

# **UPGRADING TO ADOBE EXPERIENCE MANAGER FORMS ON JEE FOR JBOSS TURNKEY**

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# Chapter 1: About This Document

## 1.1 What this document contains

This document explains how to upgrade to AEM forms on JEE from LiveCycle ES4 SP1 for Red Hat® JBoss® and MySQL by using the turnkey method. The turnkey method automatically installs, configures, and upgrades the product and is the recommended installation option for rapid evaluation, development, and small production deployments.

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

Ensure that you read [Preparing for Upgrading to AEM forms on JEE](#) before you perform the tasks described in this document. Although this document includes the steps required for a turnkey upgrade, [Preparing for Upgrading to AEM forms on JEE](#) helps you plan your upgrade.

## 1.2 Who should read this document?

This document is intended for users who are upgrading to AEM forms on JEE using turnkey deployment.

## 1.3 Conventions used in this document

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

Name	Default value	Description
[aem-forms root]	C:\Adobe\Adobe_Experience_Manager_forms	The installation directory that is used for all AEM forms modules. This directory contains subdirectories for Configuration Manager, SDK, and CRX repository.
[JBoss root]	C:\Adobe\Adobe_Experience_Manager_forms\jboss	The home directory of the application server that runs AEM forms on JEE.
[Adobe_JAVA_HOME]	C:\Adobe\Adobe_Experience_Manager_forms\Java\jdk1.7.0_25	The home directory of the Java JDK installed by the AEM forms on JEE turnkey install.

# Chapter 2: Upgrading to AEM forms(Turnkey)

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

Configuration Manager automatically performs most of the tasks required to upgrade a turnkey deployment to AEM forms on JEE on a JBoss Application Server and MySQL database running on Windows only.

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

## 2.1 How the AEM forms on JEE upgrade works

Upgrading to AEM forms on JEE involves the following major tasks, many of which are automated when you use the turnkey method of installation and deployment:

- 1 Manually backing up the existing data.
- 2 Installing AEM forms on JEE product files including new versions of the application server and database.
- 3 Configuring and deploying the EAR files.
- 4 Updating (patching) the services components that are part of AEM forms on JEE.
- 5 Manually upgrade existing CRX repository.

The installation program and Configuration Manager together perform most of the tasks. You are prompted for input throughout the process, as described by the steps in this document.

### Detailed outline of tasks performed in the turnkey upgrade process

If you originally installed a previous version of LiveCycle using the turnkey method, you can use the turnkey upgrade process to move to AEM forms on JEE. The turnkey installation and upgrade process performs the following tasks:

- Installs the AEM forms on JEE product files
- Installs a preconfigured JBoss 6.2.0 application server (with Apache Tomcat servlet container embedded)
- Installs a preconfigured version of MySQL 5.5 database server.
- Starts Configuration Manager
- **(Upgrading on the same machine running your existing LiveCycle instance)** Stops the appropriate JBoss for Adobe LiveCycle service
- **(Upgrading on the same machine running your existing LiveCycle instance)** Migrates contents of Global Document Storage (GDS) from the default location of your previous instance of LiveCycle to AEM forms on JEE default location.

**Note :** *If you changed the GDS location in the previous version of LiveCycle, you need to ensure that your AEM forms on JEE GDS location should be the same. If not the same, you must copy the contents of your previous GDS location manually to the AEM forms on JEE GDS location.*

- Configures and assembles the AEM forms on JEE EAR files
- **(Upgrading on the same machine running your existing LiveCycle instance)** Migrates MySQL data from your previous instance of MySQL installed with LiveCycle to the new instance of MySQL installed with AEM forms on JEE.

**Important:** *If your previous instance of LiveCycle and your new installation of AEM forms on JEE are not on the same machine, you must manually import MySQL data into the MySQL instance installed by AEM forms on JEE installer and copy the relevant directories onto the new computer you plan to use for AEM forms on JEE . See [this article](#) for detailed steps about Migrating previous instance of LiveCycle MySQL Database to new instance of AEM forms on JEE MySQL Database and backing up LiveCycle data.*

- Configures a new CRX repository. If you already have a CRX repository for LiveCycle ES4 SP1, then you will have to be upgrade repository to CRX 6.1 manually later.
- Starts the JBoss for Adobe Experience Manager forms service.
- Deploys AEM forms on JEE EAR Files to JBoss
- Initializes the MySQL database
- Performs migration of critical data, before deploying components
- Deploys all the required components to JBoss
- Updates (patches) the existing components, preserving previous service configuration parameters, endpoints, watched folders, and so on
- Migrates essential data, including settings, and configuration data to LiveCycle
- Configures modules such as ECM Connectors (for example Connector for EMC Documentum, Connector for IBM FileNet, Connector for IBM Content Manager, or Connector for Microsoft SharePoint), PDF Generator, and Acrobat Reader DC extensions.

# Chapter 3: System Prerequisites

Before you read system prerequisites section, ensure that you have read the [Upgrade Checklist and Planning guide](#).

## 3.1 System requirements

Use the turnkey installation to install all the modules on a single system for development and evaluation. Ensure that your target computer has at least 4-GB RAM. For detailed system requirements, see the [Supported Platform Combinations](#).

