note: If the JBoss `run.sh` is not invoked from the `[jboss bam root]/bin` directory, change the above settings to ensure that the `obiProperties_Lava_Adobe.jar` and `obiProperties.jar` files are referred using the absolute path:

- (Windows):
`set JBOSS_CLASSPATH=%JBOSS_CLASSPATH%; [jboss bam root]/bin/obiPropert
ies_Lava_Adobe.jar; [jboss bam root]/bin/obiProperties.jar;
%RUN_CLASSPATH%`
- (Linux):
`JBOSS_CLASSPATH="$JBOSS_CLASSPATH: [jboss bam root]/bin/obiProperties_
Lava_Adobe.jar: [jboss bam root]/bin/obiProperties.jar:
$RUN_CLASSPATH"`

Note: Ensure the JAR files are specified in the order as shown above.

9. Add a `JAVA_OPTS` setting to increase the thread stack size to 300:

- (Windows): `set JAVA_OPTS=%JAVA_OPTS% -XX:ThreadStackSize=300`
- (Linux): `JAVA_OPTS="$JAVA_OPTS -XX:ThreadStackSize=300"`

10. If supported, enable the `UseCompressedOops` option to reduce heap usage:

```
set JAVA_USE_COMPRESSED=
```

```
%JAVA%" -XX:+UseCompressedOops > nul 2>&1
if not errorlevel == 1 (set JAVA_USE_COMPRESSED=-XX:+UseCompressedOops)
set JAVA_OPTS=%JAVA_OPTS% %JAVA_USE_COMPRESSED%
```

11. (64-bit JBoss only) Activate the 64-bit JVM by adding the following line to the JAVA_OPTS setting:

```
JAVA_OPTS="$JAVA_OPTS -D64"
```

12. (Linux only) Export JBOSS_CLASSPATH and JAVA_OPTS to environmental variables:

```
export JBOSS_CLASSPATH
export JAVA_OPTS
```

13. Save and close the startup script file.

6.8.2 Configure optional JBoss JVM parameters

You can set several optional JVM parameters that are related to the BAM Server metadata database, including language, country, and collation strength. These JVM parameters are expressed by using commands in the following format:

```
-Dcom.cognos.obj.property.[PARAMETER]=[VALUE]
```

This table provides valid values for *[PARAMETER]* and *[VALUE]*.

| Parameter | Description |
|---------------|--|
| LANGUAGE | The ISO language code for the server. For example, the following command sets the LANGUAGE parameter to Portuguese: <pre>-Dcom.cognos.obj.property.LANGUAGE=PT</pre> |
| COUNTRY | The ISO country code for the server. |
| LOCALESORT | Specifies whether locale-sensitive string comparisons are performed. Valid values are <code>true</code> and <code>false</code> : <ul style="list-style-type: none"> Specify <code>true</code> to have locale-sensitive string comparisons performed. Specify <code>false</code> to not have locale-sensitive string comparisons performed. The default value is <code>false</code> . |
| STRENGTH | The level of collation strength, which is the extent to which non-English characters are compared and collated. Valid values (in the order of least discriminating to most discriminating) are <code>primary</code> , <code>secondary</code> , <code>tertiary</code> , and <code>identical</code> . The default value is <code>tertiary</code> . For more information, see the Sun Java documentation . Note: This setting is functional only if <code>LOCALESORT</code> is set to <code>true</code> . |
| DECOMPOSITION | The mode of collation decomposition. Valid values are <code>none</code> , <code>canonical</code> , and <code>full</code> . The default value is <code>canonical</code> . For more information, see the Sun Java documentation . Note: This setting is functional only if <code>LOCALESORT</code> is set to <code>true</code> . |

To set multiple properties, separate each command with a space. For example, the following commands set the language to Portuguese and the locale to Brazil:

```
-Dcom.cognos.obj.property.LANGUAGE=PT -Dcom.cognos.obj.property.LOCALE=BR
```

6.9 Configure Process Management ES2 for BAM Server

You can configure LiveCycle Process Management ES2 to connect to BAM Server by using LiveCycle Administration Console. You must specify the server that the LiveCycle ES2 server and BAM Server are running on and the user account information to access BAM Server.

► Configure Process Management ES2 for BAM Server:

1. Log in to LiveCycle Administration Console from a web browser:

`http://[host name]:[port]/adminui.`

2. Click **Services > LiveCycle Process Management ES2 > Server Settings > BAM Configuration Settings**.

3. Type values for the following properties:

BAM Host: The host name or IP address of the server that BAM Server is running on.

Note: If LiveCycle ES2 and BAM are on different machines, you must enter the BAM Host hostname or IP address instead of *localhost*.

BAM Port: The service port of the application server that BAM Server is running on. For JBoss, this value is typically 8888.

LiveCycle Server Host: The host name or IP address of the server that the LiveCycle ES2 server is running on. The default value is *localhost*.

Note: If LiveCycle ES2 and BAM are on different machines, you must enter the LiveCycle ES2 Host hostname or IP address instead of *localhost*.

LiveCycle Server Port: The service port of the application server that the LiveCycle ES2 server is running on. For JBoss, this value is typically 8080.

User Name: (Optional) The administrator user account that Process Management ES2 uses to access BAM Server. The default user name is *CognosNowAdmin*.

Note: If you specify the user name for a different user account, ensure that the user has complete administrative privileges for BAM Server. For information about administering BAM Server user accounts, see [Creating Processes Using Workbench ES2 Help](#).

Password: (Optional) A valid password for the user name specified above. The default password is *manager*.

4. Click **Save** and restart the LiveCycle ES2 server.

6.10 Deploying BAM Server EAR file to JBoss

Deploy the BAM Server EAR file to the application server that you configured for running BAM Server.

1. Stop JBoss Application Server for BAM Server, if it is running.

2. Navigate to `[LiveCycleES2 root]/deploy` and copy the `Lava_Adobe.ear` file to `[jboss bam root]/server/all/deploy/`.
3. Restart the application server. See the Preparing to Install guide for information about starting and stopping the application server. You should ensure that there are no errors in the JBoss console log when you restart the application server.

6.11 Configuring Business Activity Monitoring ES2

You must log in to the BAM Workbench interface and then configure the BAM Server system.

► Log in to BAM Workbench:

1. After JBoss Application Server is started, access the BAM Workbench interface by typing the following URL in a web browser:

```
http://[host name]:[port]/bam/login/workbench.htm
```

2. Log in as an administrator. The default administrator account for BAM Server uses the following ID:

Username: CognosNowAdmin

Password: manager

► Configure the BAM Server system settings:

When you log in to the BAM Workbench for the first time, you are prompted to configure the system settings.

1. On the Administration Console tab, click **System Settings...**
2. In the **Configure** list, select **Checkpoint Configuration** and then ensure that **Enable Checkpoint** is selected.

Note: BAM Recovery Log Directory is set to `/root` for WebLogic and WebSphere, and `../server/all/log` for JBoss by default. You can set a custom BAM Recovery Log directory so that you won't lose data if you forget to backup the `DEFAULTRECOVERYLOGGER` file during a restore.

3. In the **Configure** list, select **System Control** and then ensure that **Recover State on Restart** is selected.
4. In the **Configure** list, select **Encryption Configuration**.
5. Specify a password in the **Keystore Password** and **User PrivateKey Password** boxes. The default user keystore password is `8deb5102f8`.
6. Click **OK**.

► Import the LiveCycle ES2 metadata definitions:

1. Click the **Administration Console** tab > **Import/Export**.
2. Select **Import Metadata from a JAR file (upload)** and click **Browse** to enter the full path to the location of the Business Activity Monitoring ES2 metadata template that is appropriate for the LiveCycle ES2 database:
 - (MySQL) `adobeimport_MySQL.jar`

- (Oracle) adobeimport_Oracle.jar
- (SQL Server) adobeimport_SQLServer.jar

These files are located in the *[LiveCycleES2 root]/deploy* directory.

3. Click **OK** to import the file.

This task brings in all long-lived processes with Auto generates BAM dashboards enabled. After importing, log in as an administrator user to view all the Workbench and Dashboard objects.