## 3.2 Additional prerequisites

### 3.2.1 Hardware

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

- Disk space for installation: 25 GB (an additional 4.64 GB is required if you are using an ESD download as opposed to installing from a DVD)
- System temporary space during installation: 15 GB
- Memory for running AEM forms on JEE: 4 GB
- Processor: Intel® Pentium® 4 or equivalent, 1.6 GHz, or higher processor

### 3.2.2 Operating System

The turnkey method is supported on Windows 2012 R2 and Windows Server 2008 R2 Standard and Enterprise Edition running on 64-bit architectures (required for production environment).

**Note:** Windows 7 and Windows 8 are supported for evaluation and development. You must have administrator privileges on Windows to run the installer. If you run the installer using an account that does not have these privileges, you will be prompted for the credentials of an account with administrator privileges.

### 3.2.3 Partial turnkey database preconfiguration

The Partial Turnkey option allows you to use your existing database with the preconfigured JBoss application server. The following database types are supported:

- MySQL 5.5
- Microsoft SQL Server 2008 R2, 2012
- Oracle 11g R2 and 12c

If you are using your existing database, configure the database as specified in the [Creating the Database](#).



### 3.2.4 Application server

The turnkey method allows you to install, configure, and use JBoss 6.2 (which includes the Apache Tomcat servlet container). Once you have verified that your upgraded environment is working correctly, you can remove the old instance from your server.

## 3.3 Backing up data files

Before starting the upgrade process, you must back up all the files and directories associated with the previous deployment, including the Java SDK, installation files, watched folder contents, temporary directory, and so on. Do not delete any of these items. The backup tasks involved are as follows:

- **(Upgrading from Livecycle ES4 SP1)** Put the forms server in maintenance mode before performing upgrade (See [Running existing server in maintenance mode](#) section in [administration help](#)). Shutdown the forms server and take cold backup.

The following data must be included in your back up:

**GDS directory:** This directory can reside either locally or on a shared network drive. Default location of the GDS directory is [install\_root]\gds. For information on how to find and backup the GDS directory, see Global Document Storage directory in [administration help](#).

**Database:** Use the database backup utility to backup your data. For information on how to back up your database, see database in [administration help](#).

**EAR files:** The EAR files are required to restore your system if you encounter upgrade issues.

**Reader Extension credential file:** Backup the Reader Extension credential file if you have installed fresh operating system.

**fonts:** Back up all Adobe font directories that are specified in Configuration Manager (in Administration Console, go to Settings > Core System > Configurations). Ensure that you back up the entire directory.

**Customer installed fonts:** If you installed additional fonts on your previous AEM forms environment, back them up separately.

**Watched folders:** Backup the watched folders.

## 3.4 Before you start

### 3.4.1 General considerations

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

- To reduce the time of installation, install AEM forms on JEE either by using a local copy of the installation files or directly from the DVD. The installation could fail when AEM forms on JEE is installed from a network.
- Ensure that the installation media that you received is not damaged. If you copy the installer media to the hard disk of your computer, ensure that you copy the entire DVD contents on to the hard disk.
- If you downloaded the installer file set, verify its integrity using an MD5 check sum utility. Use this utility to check the MD5 check sum values with the value displayed on the Adobe download website. You can use a tool such as WinMD5.

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- To avoid installation errors, do not copy the DVD install image to a directory path which exceeds the maximum path length limitation. Typically, long network paths cause this error. See <http://msdn.microsoft.com/en-us/library/aa365247.aspx> for more information.
- Download any patch updates for AEM forms on JEE available from [Adobe Enterprise Support](#).
- You may choose to disable any on-access virus scanning software for the duration of the installation, to improve the speed of installation on Windows.
- The turnkey installation creates the following Windows services, which, by default, are set to run automatically on startup:
  - JBoss for Adobe Experience Manager forms
  - MySQL for Adobe Experience Manager forms (not applicable if you selected the Partial turnkey option)

These services manage the application server and the database for the turnkey upgrade.

You can start, stop, and pause these services by using the Windows Services Control Manager. To open the Windows Services Control Manager, go to **Control Panel > Administrative Tools > Services**. Using this tool, you can also configure the services to start when the computer starts or to require manual startup.

- By default, the turnkey installation places AEM forms on JEE components in the `C:\Adobe\Adobe_Experience_Manager_forms\` directory.

**Important:** If you choose another directory, do not use the name **test** as your directory name (for example, `C:\test`) or the MySQL install process will fail.

- By default, JBoss is installed to and runs from the `[JBoss root]` directory.

### 3.4.2 Disable the Windows UAC on Windows Server 2008 R2

- 1 To access the System Configuration Utility, go to **Start > Run** and then enter **MSCONFIG**.
- 2 Click the **Tools** tab and scroll down and select **Disable UAC**.
- 3 Click **Launch** to run the command in a new window.
- 4 When finished, close the command window and close the System Configuration window.
- 5 Restart your computer.

You must disable UAC when installing and configuring AEM forms on JEE. To enable the UAC again, repeat the steps above and select **Enable UAC** before clicking Launch.

### 3.4.3 Disable the Windows UAC on Windows 7, Windows Server 2008 R2, Windows 2012

- 1 To access the System Configuration Utility, go to **Start > Run** and then enter **MSCONFIG**.
- 2 Click the **Tools** tab and scroll down and select **Change UAC Settings**.
- 3 Click **Launch** to run the command in a new window.
- 4 Adjust the slider to the **Never notify** level.
- 5 When finished, close the command window and close the System Configuration window.
- 6 Restart your computer.

To enable the UAC again, repeat the steps above and adjust the slider to a desired level before restarting your computer.

**Important:** The Windows User Account Control (UAC) must remain disabled for PDF Generator to work properly. You can run the installation and configuration process by turning on the UAC with the Elevate without prompting option enabled. However, disable UAC to run PDF Generator.

### 3.4.4 Acrobat Reader DC extensions credential

If you are installing Acrobat Reader DC extensions, ensure that you have a valid credential and password. If you do not have this information, contact your Adobe account representative. You can choose to skip importing the Acrobat Reader DC extensions credential when configuring and deploying AEM forms on JEE and install it later using the Trust Store component in administration console.

### 3.4.5 Preconfigurations for PDF Generator

With native application file support, PDF Generator can convert files from native formats such as Microsoft Word to Adobe PDFs. Before you install PDF Generator, complete the tasks listed below.

#### 3.4.5.1 Installing software for native file conversions

Before you install PDF Generator, install the software that supports the native file types for which, PDF conversion support is required. Also, manually activate licenses for the software using the same user account used to run the application server.

Refer and conform to the individual licensing agreement for each native application used for conversions with AEM forms on JEE.

PDF Generator can be extended to convert these additional file types to PDF files by using the following applications:

- Microsoft Office 2007, 2010, 2013(DOC, XLS, PPT, RTF, TXT, Microsoft Office open XML Formats)
- Microsoft Publisher 2007, 2010 (PUB)
- Microsoft Project 2007, 2010 (MPP)
- Corel WordPerfect 12, X4 (WPD)
- Adobe® FrameMaker® 7.2, 8.0 (FM)
- Adobe® PageMaker® 7.0 (PMD, PM6, P65, PM)
- OpenOffice 3.3 (ODT, ODP, ODS, ODG, ODF, SXW, SXI, SXC, SXD, SXM)

**Note:** AEM forms on JEE supports only 32-bit editions of all the above mentioned software.

**Note:** Install OpenOffice 3.3 on the server to convert the documents created in version 3.3. On Linux platform, OpenOffice must be installed under /root user. If OpenOffice is installed for specific users, PDFG might not be able to convert OpenOffice documents.

You do not need to install a native software application to convert the following native file formats:

- Web files (HTML)
- Print files (PS, PRN, EPS)
- Image files (JPEG, GIF, BMP, TIFF, PNG)

#### 3.4.5.2 Installing Adobe Acrobat for PDF Generator

Install Acrobat DC Pro before running the AEM forms on JEE installer. Ensure that you launch Acrobat at least once after installing it to avoid PDF Generator configuration issues. Dismiss all modal dialog boxes that appear on launching Acrobat.

The AEM forms on JEE installer sets the `Acrobat_PATH` (case sensitive) environment variable automatically. You can also choose to set it manually, see “[6.15.1 Setting environment variables](#)” on page 39. Restart your application server after setting the environment variable.

To use AES 256 encryption in AEM forms on JEE Encryption service to encrypt a PDF document, you must obtain and install the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy files. For Oracle JDK installed with turnkey installation, download JCE files from Java SE Downloads. After downloading the policy file, replace the existing `local_policy.jar` and `US_export_policy.jar` files under `[Adobe_JAVA_HOME]/jre/lib/security` folder with the downloaded JAR files.

### 3.4.5.3 Enabling multi-threaded file conversions and multiuser support for PDF Generator

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

**Note:** Multi-threaded conversions are not supported for Microsoft Excel, Microsoft Project, and Microsoft Publisher.

Each instance of OpenOffice or PDFMaker is launched using a separate user account. Each user account that you add must be a valid user with administrative privileges on the AEM forms on JEE server computer. On 64-bit Windows, disable Windows UAC. See “[3.4.2 Disable the Windows UAC on Windows Server 2008 R2](#)” on page 6 or “[3.4.3 Disable the Windows UAC on Windows 7, Windows Server 2008 R2, Windows 2012](#)” on page 6, as applicable.

When adding users for OpenOffice, Microsoft Word, or Microsoft PowerPoint dismiss the initial activation dialogs for all users. After your AEM forms on JEE server is configured, add AEM forms on JEE user accounts in administration console. See the “[6.15.7 User accounts for multi-threaded file conversions](#)” on page 41.

To enable multiuser support for native files and OpenOffice files on a Windows environment, add a minimum of three users with the following permissions.

Platform	User permissions
Windows 2008 Server	Users with administrative privileges

When you add users for PDF Generator native conversions, grant the user Logon as Service right. For more information, see “[3.4.5.4 Granting the Logon as Service right](#)” on page 8

### 3.4.5.4 Granting the Logon as Service right

If you are installing PDF Generator on any Windows operating system, grant the Logon as Service right to the user that installs AEM forms on JEE.

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

# Chapter 4: Upgrading to, Configuring, and Deploying AEM forms on JEE

## 4.1 Installing AEM forms on JEE

The default target installation directory for AEM forms on JEE is `C:\Adobe\Adobe_Experience_Manager_forms\`. After you install AEM forms on JEE, you will run Configuration Manager to perform the upgrade to AEM forms on JEE.