► **Import the Adobe User Management plug-in:**

1. On the Workbench tab click **JAR Files** then click **New JAR...** on the right hand side.
2. On the **Create JAR File** dialog, enter the name as `BAMUMPlugin`, click the Browse, choose the location of *[LiveCycleES2 root]/deploy/adobe-um-plugin.jar* and then click Open.
3. Click **Save**.
4. On Administration Console tab, click **System Settings...**
5. From the Configure list select **UM-SSO Configuration > BAMUMPlugin**.
6. Click **OK**.
7. Click **System Settings...**, select **Adobe LiveCycle Settings** from the Configure list, update the following values if required, then click **OK**.

User Name: The administrator user account

Password: The administrator password

Host: The machine name or IP address of LiveCycle ES2 server

Port: The LiveCycle ES2 server port

Server Type: JBoss

Invocation Protocol: SOAP

6.12 Synchronize users from LiveCycle User Management

You can synchronize the users from LiveCycle User Management to BAM so that the users can be authenticated by BAM Workbench and BAM Dashboard. For this, you need to create a group in User Management and then synchronize the list of users from User Management.

► **Create a User Management Group:**

1. Log in to LiveCycle Administration Console at `http://[host name]:[port]/adminui` as a user with a Security Administrator role.
2. Click **Settings > User Management > Users and Groups**, and then click **New Group**.
3. Type the Group Name and enter other details, and then click **Next**.
4. Choose the users on Group Membership page to associate with a group, select **Associate this group to other group page** and then click **Next**.

5. Click **Next**, and then click **Finish**.

Note: To create multiple groups for BAM, ensure that these group names have the same prefix.

► **Synchronize users from User Management:**

1. Log in to BAM Workbench by typing `http://[host name]:[port]/bam/login/workbench.htm` in a web browser.
2. On the Administration Console tab, click **System Settings...** and from the Configure list, select **Adobe LiveCycle Settings**.
3. Modify the Role Prefix to match your BAM group prefix and click **OK**.
4. Click **System Settings...**, and from the Configure list click **UM-SSO Configuration > BAMUMPlugin**.
5. Set the schedule for synchronizing users and click **OK**.
6. (Optional) To synchronize the users immediately, click **Synchronize Now** and then click **OK**. All the users in BAM group will be synchronized into BAM system.

Note: If you perform another user synchronization, the existing users in BAM server will be re-written, including their BAM roles. To avoid this, create a new user group for your new BAM users and use **Synchronize Now** option.

6.13 Using BAM Dashboard

Process-specific dashboards are created in Business Activity Monitoring ES2 if you select “Auto generate BAM dashboards” when creating your process in LiveCycle Workbench ES2. When a process is activated and immediately invoked, the process instance is not registered on the corresponding BAM Dashboard. BAM Server requires several seconds after a process is activated before it can monitor the process for activity. After you activate a process, wait several seconds before you invoke it.

If you install BAM Server after LiveCycle ES2 has run a process, you must populate BAM Dashboard. Populating BAM Dashboard initializes BAM Server to begin polling the LiveCycle ES2 database. When this process is enabled, the AdobeView can be created from the information that is gathered from the LiveCycle ES2 database. In the case of a clean LiveCycle ES2 installation, the database will be empty and no view will be created.

► **Populate BAM Dashboard**

1. Log in to BAM Workbench by typing `http://[host name]:[port]/bam/login/workbench.htm` in the URL line of a web browser.
2. On Workbench tab, click **Public Folders**.
3. Locate `ActivityInstanceStartedEvent` and `ActivityInstanceCompletedEvent`.
4. Disable each Data Stream. Double click each Data Stream, click **Status: Enabled** on the right hand side of each Data Stream page and click **Disable Dependencies** button.
5. Enable each Data Stream. Double click each Data Stream, click **Status: Disabled** on the right hand side of each Data Stream page and click **Enable All**.

6. Repeat steps 4 to 5 for `ProcessInstanceStartedEvent` and `ProcessInstanceCompletedEvent`.
7. Repeat steps 4 to 5 for all remaining events except `AdobeEvent`, `VC_SYSTEM_EVENTS`, and `VC_TASK_EVENTS`.

When BAM Dashboard has been populated, you can log in to BAM Dashboard to view the LiveCycle ES2 processes.

► Log in to BAM Dashboard

1. Type the URL to the dashboard in a web browser. For example, type this URL:

```
http://[host name]:[port]/bam/
```

2. Log in as an administrator. The default administrator account for BAM Server uses the following credentials:

Username: *CognosNowAdmin*

Password: *manager*

6.14 Shutting down BAM Server

Use the following procedure to shut down BAM Server under JBoss Application Server.

1. Log in to BAM Workbench as an administrator by typing `http://[host name]:[port]/bam/login/workbench.htm` in the URL line of a web browser.
2. Perform a system checkpoint by selecting **Administration Console > System Settings dialog > Checkpoint Configuration** tab, and then click **Run Checkpoint Now**.

A snapshot saves the state of the system. When the Recover Check Point State on Restart option on the System controls tab is on, the servers restore the last checkpoint data when they restart.

3. Run the JBoss Application Server shutdown script:
 - (Windows) `[jboss bam root]\bin\shutdown.bat -S`
 - (UNIX) `./[jboss bam root]/bin/shutdown.sh -S`

6.15 Additional documentation

You can access additional information about Business Activity Monitoring ES2 in the [Adobe Business Activity Monitoring ES2 Help](#).

6.16 Uninstalling Business Activity Monitoring ES2

You must uninstall BAM Server completely before attempting to reinstall. When you uninstall LiveCycle ES2, BAM will be removed along with it. Because some folders might not be removed during uninstallation, you should ensure that BAM has been cleanly uninstalled before you attempt to reinstall BAM.

► **Uninstall BAM Server:**

1. Stop JBoss BAM Server.
2. Undeploy the BAM Server EAR file by removing Lava_Adobe.ear from *[jboss bam root]/server/all/deploy* directory.
3. Remove the following files:
 - *[jboss bam root]/server/all/log/**
4. Delete all the files from the recovery log directory and logging directory that have names similar to the following patterns:
 - filestore*.dat
 - DEFAULTRECOVERYLOGGER_*
 - chkpoint*
5. Review the contents of the *[appserver root]\bin* folder and, if any *chkpoint** files exist, delete them.
6. Use your database management tools to drop the database tables that store the BAM Server metadata.
 - UNCOMMITTED_TID
 - ALLOCATED_UID
 - METADATA_OBJECTS

Alternatively, you may want to create a new BAM Server metadata database.

This section describes advanced tuning for LiveCycle Output ES2, LiveCycle Forms ES2, and LiveCycle PDF Generator ES2. This section should be completed only on a production system by an advanced application server administrator.

7.1 Configuring pool size for Output ES2 and Forms ES2

The current default value for PoolMax is 4. The actual value to set depends on the hardware configuration and the expected usage in your environment.

For optimal use, we recommend that the lower limit of PoolMax not be less than the number of CPUs that are available. The upper limit must be determined by the load pattern on your server. Generally, the upper limit should be set to twice the number of CPUs cores on your server.

► **To modify the existing PoolMax value:**

1. Using a text editor, edit the JBoss startup script.
2. Add the following properties for `ConvertPdf`:
 - `com.adobe.convertpdf.bmc.POOL_MAX=[new value]`
 - `com.adobe.convertpdf.bmc.MAXIMUM_REUSE_COUNT=5000`
 - `com.adobe.convertpdf.bmc.REPORT_TIMING_INFORMATION=true`
 - `com.adobe.convertpdf.bmc.CT_ALLOW_SYSTEM_FONTS=true`
3. Add the following properties for `XMLFM`:
 - `com.adobe.xmlform.bmc.POOL_MAX=[new value]`
 - `com.adobe.xmlform.bmc.MAXIMUM_REUSE_COUNT=5000`
 - `com.adobe.xmlform.bmc.REPORT_TIMING_INFORMATION=true`
 - `com.adobe.xmlform.bmc.CT_ALLOW_SYSTEM_FONTS=true`

7.2 LiveCycle PDF Generator ES2

LiveCycle PDF Generator ES2 is capable of doing multiple PDF conversions simultaneously for some types of input files. This is enforced through the use of stateless session beans.

7.2.1 Configuring EJB Pool Size

Four different stateless session beans exist for enforcing independent pool sizes for the following types of input files:

- Adobe PostScript® and Encapsulated PostScript (EPS) files
- Image files, such as BMP, TIFF, PNG, and JPEG files
- OpenOffice files

- All other file types (except HTML files), such as Microsoft Office, Photoshop®, PageMaker®, and FrameMaker® files

The pool size for HTML-to-PDF conversions is not managed through the use of stateless session beans.