### 4.1.1 Installing AEM forms on JEE

1 Do one of the following:

- From the download site, download and extract the entire JBoss\_DVD.zip file (the AEM forms on JEE Electronic Software Distribution or ESD file) to your file system. Be sure to keep the directory hierarchy unchanged from the JBoss\_DVD.zip file.
  - After extracting the ZIP file, launch the installer using one of the following methods:
  - (for 32-bit systems) double-click the **install.exe** file from the `\server\Disk1\InstData\Windows\VM` folder
  - (for 64-bit systems) double-click the **install.exe** file from the `\server\Disk1\InstData\Windows_64\VM` folder
- From the JBoss DVD, navigate to the `\server` folder. Launch the installer using one of the following methods:
  - (for 32-bit systems) double-click the **install.exe** file from the `\server\Disk1\InstData\Windows\VM` folder
  - (for 64-bit systems) double-click the **install.exe** file from the `\server\Disk1\InstData\Windows_64\VM` folder

***Note:** 32-bit version is for development and evaluation purposes only.*

2 When prompted, select the language for installation, and then click **OK**.

3 On the Introduction screen, click **Next**.

4 The Preparation for Upgrade screen appears only if you have LiveCycle ES4 installed on the target machine, perform one of the following operations:

- Select **Prepare to upgrade existing installation to Adobe Experience Manager forms** to upgrade the current LiveCycle ES4 service pack 1 (SP1) installation to AEM forms on JEE. If the path displayed does not point to the location of the LiveCycle ES4 installation you would like to upgrade, click **Browse** to specify the path of the LiveCycle ES4 instance you would like to upgrade. For detailed steps to upgrade, see [Upgrading to AEM forms for JBoss Turnkey](#)
- Select **Install Adobe Experience Manager Forms** to install AEM forms on JEE and specify the path where you want to install it.

5 On the Choose Install Folder screen, accept the default directory as listed or click **Choose** and navigate to the directory where you want to install AEM forms on JEE, and then click **Next**. This directory is referred to as *[aem-forms root]*. The default path is `C:\Adobe\Adobe_Experience_Manager_forms\`.

Use **Restore Default Folder** button, to replace user added path to default installation path.

***Note:** It is recommended that the installation directory path should not exceed 40 characters. And it must not contain international or special characters.*

- 6 On the Partial Turnkey Installation Options screen, You can include a preconfigured MySQL database server or select your own external database server to use with AEM forms on JEE.

**Note:** This screen appears only if you are performing an upgrade of partial turnkey installation of LiveCycle ES4.

- 7 On the Choose Installation Type screen, select the installation type and click **Next**:

- Select **Turnkey** under Typical as the installation type for a typical turnkey installation. Turnkey option installs AEM forms on JEE, JBoss 6.2 EAP, MySQL 5.5 database, and JDK 1.7.0\_25.
- Select **Partial Turnkey** under Custom if you want to use a database other than the preconfigured MySQL database. AEM forms on JEE, JBoss application server, and JDK 1.7.0\_25 are installed by default.
- Select **Manual** if you do not want a turnkey installation but instead want a custom install. This option is selected by default if you already have a JBoss application server and MySQL database installed on your system with their Windows service names identical to those created by the AEM forms on JEE installer.

**Note:** This screen appears only if you have either chosen the **Install Adobe Experience Manager Forms on the Preparation for Upgrade** screen, or installing AEM forms on JEE on a computer that does not have LiveCycle ES4 installed on it.

**Note:** For Manual installations, see the *Upgrading to AEM forms on JEE for JBoss and Preparing to Upgrade AEM forms on JEE* guides before continuing.

- 8 **(For MySQL provided with the installer only)** On MySQL Database selection screen, set the MySQL root administrator password and, optionally, type your MySQL port number. This screen appears only if you are performing a turnkey installation, or in a partial turnkey installation when you have selected the **Include the Turnkey MySQL** option.

**Note:** If you select **Use my database** on Partial turnkey installation options screen this screen does not appear.

**Note:** MySQL does not allow special characters or spaces in the user name or password. Ensure that you record this password for future reference.

- To verify that the port number is available for use, click **Test**. If the port is available, the installer displays a green check mark. If the port is in use, the installer displays a red X.
- If the port is in use, type a new port number and repeat the process until you find a port that is available. Clicking **Reset** populates the port box with the default port number 3306.

**Note:** If you are upgrading on the same server machine that has LiveCycle ES4 installed, specify a port other than the one used by LiveCycle.

- 9 Read the JBoss Application Server License Agreement and, if you agree, select **I accept** and then click **Next**.

- 10 **(For MySQL provided with the installer only)** Read the MySQL License Agreement and, if you agree, select **I accept**, and then click **Next**. This screen will appear only when **Turnkey** or **Include the Turnkey MySQL** option is selected in case of Partial Turnkey.

- 11 Read the AEM forms on JEE license agreement and, if you agree, select **I accept**, and then click **Next**.

- 12 Review the pre-installation summary, and then click **Install**. The installation program displays the progress of the installation. This process may take several minutes to complete.

- 13 Review the Release Notes and click **Next**.

- 14 On the Install Complete screen, choose one of these options:

- If you are upgrading Connectors for ECM, deselect **Start Configuration Manager**, click **Done**, and go to [“4.2 Preparing Connectors for ECM for upgrade”](#) on page 11.

- If no service pack updates are required, ensure that **Start Configuration Manager** is selected, and then click **Done**.
- If service pack updates are required, deselect the **Start Configuration Manager** option and click **Done** to exit the installer.

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

## 4.2 Preparing Connectors for ECM for upgrade

If you are upgrading the Connector for EMC Documentum, Connector for IBM FileNet, or Connector for IBM Content Manager from LiveCycle ES4, you must configure an application server system after you install AEM forms on JEE and before you start Configuration Manager to complete the upgrade process.

***Note:** If you are not upgrading on a new computer, skip to step 2.*

- 1 **(For out-of-place upgrade to a new computer only)** Install the client for your ECM repository on the new computer that hosts the new application server.
- 2 Perform all settings related to Connectors for ECM (except for administration console settings) on the new application server prior to beginning the upgrade. See the “Configuring the Connector for ...” section of the Post-Deployment Activities chapter in this guide.
- 3 Navigate to the `[JBoss root]/bin` directory on your existing LiveCycle ES4 server and copy the `adobe-component-ext.properties` file to the corresponding directory on the target server.
- 4 Restart the application server.

You can now continue to run Configuration Manager to upgrade to AEM forms on JEE.

***Important:** For Connector for EMC Documentum or Connector for IBM FileNet, the default repository must be set to LiveCycle Repository Provider or the upgrade deployment will fail. If you have configured the ECM repository provider as the default repository for either of these connectors, open the administration console and navigate to **Services** > **[connector type AEM forms]** > **Configuration Settings**. Select the **[LiveCycle Repository Provider AEM forms]** option and click **Save**.*

## 4.3 Install service packs

Before you complete the configuration using Configuration Manager, apply the latest service packs for AEM forms on JEE. See [AEM forms help hub](#) for details.

## 4.4 Configuring AEM forms on JEE

Now that AEM forms on JEE is installed, you are ready to begin the upgrade configurations. The Configuration Manager wizard performs the tasks required for upgrading.

### 4.4.1 Configuring AEM forms on JEE

**Note:** Press **F1** in Configuration Manager to view Help information for the screen you are viewing. You can view the configuration progress at any time by clicking View Progress Log.

**Note:** During configuration, if you must reset the data in Configuration Manager by using the Reset to Default option, ensure that you relaunch the Configuration Manager. Otherwise, you may encounter some missing configuration screens.

- 1 If you are continuing from the AEM forms on JEE installation, proceed to step 3; otherwise, navigate to the [aem-forms root]\configurationManager\bin folder and run ConfigurationManager.bat.
- 2 When prompted, select the language to use, and then click **OK**.
- 3 If you are prompted to choose to use existing configuration data, click **OK**.
- 4 On the Welcome to Adobe Experience Manager forms screen, click **Next**.
- 5 On the Upgrade Task Selection screen, select Upgrade from LiveCycle ES4 SP1, and click **Next**.

### 4.4.2 Selecting modules

- ❖ On the Modules screen, ensure that the LiveCycle ES4 modules you want to upgrade are selected. By default, all the modules that you select will be licensed with an Evaluation License. Click **Next**.

**Note:** Some modules have technical dependencies on other modules for proper configuration and functioning. Configuration Manager displays a dialog and does not allow to proceed further if mutually dependent modules are not selected. For example, you must select Forms, Output, and Content Repository modules if you are configuring Correspondence Management.

**Important:** Ensure that all modules configured in your LiveCycle ES4 instance are selected. You may choose to deploy additional modules.

### 4.4.3 Selecting Tasks

- ❖ On the Task Selection screen, ensure that all the required tasks are selected, and then click **Next**.

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

### 4.4.4 Reviewing the requirements

- 1 On the In-place vs Out-of-place Upgrade screen, review the information provided and ensure that you have performed all the prerequisites and click **Next**.
- 2 On the Pre-upgrade Steps and Pre-upgrade Steps (Contd...) screens, review the requirements and perform all tasks relevant to your environment and click **Next**.

### 4.4.5 Stopping JBoss

- ❖ On the Shutdown previous LiveCycle screen, click the button to stop the JBoss service for your LiveCycle ES4 version, and click **Next**.



## 4.4.6 Migrating Global Document Storage directory

- ❖ On the Migrate Global Document Storage (GDS) directory and other Adobe Experience Manager forms content screen, specify previous and current GDS locations, and then click **Migrate Contents** to copy the previous content to the current (new) location. When complete, click **Next**.

***Note:** The default location of GDS is `[install_root]\gds`. If the GDS location was changed in your previous version, migrate the contents of the GDS manually.*

## 4.4.7 Migrating Custom Data Sources

- ❖ On the Migrate Custom Data Sources screen, if you had created custom datasources after installing previous version of AEM forms/LiveCycle, select the **Import datasources** option, click **Start** to import them. When complete, click **Next**.

If you do not have custom data sources, leave the option deselected and click **Next**.


## 4.4.8 Configuring EAR, Fonts, and GDS

- 1 On the Configure Adobe Experience Manager forms (1 of 5) screen, click **Configure** and, when the EAR files have been configured, click **Next**. Depending on the number of modules that are included in the configuration, this process may take several minutes to complete.

***Note:** If you encounter the error message listed below, ignore the error message and continue with configuring AEM forms.*

```
ERROR [stderr] (http-/0.0.0.0:8080-4) com.adobe.idp.common.errors.exception.IDPException|  
[com.adobe.idp.storeprovider.jdbc.DBStatement] errorCode:12552 errorCodeHEX:0x3108
```

- 2 On the Configure Adobe Experience Manager forms (2 of 5) screen, set the directories that AEM forms on JEE will use to access fonts and then click **Next**.

 Click **Edit configuration** to change any values on this screen. This button is not available when the Configuration Manager is run for the first time, but is available on the second and subsequent runs of the Configuration Manager.