The default pool size for PostScript and EPS files and for image files is set to 3, and the default pool size for OpenOffice and other file types (except HTML) is set to 1.

You can configure the PS/EPS and image pool size to a different value based on your server hardware configuration, such as the number of CPUs, the number of cores within each CPU, and so on. However, it is mandatory that the pool size for the OpenOffice and other file types be left unchanged at 1 for proper functioning of PDF Generator ES2.

This section describes how the pool size for PS2PDF and Image2PDF can be configured for each of the supported application servers.

The text that follows assumes that the following two LiveCycle ES2 application EARs are deployed on the application server:

- adobe-livecycle-jboss.ear
- adobe-livecycle-native-jboss-[platform].ear

where [platform] should be replaced with one of the following strings, depending on your operating system:

- (Windows) x86_win32
- (Linux) x86_linux
- (SunOS™) sparc_sunos

► **To configure the pool size for PS2PDF and Image2PDF:**

Refer to *Distiller service settings* and *Generate PDF service settings* under “Managing services” in the [LiveCycle ES2 Administration Help](#).

7.3 LiveCycle Content Services ES2

Content Services ES2 uses Alfresco as the content repository. In a JBoss 4.2.x deployment, you must modify the hibernate bytecode provider value in the persistence.properties file. The cglib code generation library is more optimized than javassist and is available as part of the JBoss installation in the [appserver root]\server\all\lib directory. Detailed information about this requirement is documented on the [Alfresco Developers wiki](#).

► **Modify the hibernate bytecode provider:**

1. Locate the persistence.properties file in the following location and open it in an editor:

[appserver root]/server/all/deploy/ejb3.deployer/META-INF

2. Locate the line `hibernate.bytecode.provider` and change the value to `cglib`.
3. Save and close the file.

7.4 Enabling CIFS on Windows

You will need to manually configure the Windows Server 2003 and 2008 machines that host LiveCycle ES2. When you enable CIFS support in Alfresco, users can access the Content Services ES2 repository as a network folder and perform various file operations as on their local file system. In LiveCycle Content Services ES2, CIFS is supported for enterprise domain users with ActiveDirectory as their directory provider.

Note: Ensure that the server has a static IP address.

On Windows machines, you need to do the following:

- [“Enable NetBIOS over TCP/IP” on page 85](#)
- [“Add additional IP addresses” on page 85](#)
- [“Disable SMB over NetBIOS registry \(Windows 2003 only\)” on page 85](#)
- [“Disable File and Printer Sharing \(Windows 2008 only\)” on page 86](#)

7.4.1 Enable NetBIOS over TCP/IP

You need to enable NetBIOS over TCP/IP so that clients connecting to the LiveCycle ES2 server can have their requests resolved for the server host name.

1. In the **Local Area Connection Properties** dialog box, on the **General** tab, select **Internet Protocol**, and then click **Properties**.
2. In the **General** tab of the **Internet Protocol (TCP/IP) Properties** dialog box, ensure that the server has a static IP address. Click **Advanced**.
3. In the **Advanced TCP/IP Settings** dialog box, select the **WINS** tab and select **Enable NetBIOS over TCP/IP**.

7.4.2 Add additional IP addresses

1. In the **Local Area Connection Properties** dialog box, on the **General** tab, select **Internet Protocol**, and then click **Properties**.
2. In the **General** tab of the **Internet Protocol (TCP/IP) Properties** dialog box, ensure that the server has a static IP address. Click **Advanced**.
3. In the **Advanced TCP/IP Settings** dialog box, select the **IP Settings** tab and click **Add**.
4. Specify a static IP address and click **Add**.

7.4.3 Disable SMB over NetBIOS registry (Windows 2003 only)

You must disable SMB over NetBIOS by editing the Windows registry.

1. In the Windows Registry Editor, navigate to **HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services > NetBT > Parameters**.
2. Set the DWORD **SMBDeviceEnabled** to 0. If it is not present, add a new DWORD value with name **SMBDeviceEnabled** and set it to 0.

7.4.4 Disable File and Printer Sharing (Windows 2008 only)

- Go to **Network Settings**, deselect **File and Printer Sharing for Microsoft Clients**, and click **Apply**.

8

Troubleshooting

For information about troubleshooting your LiveCycle ES2 installation and configuration, see the [Troubleshooting LiveCycle ES2](#) guide.

A

Appendix - Install Command Line Interface

LiveCycle ES2 provides a command line interface (CLI) for the installation program. The CLI is intended to be used by advanced users of LiveCycle ES2 or in server environments which do not support the use of the Graphical User Interface (GUI) of the installation program. The CLI runs in console mode with one interactive session for all install operations.

Before you install the modules using the CLI install option, ensure the following:

- Your environment includes the software and hardware required to run LiveCycle ES2.
- You have prepared the environment as required. (See [Preparing to Install LiveCycle ES2 \(Single Server\)](#).)
- You have reviewed the first page of ["Installing the product files" on page 13](#) and the ["Installing the LiveCycle ES2 Modules" on page 12](#) section.

This appendix covers the following topics:

- ["Installing LiveCycle ES2" on page 88](#)
- ["Error logs" on page 90](#)
- ["Uninstalling LiveCycle ES2 in console mode" on page 90](#)
- ["Next steps" on page 91](#)

A.1 Installing LiveCycle ES2

This section covers the initial installation of LiveCycle ES2. For information about configuration and deployment, see ["Configuring LiveCycle ES2 for Deployment" on page 17](#) or ["Appendix - LCM Command Line Interface" on page 92](#).

Note: To avoid permission issues during the deployment, ensure that you are logged in as the user who will run the application server process when you run the LiveCycle ES2 install CLI and LiveCycle Configuration Manager.

After you start the installation process, follow the on-screen instructions to choose your installation options. Respond to each prompt to proceed to the next step in the installation. If you want to change a choice that you made on a previous step, type `back`. You can cancel the installation at any time by typing `quit`.

► To install LiveCycle ES2:

1. Open a command prompt and navigate to the folder in the installation media or your hard disk that contains the installer executable:
 - (Windows) `livecycle_server\9.0\Disk1\InstData\Windows\VM`
 - (Windows 64-bit) `livecycle_server\9.0\Disk1\InstData\Windows_64bit\VM`
 - (Linux) `livecycle_server/9.0/Disk1/InstData/Linux/NoVM`
 - (Solaris) `livecycle_server/9.0/Disk1/InstData/Solaris/NoVM`
2. Open a command prompt and run the following command:
 - (Windows) `install.exe -i console`

- (Linux, Solaris) `./install.bin -i console`

Note: Entering the command without the `-i console` option launches the GUI-based installer.

3. Respond to the prompts as described in the following table:

| Prompt | Description |
|--|--|
| Choose Locale | Select the locale for the installation to use by entering a value between 1 and 3. You can select the default value by pressing Enter . The options are Deutsch, English, and Français. English is the default language. |
| Choose Install Folder | On the Destination screen, press Enter to accept the default directory or type the new installation directory location. Default install folders are: (Windows): C:\Adobe\Adobe LiveCycle ES2 (Linux, Solaris): /opt/adobe/adobe_lifecycle_es2 Note: Do not use accented characters in the directory name. Otherwise, the CLI will ignore the accents and create a directory after modifying the accented characters. |
| Choose Operating System | (Windows only) Select the operating system that you want to install LiveCycle ES2 to. The options are Windows, and Linux, Solaris. Windows (Local) is the default. Select a different target operating system so that you can use the installation on Windows as the staging platform to deploy LiveCycle ES2 on to another operating system. |
| LiveCycle ES2 Server License Agreement | Press Enter to read through the pages of the license agreement. If you agree to the agreement, type <code>Y</code> and press Enter . |
| Pre-Installation Summary | Review the installation choices you have made and press Enter to continue installation with the choices you have made. Type <code>back</code> to go back to previous steps and change any of the settings. |
| Ready To Install | Installer displays the installation directory. Press Enter to start the installation process. During the installation process, the progress bar advances to indicate the progress of installation. Type <code>back</code> if you want to change the settings, or <code>quit</code> to close the installation. |
| Installing | The progress of the installation process is indicated. |

| Prompt | Description |
|---------------------------------|--|
| LiveCycle Configuration Manager | Press Enter to complete the installation of LiveCycle ES2. You can run the LiveCycle Configuration Manager by invoking the following script: (Windows): C:\Adobe\Adobe Livecycle ES2\configurationManager\bin\ConfigurationManager.bat (Linux, Solaris): /opt/adobe/adobe_livecycle_es2/configurationManager/bin/ConfigurationManager.sh |
| Installation Complete | The installation completion screen displays the status and the location of install. Press Enter to exit the installer. To correctly uninstall Adobe LiveCycle ES2, you should run the uninstaller from the command line, using the <code>-i console</code> flag. |

A.2 Error logs

If an error occurs, you can review the `Adobe_LiveCycle_ES2_InstallLog.log` in the log directory of your installation:

- (Windows) `C:\Adobe\Adobe LiveCycle ES2\log`
- (Linux, Solaris) `/opt/adobe/adobe_livecycle_es2/log`

For information about errors that may occur during the installation, see the appropriate troubleshooting guide.