- (Optional) To change the default location of the **Adobe server fonts directory**, type the path or browse to the directory. The default path is `[aem-forms root]/fonts`
- To change the default location of the **Customer fonts directory**, click **Browse** or specify a new location for your customer fonts.

***Note:** Your right to use fonts provided by parties other than Adobe is governed by the license agreements provided to you by such parties with those fonts, and is not covered under your license to use Adobe software. Adobe recommends that you review and ensure that you are in compliance with all applicable non-Adobe license agreements before using non-Adobe fonts with Adobe software, particularly with respect to use of fonts in a server environment.*

- (Optional) To change the default location of the **System fonts directory**, type the path or browse to the directory.
  - (Optional) To enable FIPS, ensure that **Enable FIPS** is selected. Select this option only if you require the Federal Information Processing Standards (FIPS) to be enforced.
- 3 On the Configure Adobe Experience Manager forms (3 of 5) screen, accept the default location for the **Location of temporary directory**, or enter the path or click **Browse** to specify the path. The default location is `[aem-forms root]/temp`. Click **Next** to continue.

- 4 On the Configure Adobe Experience Manager forms (4 of 5) screen, accept the default location for the **Global document storage directory path**, or click **Browse** to specify the fully qualified path. If your LiveCycle ES4 version did not use the default GDS directory, for a successful upgrade you must specify a directory for AEM forms on JEE, and copy the contents of the previous GDS directory to this new location.

***Note:** If you migrated GDS contents to the AEM forms on JEE installation in the step “4.4.6 Migrating Global Document Storage directory” on page 13, do not modify the prepopulated value of **Global document storage directory path**.*

- 5 On the Configure Persistent Document Storage (5 of 5) screen, select either **Use GDS** or **Use database**, and then click **Configure**.
  - **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 database for AEM forms on JEE for storing persistent documents and long-lived artifacts. However, the file-system based GDS is also required. Using the database simplifies backup and restore procedures.

Click **Next**.

#### 4.4.9 Configuring Acrobat for PDF Generator

- 1 (**PDF Generator only**) On the Configure Acrobat For PDF Generator screen, click **Configure** to run the configuration script. When complete, click **Next**.
- 2 On the Configure Adobe Experience Manager forms Summary screen, click **Next**.

#### 4.4.10 Configuring the Database

***Important:** Ensure that the old and current versions of MySQL are running before you perform these steps.*

***Important:** If you have chosen the **Install Adobe Experience Manager forms** option on the Preparation for Upgrade screen, or are installing AEM forms on JEE on a computer that doesn't have LiveCycle ES4 installed on it, you must manually import your LiveCycle ES4 database into AEM forms on JEE database.*

- 1 On the AEM forms Database screen, specify information about the database you are going to use with AEM forms on JEE, and then click **Verify Connection** to test the connection. Click **Next**.
- 2 On the Previous AEM forms Database screen, specify information about the LiveCycle ES4 database that you are upgrading from, and then click **Verify Connection** to test the connection. Click **Next**.

***Note:** This screen appears only if you have chosen the **Prepare to upgrade existing installation to AEM forms** option on the Preparation for Upgrade screen.*

- 3 On the Upgrade MySQL Relational Database screen, click **Upgrade MySQL** to migrate the LiveCycle ES4 data to the new MySQL database for AEM forms for JEE.

***Note:** This screen appears only if you have chosen the **Prepare to upgrade existing installation to AEM forms** option on the Preparation for Upgrade screen.*

#### 4.4.11 Configure CRX

- ❖ The CRX Configuration screen allows you to configure the CRX repository and install it into the adobe-lifecycle-cq-author.ear EAR file.
  - 1 Specify the path to the repository. The default location is `[aem-forms root]/crx-repository`.

***Note:** Ensure that the CRX repository path does not contain spaces and the content repository is available on all the nodes of the cluster. After the configuration is complete, copy the content repository from local node to all the nodes on the same location (as specified on the CRX configuration screen) .*

- 2 If you are upgrading from your existing repository, specify the path to the existing repository or a replica of the existing repository.
- 3 Select the repository type, as appropriate and keep a note of the following points:

- CRX3 TAR is not supported in clustered deployments.
- If selecting CRX3 Mongo DB, specify the Mongo database name and URL to the database. The format of the URL is: `mongodb://<HOST>:<Port>`.

HOST: IP address of the machine running MongoDB.

Port: Port number used for the MongoDB. The default port number is 27017.

- CRX3 RDB is supported only with Oracle 12c or IBM DB2 10.5 databases. Selecting this option sets the CRX repository persistence to RDB MK (document MK) .

***Note:** If you have already upgraded to AEM 6.1 forms and you are running configuration manager to add/remove modules, then ensure that the CRX repository type option matches the option selected while performing the upgrade.*

- 4 Optionally, select AEM Samples need to be installed to install AEM samples.

- 5 Click **Configure** to create the required repository files at the specified location.

***Note:** If your AEM forms on JEE server is running remotely, select **Server is running on remote host**, and specify the path to the repository on the remote host.*

***Note:** Clustered environments with relational databases are now supported for production use under a "gated" program. If you intend to use a relational database in a clustered environment, contact AEM Forms product team at [forms\\_documents@adobe.com](mailto:forms_documents@adobe.com) for approval. Also ensure that the mandatory patches are installed and configured.*

Click **Next** to continue.