A.3 Uninstalling LiveCycle ES2 in console mode

If you had installed LiveCycle using the command line option, you can uninstall Adobe LiveCycle ES2 only by running the uninstaller from the command line. If you want a silent uninstallation, omit the “-i console” flag.

Do the following:

1. Open a command prompt, and navigate to the directory which contains the uninstall script:

Note: On UNIX systems, you should manually navigate to the directory that contains the uninstall script because the directory name contains spaces.

- (Windows) `cd C:\Adobe\Adobe LiveCycle ES2\Uninstall_Adobe LiveCycle ES2`
- (Linux, Solaris)
`cd /opt/adobe/adobe_livecycle_es2/Uninstall_Adobe LiveCycle ES2`

2. Type the following command at the prompt and press Enter:

- (Windows) `Uninstall Adobe LiveCycle ES2.exe -i console`
- (Linux, Solaris) `./Uninstall Adobe LiveCycle ES2 -i console`

Note: If you typed the uninstall command without the `-i console` option, uninstallation is completed silently.

3. Follow the on-screen instructions.

| Prompt | Description |
|--------------------------------------|---|
| Uninstall Adobe LiveCycle ES2 | Press Enter to continue uninstallation. Enter quit to close the uninstall program. After you start the uninstall program, type back to go back to the previous step and make any changes. |
| Uninstalling.. Uninstall Complete | After the uninstallation starts, the rest of the uninstallation process is completed and the cursor returns to the prompt. Note that some items may not be removed. Also, any folder created after installing LiveCycle ES2 are not removed. You must remove these files and folders manually. |

A.4 Next steps

You must now configure LiveCycle ES2 for deployment. (See [“Configuring LiveCycle ES2 for Deployment” on page 17](#) or [“Appendix - LCM Command Line Interface” on page 92](#).)

LiveCycle ES2 provides a Command Line Interface (CLI) for the LiveCycle Configuration Manager. The CLI is intended to be used by advanced users of LiveCycle ES2, for example in server environments which do not support the use of the Graphical User Interface (GUI) of the LiveCycle Configuration Manager. This chapter describes how to use the CLI to configure LiveCycle ES2.

- ["Order of operations" on page 92](#)
- ["Command Line Interface property file" on page 93](#)
- ["Examples Usage" on page 101](#)
- ["Error Logs" on page 102](#)

B.1 Order of operations

The LiveCycle Configuration Manager CLI must follow the same order of operations as the GUI version of the LiveCycle Configuration Manager. Ensure that you use the CLI operations in this order:

1. Configure LiveCycle ES2.
2. Validate application server topology.
3. Validate the database connectivity.
4. Validate the application server configurations.
5. Deploy LiveCycle ES2.
6. Initialize LiveCycle ES2.
7. Initialize Business Activity Monitoring ES2.
8. Validate the LiveCycle ES2 server.
9. Deploy the LiveCycle ES2 modules.
10. Deploy the 7.x compatibility layer with the LiveCycle ES2 modules.
11. Validate the LiveCycle ES2 module deployment.
12. Check system readiness for PDF Generator ES2.
13. Add administrator user for PDF Generator ES2.
14. Configure LiveCycle ES2 Connector for IBM Content Manager.
15. Configure LiveCycle ES2 Connector for IBM FileNet.
16. Configure LiveCycle ES2 Connector for EMC Documentum.
17. Test all LiveCycle ES2 Connectors for ECM configurations.

18. Configure Content Services ES2.

Caution: You must restart your JBoss Application Server after you complete your LiveCycle Configuration Manager CLI operations.

B.2 Command Line Interface property file

The LiveCycle Configuration Manager CLI requires a property file containing the defined properties for your LiveCycle environment. The template for the properties file, `cli_propertyFile_template.txt`, is located in the `[LiveCycleES2 root]/configurationManager/bin` folder. You must create a copy of this file and edit the values. You can customize this file based on the LiveCycle Configuration Manager operations you intend to use. The following section describes the properties and values required.

You should create the property file according to your installation. Use one of the following methods.

- Create a property file and populate the values according to your installation and configuration scenarios.
- Copy the property file `cli_propertyFile_template.txt` to use it as a template and edit the values based on the LiveCycle Configuration Manager operations you intend to use.
- Use the GUI of the LiveCycle Configuration Manager and then use the property file created by the GUI version as the CLI version property file. When you run the `[LiveCycleES2 root]/configurationManager/bin/configurationManager.bat` file, the `userValuesForCLI.properties` file is created in the `[LiveCycleES2 root]/configurationManager/config` directory. You can use this file as input for the LiveCycle Configuration Manager CLI.

Note: In the CLI properties file, you must use the escape character (`\`) for Windows paths directory separator (`\`). For example, if the Fonts folder to be mentioned is `C:\Windows\Fonts`, in the LiveCycle Configuration Manager CLI script, you should enter it as `C:\\Windows\\Fonts`.

B.2.1 Common properties

The common properties are as follows:

LiveCycle Server specific properties: Required for the Initialize LiveCycle and Deploy LiveCycle Components operations.

These properties are required for the following operations:

- Initialize LiveCycle ES2
- Deploy LiveCycle ES2 components.

| Property | Values | Description |
|---|---------|--|
| <i>LiveCycle Server specific properties</i> | | |
| LCHost | String | The hostname of the server where LiveCycle ES2 will be deployed. |
| LCPort | Integer | The web port number where LiveCycle ES2 will be deployed. |

| Property | Values | Description |
|----------------------------|--|---|
| excludedSolutionComponents | String. Values include: ALC-LFS-Forms, ALC-LFS-BusinessActivityMonitoring, ALC-LFS-ConnectorEMCDocumentum, ALC-LFS-ConnectorIBMFileNet, ALC-LFS-ConnectorIBMContentManager, ALC-LFS-ContentServices, ALC-LFS-DigitalSignatures, ALC-LFS-DataCapture, ALC-LFS-Output, ALC-LFS-PDFGenerator, ALC-LFS-PDFGenerator3D, ALC-LFS-ProcessManagement, ALC-LFS-ReaderExtensions, ALC-LFS-RightsManagement | (Optional) List the LiveCycle ES2 modules you do not want to configure. Specify the excluded modules in a comma separated list. |

B.2.2 Configure LiveCycle properties

These properties only apply to the configure LiveCycle operation.

| Property | Values | Description |
|------------------|--------|---|
| AdobeFontsDir | String | Location of the Adobe server fonts directory. This path must be accessible from the server being deployed to. |
| customerFontsDir | String | Location of the customer fonts directory. This path must be accessible from the server being deployed to. |
| systemFontsDir | String | Location of the system fonts directory. Multiple System fonts locations can be entered using a semicolon as separator. These paths must be accessible from the server being deployed to. |

| Property | Values | Description |
|----------------------------------|------------------------------------|--|
| LCTempDir | String | Location of the temporary directory. This path must be accessible from the server being deployed to. |
| LCGlobalDocStorageDir | String | The global document storage root directory. Specify a path to an NFS shared directory used to store long-lived documents and to share them among all cluster nodes. Specify this property only when deploying LiveCycle ES2 components in a clustered environment. This path must be accessible from the server being deployed to. |
| EnableDocumentDBStorage | true or false Default: false | Enables or disables document storage in database for persistent documents. Even if you enable document storage in database, you will need the file system directory for GDS. |
| enableFIPS | true or false Default: false | Enabling the Federal Information Processing Standards (FIPS) option restricts data protection to FIPS 140-2 approved algorithms using the RSA BSAFE Crypto-J 3.5.2 encryption module with FIPS 140-2 validation certificate #590. Set this value to true only if you require FIPS to be enforced. |
| <i>Content Services ES2 only</i> | | |
| contentServices.rootDir | String | <i>[Adobe LiveCycle Content Services ES2 only]</i> Specify the root directory used by Content Services ES2. If the LiveCycle is in clustered environment, this directory must be a location shared by all nodes in a cluster with the same path across all nodes. |

| Property | Values | Description |
|--------------------------------------|---|--|
| contentServices.topology | String. Specify either SERVER or CLUSTER. Default: SERVER | [Adobe LiveCycle Content Services ES2 only] SERVER for single node, CLUSTER for a cluster configuration. |
| contentServices.cifs.enable | true or false Default: false | [Adobe LiveCycle Content Services ES2 only] Enables or disables CIFS. |
| contentServices.cifs.servername | String | [Adobe LiveCycle Content Services ES2 only] Server name of the CIFS server. |
| contentServices.cifs.implementation | String. Specify one of the following: <ul style="list-style-type: none"> • NetBIOS • PureJava | [Adobe LiveCycle Content Services ES2 only] Specifies how Content Services ES2 connects to the CIFS server. |
| contentServices.cifs.dllpath | String. Specify the path from where the NetBIOS DLL will be copied. | [Adobe LiveCycle Content Services ES2 only] Path where NetBios DLL will be copied. Required if "contentServices.cifs.implementation=NetBIOS". This path must be present in the environment. |
| contentServices.cifs.alternateIP | Numeric | [Adobe LiveCycle Content Services ES2 only] Alternate IP Address of the CIFS Server. It should be static IP and it is required field if "contentServices.cifs.implementation=PureJava". |
| contentServices.cifs.WinsOrBroadcast | String. Specify one of the following: <ul style="list-style-type: none"> • winsServer • broadcast | [Adobe LiveCycle Content Services ES2 only] DNS discovery method. It can be "winsServer" or "broadcast" and it is required field if "contentServices.cifs.implementation=PureJava". |
| contentServices.cifs.winsPrmIP | Numeric | [Adobe LiveCycle Content Services ES2 only] Primary WINS Server IP address. It can be obtained from ipconfig /all command. It is required field if "contentServices.cifs.implementation=PureJava" and "contentServices.cifs.WinsOrBroadcast=winsServer". |

| Property | Values | Description |
|--------------------------------|---------|---|
| contentServices.cifs.winsSecIP | Numeric | [Adobe LiveCycle Content Services ES2 only] Secondary WINS Server IP address. It can be obtained from ipconfig /all command. It is required field if "contentServices.cifs.implementation=PureJava" and "contentServices.cifs.WinsOrBroadcast=winsServer". |
| contentServices.cifs.brdCastIP | Numeric | [Adobe LiveCycle Content Services ES2 only] Broadcast IP address. It is required field if "contentServices.cifs.implementation=PureJava" and "contentServices.cifs.WinsOrBroadcast=broadcast". |
| contentServices.dbType | String | [Adobe LiveCycle Content Services ES2 only] Content Services database type. |

B.2.3 Configure Application Server properties

If you are installing LiveCycle ES2 with a JBoss application server, you must manually configure JBoss, use the Adobe preconfigured JBoss provided on the LiveCycle ES2 DVD, or use the JBoss turnkey option.

| Property | Values | Description |
|---------------------------------|--|--|
| jvm.initialHeapSize | Default: 512 | The initial heap size, in MB, for the JVM. |
| jvm.maxHeapSize | Default: 1792 | The maximum heap size, in MB, for the JVM. |
| <i>Datasource configuration</i> | | |
| datasource.dbType | Choose: <ul style="list-style-type: none"> • oracle • mysql • sqlserver | The type of database configured to use with LiveCycle ES2. |
| datasource.dbName | String | The name of the database. |
| datasource.dbHost | String | The host name or IP address of the server where the database is located. |

| Property | Values | Description |
|------------------------------|---------|---|
| datasource.dbPort | Integer | The database port LiveCycle ES2 will use when communicating with the database. |
| datasource.dbUser | String | The user ID LiveCycle ES2 will use when accessing the database. |
| datasource.dbPassword | String | The password associated with the database user ID. |
| datasource.target.driverPath | String | JDBC driver in the application server lib directory. This path must be valid and accessible from the server being configured. |
| datasource.local.driverPath | String | Local JDBC driver. This value is used for testing direct database connection. |

B.2.4 Deploy LiveCycle properties

These properties only apply to the deploy LiveCycle ES2 operation.

| Property | Values | Description |
|---|--------|-------------|
| You must configure the LiveCycle Server Information section. For more information, see "Common properties" on page 93 . | | |

B.2.5 Initialize LiveCycle properties

These properties only apply to the initialize LiveCycle ES2 operation.

| Property | Values | Description |
|---|--------|-------------|
| You must configure the LiveCycle Server Information section. For more information, see "Common properties" on page 93 . | | |

B.2.6 Initialize BAM properties

These properties only apply to the initialize BAM operation.

Note: Business Activity Monitoring ES2 is an optional component with LiveCycle ES2.

| Property | Values | Description |
|----------|--------|---|
| BAMHost | String | The hostname of the server where BAM is deployed and running. |

| Property | Values | Description |
|------------------|---|--|
| BAMPort | Integer | The port number the BAM server is using to listen for requests. |
| BAMAdminUserID | String | The BAM administrator user ID to use when connecting to the BAM server. |
| BAMAdminPassword | String | The BAM administrator password to use when connecting to the BAM server. |
| databaseType | Choose: <ul style="list-style-type: none"> ● oracle ● mysql ● db2 ● sqlserver | The type of database LiveCycle is using to capture BAM data. |

B.2.7 Deploy LiveCycle Components properties

These properties apply to the following operations:

- Deploy LiveCycle Components
- Validate LiveCycle Component Deployment
- Validate LiveCycle Server.

| Property | Values | Description |
|---|--------|--|
| <i>You must configure the LiveCycle Server Information section. For more information, see "Common properties" on page 93.</i> | | |
| LCAdminUserID | String | The user ID to assign to the LiveCycle Administrator user. This User ID is used to login to the LiveCycle Administrator Console. |
| LCAdminPassword | String | The password to assign to the LiveCycle Administrator user. This password is used to login to the LiveCycle Administrator Console. |

B.2.8 Command Line Interface Usage

Once you have configured your property file, you must navigate to the `[LiveCycleES2 root]/configurationManager/bin` folder.

To view a complete description of the LiveCycle Configuration Manager CLI commands, type:
`ConfigurationManagerCLI help <command name>`.

B.2.8.1 Configure LiveCycle CLI Usage

The Configure LiveCycle operation requires the following syntax:

```
configureLiveCycle -f <propertyFile>
```

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see ["Command Line Interface property file" on page 93](#).

B.2.8.2 Deploy LiveCycle CLI Usage

The Deploy LiveCycle operation requires the following syntax:

```
deployLiveCycle -f <propertyFile>
```

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see ["Command Line Interface property file" on page 93](#).

B.2.8.3 Initialize LiveCycle CLI Usage

The initialize LiveCycle operation requires the following syntax:

```
initializeLiveCycle -f <propertyFile>
```

Where:

- -f <propertyFile>: A property file containing the required arguments. For instructions on creating a property file, see ["Command Line Interface property file" on page 93](#).

B.2.8.4 Initialize Business Activity Monitoring CLI Usage

The initialize Business Activity Monitoring operation requires the following syntax:

```
initializeBAM -f <propertyFile>
```

Where:

- -f <propertyFile>: A property file containing the required arguments. For instructions on creating a property file, see ["Command Line Interface property file" on page 93](#).

B.2.8.5 Deploy LiveCycle Components CLI Usage

The Deploy LiveCycle Components operation requires the following syntax:

```
deployLiveCycleComponents -f <propertyFile> -targetServer_AdminPassword <password>
```

Where:

- -f <propertyFile>: A property file containing the required arguments. For instructions on creating a property file, see ["Command Line Interface property file" on page 93](#).