***Note:** Once the packages are configured, you cannot remove them by re-running the Configuration Manager. For clean uninstallation of deployed packages, you need to uninstall and delete the packages using Package Manager.*

#### 4.4.12 Configuring turnkey JBoss SSL

- ❖ On the Configure Turnkey JBoss SSL screen, add the information to configure the SSL certificate and click **Configure JBoss SSL**, when complete click **Next**.

You can skip this step by selecting the Skip Configuration and configure it later using Configuration Manager.

- **Certificate Alias:** The alternate unique name that is used to reference the certificate.
- **Keystore filename:** The name of the keystore that is assigned to store the keys and the certificate.

#### 4.4.13 Install verification samples

- ❖ **(Forms, Assembler, and Output, only)** On the Adobe Experience Manager forms Installation Verification Sample (IVS) EAR files screen, you can install three service-specific sample applications. Select **Include IVS EARs in deployment set** and click **Next** to install these sample files.

`adobe-output-ivs-jboss.ear`, `adobe-assembler-ivs.ear`, and `adobe-forms-ivs-jboss.ear` appear only if you have selected respective modules on the Modules screen.

*Note: Do not deploy the IVS EAR files to a production environment.*

#### 4.4.14 Deploying AEM forms EARs

- ❖ On the Deploy AEM forms EAR files screen, select the EAR files you want to deploy to JBoss, click **Deploy** and when complete, click **Next**.

*Note: During EAR files Deployment to AEM forms on JEE, certain errors may be displayed regarding EARs being unable to locate the correct table. You may ignore these errors.*

#### 4.4.15 AEM forms Database Initialization

- ❖ On the Adobe Experience Manager forms Database Initialization screen, verify the host and port information, and then click **Initialize**. The database initialization task creates tables in the database, adds default data to the tables, and creates basic roles in the database. When the initialization completes successfully, and then click **Next**.



*Do not skip this step. Database initialization does not harm legacy data.*

#### 4.4.16 Server Information

- ❖ On the Adobe Experience Manager forms Information screen, type the administrator user ID and password from your LiveCycle ES4 installation, and click **Verify Server Connection**. When the validation is complete, click **Next**.

*Note: If the server verification fails, restart the server, but only after error.log becomes stable and `http://<server>:<port>/lc` is accessible. If the verification fails yet again, restart the server again.*

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.

#### 4.4.17 JNDI Information

- ❖ On the JNDI port for Adobe Experience Manager forms Information screen, specify the JNDI server host name and port number and click **Verify Connection**. When verified, click **Next**.

#### 4.4.18 Performing Critical Tasks before Component Deployment

- ❖ On the Perform critical tasks before component deployment screen, click **Start** to perform the tasks required before components are deployed. When complete, click **Next**.

#### 4.4.19 Session ID Migration Errors

- ❖ View and fix the errors that were encountered while migrating session IDs from your instance of LiveCycle ES4, and then click **Next**. It is important to fix these errors else you may encounter some failed workflow invocations post-upgrade.

#### 4.4.20 Central Migration Bridge Service Deployment Configuration

- ❖ On Central Migration Bridge Service Deployment Configuration screen, select **Include Central Migration bridge service in deployment** if you are licensed to configure AEM forms on JEE with Central Pro or Web Output Pak, and click **Next**.

### 4.4.21 AEM forms Components Deployment

- 1 On the Adobe Experience Manager forms Component Deployment screen, click **Deploy**. The components deployed at this time are Java archive files that plug into the service container for AEM forms on JEE for the purposes of deploying, orchestrating, and executing services. When the deployment has completed successfully, click **Next**.
- 2 On the Adobe Experience Manager forms Component Deployment Validation screen, click **Validate**. Configuration Manager validates that the Java archive files are deployed to and running on the J2EE server for AEM forms. When the validation is completed successfully, click **Next**.

### 4.4.22 Migrating data essential to AEM forms

- ❖ On the Migrate Data Essential to Adobe Experience Manager Operation screen, click **Start** to migrate the data from your LiveCycle ES4 environment. When complete, click **Next**.

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

### 4.4.23 Configuring AEM forms Components

- ❖ On the Configure Adobe Experience Manager forms Components screen, select the AEM forms on JEE modules to configure, and then click **Next**. The screens that appear next depend on your selections on this screen.

***Note:** If you are upgrading any Connectors for ECM module, do not select them on this screen. Only include them if you are licensing them for the first time in AEM forms on JEE and proceed with the following steps as appropriate.*

#### 4.4.23.1 Configure Connector for EMC Documentum

- ❖ On the Specify Client for EMC Documentum screen, do one of the following tasks:
  - Deselect the **Configure Connector for EMC Documentum Content Server** option to manually configure EMC Documentum later, and then click **Next**.
  - Leave the **Configure Connector for EMC Documentum Content Server** option selected, enter the appropriate version and directory path for EMC Documentum client, and click **Verify**. When complete, click **Next** and complete the tasks on the following screens:
    - On the Specify EMC Documentum Content Server Settings screen, specify the required values and click **Next**.
    - On the Configure Connector for EMC Documentum screen, click **Configure Documentum Connector**. When complete, click **Next**.