- `-targetServer_AdminPassword <password>`: Allows you to set the Admin password on the command line. If this argument is present, it will override the `targetServer.adminPassword` property in the property file.

B.2.8.6 Validate database connectivity CLI Usage

The validate Database Connectivity operation is optional and requires the following syntax:

```
validateDBConnectivity -f <propertyFile> -datasource_dbPasssword <password>
```

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For instructions on creating a property file, see ["Command Line Interface property file" on page 93](#).
- `-datasource_dbPasssword <password>`: Allows you to set the database user password on the command line. If this argument is present, it will override the `datasource.dbPasssword` property in the property file.

B.2.8.7 Validate LiveCycle Server CLI Usage

The Validate LiveCycle Server operation is optional and requires the following syntax:

```
validateLiveCycleServer -f <propertyFile> -targetServer_AdminPassword <password>
```

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For instructions on creating a property file, see ["Command Line Interface property file" on page 93](#).
- `-targetServer_AdminPassword <password>`: Allows you to set the Admin password on the command line. If this argument is present, it will override the `targetServer.adminPassword` property in the property file.

B.2.8.8 Validate LiveCycle Component Deployment CLI Usage

The Validate LiveCycle Component Deployment operation is optional and requires the following syntax:

```
validateLiveCycleComponentDeployment -f <propertyFile> -targetServer_AdminPassword <password>
```

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For instructions on creating a property file, see ["Command Line Interface property file" on page 93](#).
- `-targetServer_AdminPassword <password>`: Allows you to set the Admin password on the command line. If this argument is present, it will override the `targetServer.adminPassword` property in the property file.

B.3 Examples Usage

From the `C:\Adobe\Adobe LiveCycle ES2\configurationManager\bin`, type:

```
ConfigurationManagerCLI configureLiveCycle -f cli_propertyFile.txt
```

Where `cli_propertyFile.txt` is the name of the property file you created.

B.4 Error Logs

If an error occurs, you can review the CLI Error logs located here in the `[LiveCycleES2 root]\configurationManager\log` folder. The log file generated will have a naming convention such as `lcmCLI.0.log` where the number in the filename (0) will increment when the log files are rolled over.

B.5 Next steps

If you used LiveCycle Configuration Manager CLI to configure and deploy LiveCycle ES2, you can now do the following tasks:

- Verify the deployment. (See [“Setting watched folder performance parameters” on page 43.](#))
- Access LiveCycle Administration Console. (See [“Accessing LiveCycle Administration Console” on page 31.](#))
- Configure LiveCycle modules to access LDAP. (See [“Configuring LiveCycle ES2 to access LDAP” on page 44.](#))
- Uninstall LiveCycle ES2. (See [“Uninstalling LiveCycle ES2” on page 61.](#))

This appendix describes how you can configure the JBoss application server to run as a Windows service using the JBoss Web Native Connectors. Use this procedure on Windows Server 2003 or 2008, both 32- and 64-bit versions.

C.1 Download the Web Native Connector

1. Download the JBoss Web Native Connector for Windows from the *JBoss Web Native Connectors - Current packages* download page. Depending upon your Windows version, download either of the following files:

- (64-bit): <http://labs.jboss.com/file-access/default/members/jbossweb/freezezone/dist/2.0.8.GA/jboss-native-2.0.8-windows-x64-ssl.zip>
- (32-bit): <http://labs.jboss.com/file-access/default/members/jbossweb/freezezone/dist/2.0.8.GA/jboss-native-2.0.8-windows-x86-ssl.zip>

2. Extract the ZIP file and copy all contents of the `\bin` folder (except the `\native` folder) to the `\bin` folder of your JBoss installation folder.

3. Open the `service.bat` file in a text editor and update the variables.

You should update the variables for Service Name (SVCNAME), Service Display (SVCDISP) and Service Description (SVCDESC) with values that reflect your JBoss environment. For example, if your JBoss version is 4.2.1, enter the following:

```
set SVCNAME=JBAS42SVC
set SVCDISP=JBossAS 4.2 for Adobe LiveCycle ES2
set SVCDESC=JBoss Application Server Community Edition 4.2.1 GA/
Platform: Windows x64
```

4. In the `:cmdStart` section, locate and edit the `call run.bat` line to add the configuration name (*all* in this example) and bind IP address (0.0.0.0 for binding to all IP addresses of the server) such as follows:

```
call run.bat -c all -b 0.0.0.0 < .r.lock >> run.log 2>&1
```

5. Repeat the edits in step 4 for the `:cmdRestart` section:

```
call run.bat -c all -b 0.0.0.0 < .r.lock >> run.log 2>&1
```

6. Save and close the file.

C.2 Install the Windows service

1. From the `\bin` folder of JBoss, create the Windows service using the following command:

```
service.bat install
```

If the command is successful, you will get a response such as:

```
Service JBossAS 4.2 for Adobe LiveCycle ES2 installed
```

2. Check the Services applet in Windows Control Panel for a new service listed as *JBossAS 4.2 for Adobe LiveCycle ES2* which is the value of the `SVCDISP` variable in the `service.bat` file.
3. Using the Services applet in Windows Control Panel, set the *Startup type* to `Automatic`.
4. (Optional) In the *Recovery* tab, set the *First failure* and *Second failure* recovery options such as *Restart the Service* and *Restart the Computer* respectively.

Note: If necessary, you can change the *Logon as* value from the default *Local System* account to another user or service account.

C.3 Verify the installation

1. Start the service from the Services applet in Windows Control Panel.
2. Watch (tail) the `server.log` file to make sure that the service starts successfully.
3. Shutdown the service from the Services applet in Windows Control Panel and verify that it is shut down successfully.
4. Make sure that you are able to restart the service from the Services applet in Windows Control Panel.

C.4 Additional configuration

In addition to these steps, you can also perform additional configuration steps using either the Services applet in Windows Control Panel or by using the built-in Windows Service Configuration utility (`sc`).

For example, if you have a Microsoft SQL Server as the database, and the database service runs on the same machine instance, you can create a dependency on that service with the following command:

```
sc config JBAS42SVC depend= MSSQL$MYSERVER
```

Update the `MSSQL$MYSERVER` variable with service name of the Microsoft SQL Server 2005 service running on the same server instance.

Note: Ensure that there is NO space before the `=` sign but after the `=` sign.

If the command is successful, you will get a response such as follows:

```
[SC] ChangeServiceConfig SUCCESS
```

C.5 Start and stop JBoss Application Server as a Windows service

► To start JBoss as a Windows service:

1. On the Windows server, select **Start > Control Panel > Administrative Tools > Services**, then select the Windows service for JBoss Application Server and click **Start**.

Note: When starting JBoss Application Server as a Windows service, the console output is redirected to the file `run.log`. You can inspect the file to discover any errors that occur during service startup.

► **To stop JBoss as a Windows service:**

1. On the Windows server, select **Start > Control Panel > Administrative Tools > Services**, then select the Windows service for JBoss Application Server and click **Stop**.

Note: When stopping JBoss Application Server as a Windows service, the console output is redirected to the file `run.log`. You can inspect the file to discover any errors that occur during service shutdown.

D

Appendix - Configuring the LiveCycle ES2 Connector on the SharePoint Server

D.1 Introduction

The Adobe® LiveCycle® ES2 Connector for Microsoft® SharePoint® allows you to integrate workflows from both the LiveCycle ES2 and the SharePoint development perspectives. This module includes a LiveCycle ES2 service and a sample SharePoint feature that facilitates end-to-end connection between the two systems.

The LiveCycle ES2 service provides search, read, write, delete, update, and check in/out capabilities with a SharePoint repository. SharePoint users can initiate LiveCycle ES2 processes such as an approval process from within SharePoint, convert documents to Adobe PDF, and manage the rights on a file in PDF or native formats. In addition, from within the SharePoint context, you can automate running LiveCycle ES2 processes from within SharePoint workflows.

D.2 Installation and configuration overview

After you configured the LiveCycle ES2 installation, carry out the following steps to configure the connector on the SharePoint server. These processes involve the following steps:

1. Copying the SharePoint Connector web part installer to the SharePoint server.

Copy the SharePoint web part installer file named `Adobe LiveCycle Connector.zip` from the `[LiveCycleES2 root]\plugins\sharepoint` folder to a folder in your SharePoint server and extract the ZIP file.

2. Installing the LiveCycle ES2 feature in the SharePoint server.

Edit the `install.bat` file to change the installation parameters relevant to your SharePoint server and then run the batch file to install the LiveCycle ES2 features on the SharePoint server. See the following sections:

- [“Extract the web part installer” on page 107](#)
- [“Edit the batch file” on page 107](#)
- [“Run the batch file” on page 108](#)

3. Adding the LiveCycle ES2 feature configuration information to the SharePoint site configuration file on the SharePoint server. See the following sections:

- [“Copy the Service Model configuration to the IIS Web Application folder” on page 108](#)

4. Configuring LiveCycle ES2 features on the SharePoint site. See the following sections:

- [“LiveCycle ES2 settings on the SharePoint site” on page 109](#)

5. Configuring LiveCycle ES2 workflows on the SharePoint site. See [“Configuring LiveCycle ES2 workflows on the SharePoint site” on page 111](#)

In addition, you can also configure enterprise domain users to synchronize users from other enterprise systems. See ["Configuring enterprise domain users" on page 113](#).

D.2.1 System requirements for the SharePoint server

Ensure that your server that runs the SharePoint site meets the following requirements:

- Microsoft SharePoint Server 2007
- Microsoft .NET Framework 3.5

D.2.2 Installation considerations

Keep in mind the following before you plan your installation:

- Installation of LiveCycle ES2 Connector for Microsoft SharePoint on the SharePoint Server requires stopping and restarting the Windows IIS Server. Before you run the installation, ensure that none of the services on the IIS Server is being used by other sites or web applications. Consult your IIS Administrator before you proceed with your installation.
- The SharePoint service must be running on the target system that you are installing the Connector.

D.3 Installation and configuration on the SharePoint server

This section contains the following topics:

- ["Extract the web part installer" on page 107](#)
- ["Edit the batch file" on page 107](#)
- ["Run the batch file" on page 108](#)
- ["Copy the Service Model configuration to the IIS Web Application folder" on page 108](#)

D.3.1 Extract the web part installer

When you installed the Quick Fix on the LiveCycle ES2 server, the web part installer for SharePoint server named `Adobe LiveCycle Connector.zip` was created in the `[LiveCycleES2 root]\plugins\sharepoint` folder. Copy this file to a folder on the Windows server that hosts SharePoint, and then extract the files.

D.3.2 Edit the batch file

The folder extracted from the web part installer contains a batch file named `Install.bat`. You must update this batch file with the file and folder paths relevant to your SharePoint server.

1. Open the `Install.bat` file in a text editor.
2. Locate the following lines in the file and change them:

```
@SET GACUTIL.exe="C:\Program Files\Microsoft SDKs\Windows\v6.0A\Bin\gacutil.exe"
@SET TEMPLATEDIR="c:\Program Files\Common Files\Microsoft Shared\web server extensions\12\TEMPLATE"
@SET WEBAPPPDIR="C:\inetpub\wwwroot\wss\VirtualDirectories\<port>"
```

```
@SET SITEURL="http://<SharePoint Server>:<port>/SiteDirectory/<site name>/"
```

```
@SET STSADM="C:\Program Files\Common Files\Microsoft Shared\  
web server extensions\12\bin\stsadm.exe"
```

- **GACUTILEXE:** Change the path to the folder where the GAC utility is located.
- **TEMPLATEDIR:** Change the template directory path of the IIS Server on your system.
- **WEBAPPPDIR:** Change the path of the WEBAPPPDIR of the IIS Server on your system if it differs from the default value included in the batch file.
- **SITEURL:** Change the URL of the SharePoint site on your system on which you want to activate the LiveCycle ES2 feature.
- **STSADM:** Change the path to the folder where the STSADM utility is located.

Note: The LiveCycle ES2 feature is installed on a web application on the SharePoint server. The LiveCycle ES2 feature will be activated only on the site that you have provided the site URL for. You can activate the LiveCycle ES2 feature for other SharePoint sites later from the Site Settings page of those sites. See *SharePoint Help* for more information.

3. Save and close the file.

D.3.3 Run the batch file

1. Navigate to the folder where the edited batch file is present, and then run the `Install.bat` file. Keep in mind that the SharePoint site will be unavailable for other services during the time the batch file runs.

When you run the batch file, the following occur:

- Registers the `AdobeLiveCycleConnector.dll` and `AdobeLiveCycleWorkflow.dll` files. These dynamic libraries integrate the LiveCycle ES2 features with the SharePoint server.
- Uninstalls any previously installed SharePoint connector.
- Copies the template files to the `WSS\TEMPLATE` directory.
- Copies the resource files to `WEBAPPPDIR\App_GlobalResources` directory.
- Installs and activates the LiveCycle ES2 features with web server extensions.
- Closes the installer and returns the prompt.

D.3.4 Copy the Service Model configuration to the IIS Web Application folder

You must copy the SharePoint Connector-specific configuration settings to the web application home directory of the IIS Server. This adds the LiveCycle ES2 feature to the web application.

1. Navigate to the `sharepoint-webpart` folder that was created when you extracted the LiveCycle ES2 feature installer.
2. Open the `AdobeLiveCycleConnector.dll.config` file in a text editor.
3. Copy the contents between `<system.serviceModel>` and `</system.serviceModel>` tags (including both the starting and ending tags), and then close the file.

4. Navigate to the web application home directory on the IIS Service on your computer that you specified in the batch file. Typically, the folder is
C:\Inetpub\wwwroot\wss\VirtualDirectories\- 5. Create a backup copy of the `web.config` file and then open the original file in a text editor.
- 6. Append the contents that you copied before the `</configuration>` tag.
- 7. Save and close the file.

D.3.5 LiveCycle ES2 settings on the SharePoint site

This section contains the following topics:

- [“LiveCycle ES2 Server Settings” on page 109](#)
- [“Generate PDF Settings” on page 109](#)
- [“Reader Extensions Settings” on page 110](#)
- [“Rights Management Settings” on page 111](#)

D.3.5.1 LiveCycle ES2 Server Settings

You should configure the LiveCycle ES2 Server settings on the SharePoint site so that users on the site can invoke LiveCycle ES2 processes from the SharePoint site.

1. Log in to the SharePoint site with the user name and password.
2. On the *Sites* page, click **Site Actions** > **Site Settings**.
3. On the *Site Settings* page, click **LiveCycle Settings** under Adobe LiveCycle ES2.
4. Enter the LiveCycle ES2 server parameters:
 - **Hostname and port number:** Enter the host name and the port of the machine that hosts LiveCycle ES2.
 - **User Name and Password:** Enter the user name and password of a LiveCycle ES2 user that will be used to invoke the LiveCycle ES2 feature from the SharePoint site. On the LiveCycle ES2 server, this user account must be configured with the Service User role.

For example, if you want to convert Microsoft Word documents to Adobe PDF documents from the SharePoint site, you must have a user account on the LiveCycle ES2 server with the rights to PDF Generator ES2 service. See [LiveCycle ES2 Administration Help](#) for more information about configuring services and user accounts on LiveCycle ES2.

D.3.5.2 Generate PDF Settings

You must specify the settings for generating PDF files from files that provide native application support for PDF Generator ES2. You can configure these settings even if PDF Generator ES2 is not available in the LiveCycle ES2 server. However, you can invoke the Convert to Adobe PDF operation only if PDF Generator ES2 is available on the LiveCycle ES2 server.

1. Under Generate PDF Settings, enter the following:

- **Configuration Settings:** Select one of the options:
 - *Use Custom Settings:* Select this option to configure custom settings for generating Adobe PDF documents.
 - *Upload Settings File:* Select this option if you have a PDF settings file (.JOBOPTIONS file) that contains the required PDF settings. If you choose this option, the rest of the Generate PDF configuration options are disabled.
- **File Type Settings:** Specify the settings to be applied to the generated PDF document.
- **Adobe PDF Settings:** Select the required PDF options that should be applied to the PDF files that are created by LiveCycle ES2.
- **Adobe PDF Settings:** Select the Adobe PDF settings (Job Options) from the list. This option is available only if you have chosen *Use Custom Settings* in Configuration Settings.
- **Security Settings:** Select the security settings for PDF.
- **Time Out:** Specify the maximum time the conversion takes to complete.
- **Settings Document:** Click **Choose File** to select the document that contains settings to be applied while generating the PDF document.
- **XMP Document:** Click **Choose File** to select the file that contains metadata information to be applied to the generated PDF document.

D.3.5.3 Reader Extensions Settings

You can specify the settings to use for applying Reader Extensions. You can configure these settings even if Reader Extensions ES2 is not available in the LiveCycle ES2 server. However, you can apply additional usage rights on PDF documents only if Reader Extensions ES2 is available on the LiveCycle ES2 server.

For more information about Reader Extensions ES2, see [Adobe LiveCycle Reader Extensions Help](#).

1. Under Reader Extensions Settings, enter the following settings:
 - **Credential Alias:** Select the alias of the credential to use to grant usage rights.
 - **Apply Usage Rights Option:** Select the run-time options to use while applying usage rights to the PDF document. Select all those apply:
 - *Basic Form Fill In:* Select this option and its sub-options to allow users to fill in and submit the completed form.
 - *Import and Export Form Data:* Select to allow users to import and export form data from Adobe PDF forms.
 - *Submit Outside Web Browser:* Select to allow users to submit filled-in forms using Adobe Reader.
 - *Database and Web Service Connectivity:* Select to permit the PDF document to be used as an online form.
 - *Add, Delete, and Change Form Fields:* Select to permit existing filled in form fields to be edited in the PDF document.
 - *Create Pages From Templates:* Select to allow users to create pages from form templates in the Adobe PDF documents.

- **2D Barcode Decoding:** Select to permit two-dimensional barcode decoding in the PDF document.
- **Digital Signatures:** Select to permit digital signatures to be added to the PDF document.
- **Commenting:** Select to permit offline commenting of the PDF document.
- **Embedded File Attachments:** Select to allow embedded attachments to the PDF document.
- **Draft Level:** Select to permit the user to save the PDF document as a draft copy.
- **Reader Message:** A message you type that represents the text displayed within Adobe Reader to inform users that the PDF document contains usage rights.
- **Select Default Protocol for BLOB:** Select the encoding protocol that SharePoint site will use to exchange files between the SharePoint repository and the LiveCycle ES2 server. Default is Base64 encoding.

D.3.5.4 Rights Management Settings

You can specify the settings to apply on files that are supported by Rights Management ES2. You can configure these even if Rights Management ES2 is not available in the LiveCycle ES2 server. However, you can apply policy settings only if Rights Management ES2 is available on the LiveCycle ES2 server.

The following file types are supported by Rights Management ES2:

- Adobe PDF documents (.PDF)
- Microsoft Office 2003 documents (.DOC, .XLS, .PPT)
- Microsoft Office 2007 documents (.DOCX, .XLSX, .PPTX)
- Dassault CATIA documents (AutoCAD files)

For more information about Rights Management ES2, see [Adobe LiveCycle Reader Extensions Help](#).

1. Under Apply Policy Settings, specify the following settings:
 - **Policy Set Name:** Select the policy set name from the list. The policy sets are defined in LiveCycle Administration Console.
 - **Policy Name:** Select the name of the policy.

D.4 Configuring LiveCycle ES2 workflows on the SharePoint site

LiveCycle ES2 Connector for Microsoft SharePoint allows you to directly integrate SharePoint workflow features to automatically initiate LiveCycle ES2 processes. You must configure the workflows that are enabled on the SharePoint site.

1. On the home page of your site, click **Shared Documents**.
2. On the *Shared Documents* page, select **Settings > Document Library Settings**.
3. On the *Customize Shared Documents* page, click **Workflow settings** under **Permissions and Management**.
4. On the *Change Workflow Settings: Shared Documents* page, click **Add a workflow** under *Workflows*.
5. On the *Add A Workflow: Shared Documents* page, select **AdobeLiveCycleWorkflow** from the *Select a workflow template* list.

6. Enter the required details and click **Next**. If you choose to create a new task list or history list, the task list or history list created is named by prefixing the name of the workflow you entered.
 7. On the *Invoke Adobe LiveCycle Action* page, do the following:
 - Select the LiveCycle ES2 action to be invoked by the SharePoint workflow. If you select *Invoke Adobe LiveCycle Process*, select the Adobe LiveCycle ES2 process to be invoked. You can select only the LiveCycle ES2 processes that have a document as an input from the list.
 - For all LiveCycle actions selected, specify the location where the result documents will be saved. By default, the result documents are saved in the same location as the source.
- Note:** If you want to select a custom location as the destination, select **Custom Location** and navigate to the required folder in the *CurrentSite* navigation tree.
8. Click **Submit**.

D.5 Performing file operations on the SharePoint site

After you install the LiveCycle ES2 features on your SharePoint site, you can invoke LiveCycle ES2 operations on files in the SharePoint repository. Keep in mind the following:

- The LiveCycle ES2 server must be running with the required services.
- The *Convert to Adobe PDF* option is available only for files that provide native application support for PDF Generator ES2. For this, PDF Generator ES2 must be installed in your LiveCycle ES2 server. In addition, the user account you specified in the SharePoint site must have rights to invoke this service on the LiveCycle ES2 server.
- The *Apply Adobe Reader Extensions* option is available for PDF documents only. For this option, LiveCycle Reader Extensions ES2 must be installed in your LiveCycle ES2 server. In addition, the SharePoint user account must have rights to invoke this service on the LiveCycle ES2 server.
- The *Protect Document* feature is available only for supported document types.

D.5.1 File operations

You can invoke the following file operations from SharePoint:

- **Convert to Adobe PDF** (*Available for file types that provide native application support for PDF Generator ES2 only*): Creates an Adobe PDF version of the document. By default, the result document is saved in the same location as the original document with the .PDF extension added to the existing file name. For example, if you are invoking the Generate PDF action on a Microsoft Word document named `sample.doc`, the PDF document generated will be named `sample.doc.pdf`.
- **Secure with Adobe Policy**: Applies the Rights Management ES2 policy to the document. For this option, Rights Management ES2 must be installed in your LiveCycle ES2 server. In addition, the user account you configured on the SharePoint site must have rights to invoke this service on the LiveCycle ES2 server.
- **Enable for Commenting by Adobe Reader**: Applies additional usage rights on the PDF document when used with Adobe Reader.
- **Invoke Adobe LiveCycle Process**: Lets you choose any LiveCycle ES2 process that is initiated with a document as the input.

If the LiveCycle ES2 process that is invoked is a long-lived process (such as submitting a PDF form for approval and further steps), there are no further indications on the SharePoint site. On the other hand,

if a short-lived process is invoked, the output document is saved in the location you specify. By default, the result document is saved in the same location as the original document.

D.6 Configuring enterprise domain users

You can configure LiveCycle ES2 to synchronize with an LDAP directory that is shared by the SharePoint server. This provides for authorizing enterprise domain users with differentiated access rights.

Note: You must restart the application server after installing and configuring the LiveCycle ES2 Connector for Microsoft SharePoint feature on LiveCycle ES2 server. This step is required for the LiveCycle ES2 server to recognize the MSSharePointAuthProvider service as a custom authorization provider.

1. Log in to LiveCycle Administration Console and click **Settings > User Management > Domain Management**.
2. Click **New Enterprise Domain**, and type the 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 ES2 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 [LiveCycle ES2 Administration Help](#).)

Note: When using MySQL for your LiveCycle ES2 database, use only single-byte (ASCII) characters for the ID. (See “Adding enterprise domains” in [LiveCycle ES2 Administration Help](#).)

3. Add a custom authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **Custom**.
 - Select **MSSharePointAuthProvider** and then click **OK**.
4. Add an LDAP authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **LDAP**, and then click **OK**.
5. 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.

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

7. 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.
8. Navigate to **Settings > User Management > Users and Groups**.
9. 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 ES2 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.

If you configure enterprise domain authorization provider using these steps, any processes invoked using process context from Workbench ES2 will use the context of the user invoking that process. See [Creating Processes Using Workbench ES2 Help](#) for more information.

D.7 LiveCycle ES2 service for SharePoint users

The SharePoint service can be used to connect to the SharePoint web applications configured with authentication type as Windows or Forms. For domain users, if Windows is the authentication type, you should do the following:

- Enable Basic Authentication in the Central Administration console of the SharePoint server. See *SharePoint Help* for more information.
- Specify the user name in the format `domain\user` in all SharePoint service operations.