#### 4.4.23.2 Configure Connector for IBM Content Manager

- ❖ On the Specify Client for IBM Content Manager screen, do one of the following tasks:
  - Deselect the **Configure Connector for IBM Content Manager** option to manually configure IBM Content Manager later, and then click **Next**.
  - Leave the **Configure Connector for IBM Content Manager** option selected, enter the appropriate directory path for IBM Content Manager client, and click **Verify**. When complete, click **Next** and complete the tasks on the following screens:
    - On the Specify IBM Content Manager Server Settings screen, specify the required values and click **Next**.
    - On the Configure Connector for IBM Content Manager screen, click **Configure IBM Content Manager Connector**. When complete, click **Next**.

#### 4.4.23.3 Configure Connector for IBM FileNet

- ❖ On the Specify Client for IBM FileNet screen, do one of the following tasks:
  - Deselect the **Configure Connector for IBM FileNet Content Manager** option to manually configure IBM FileNet later, and then click **Next**.
  - Leave the **Configure Connector for IBM FileNet Content Manager** option selected, enter the appropriate version and directory path for IBM FileNet client, and click **Verify**. When complete, click **Next** and complete the following screens:
    - On the Specify IBM FileNet Content Server Settings screen, specify the required values and then click **Next**.
    - On the Configure Connector for IBM FileNet Process Engine screen, specify the appropriate version (if enabled) and directory path, and then click **Verify**. When complete, click **Next**.
    - On the Specify IBM FileNet Process Engine Server Settings screen, specify the required values and click **Next**.
    - On the Configure Connector for IBM FileNet screen, click **Configure FileNet Connector**. When complete, click **Next**.

#### 4.4.23.4 Configure Connector for Microsoft SharePoint

- ❖ On the Configure Adobe Experience Manager forms Connector for Microsoft SharePoint screen, do one of the following tasks:
  - Deselect the **Configure AEM forms Connector for Microsoft SharePoint** option to manually configure Microsoft Sharepoint later, and then click **Next**.
  - Leave the **Configure AEM forms Connector for Microsoft SharePoint** option selected. Specify the required values, and click **Configure SharePoint Connector**. When complete, click **Next**.

#### 4.4.23.5 Verifying Configuration for ECM Connectors

- ❖ On the Verify Configurations screen, do one of the following tasks:
  - If you are configuring the connectors for the first time or have modified any of the configurations on the previous screens, leave the **Restart Application Server** option selected and click **Validate Configurations**. When successfully validated, click **Next**.

*Note: The validation of IBM FileNet may fail if there are special characters, such as hyphen (-), underscore (\_), comma (,), or dot (.) in the directory name containing the IBM FileNet client.*
  - If you wish to configure connectors later, deselect the **Restart Application Server** option and click **Validate Configurations**. When successfully validated, click **Next**.

#### 4.4.23.6 Manually Configuring Connectors

*Note: This screen appears only when you select to configure ECM Connectors on the Configure Adobe Experience Manager forms Component screen but then skip configuring the ECM Connectors on the connector screens.*

##### Configuring AEM forms Connectors

- 1 Create a file called `adobe-component-ext.properties` and place it in the application server's working directory.
- 2 Add an attribute that associates the ECM Java libraries with the ECM component. The format of the attribute is:  
`com.adobe.livecycle.Connectorfor[ECM].ext=[Comma delimited list of Jar Files, Resource files and/or Directories]`

- 3 Start the application server.
- 4 When you finish running Configuration Manager and AEM forms on JEE is deployed and running, specify the location of the EMC Documentum Content Server, IBM Content Manager DataStore, IBM FileNet Content Engine IP/Port and user credentials for connectors in the administration console.

#### 4.4.23.7 Configuring PDF Generator

- 1 In the **Admin user credentials for native PDF conversions** screen, specify the user name and password of a user with administrative privileges on the server machine. Click **Add user**.

Add at least one administrative user for Windows 2008 Server and Click **Next**.

***Note:** On Windows 2008 Server, disable User Account Control (UAC) 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**. Click **OK**. Your changes become effective when the system is restarted.*

***Important:** Ensure that you disable UAC for the users you add. See “[3.4.2 Disable the Windows UAC on Windows Server 2008 R2](#)” on page 6 or “[3.4.3 Disable the Windows UAC on Windows 7, Windows Server 2008 R2, Windows 2012](#)” on page 6, as applicable.*

- 2 In the Document Services PDF Generator System Readiness Test screen, click **Start** to validate if the system has been configured correctly for PDF Generator. Review the System Readiness Tool Report and click **Next**.

#### 4.4.23.8 Configuring Acrobat Reader DC extensions Credential

- ❖ On the Acrobat Reader DC extensions Credential Configuration screen, specify the details that are associated with the Reader Extensions credential that activates the module services.

***Note:** You can skip this step at this time by selecting **Configure later using AEM forms administration console**. You can configure the Acrobat Reader DC extensions credential by using administration console after you complete the deployment. (After logging in to administration console, click **Home > Settings > Trust Store Management > Local Credentials**.)*

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

#### 4.4.24 Restarting Server

- ❖ Restart the JBoss application server. This is necessary as some configurations are applied only after the server is restarted. Click **Next**.

***Note:** Before restarting the application server, ensure that CRX is completely installed and running. Otherwise, the repository may corrupt. To verify that CRX is up and running, ensure that the following checks are passed:*

- Go to `http://<server>:<port>/lc` and ensure that you can log in using the configured username and password. The default username/password are administrator/password.
- Go to `http://<server>:<port>/system/console` and ensure that all the bundles are in active or fragment state.

#### 4.4.25 Task summary

Review the Configuration Manager task summary list and select **Next Steps** to launch an html page containing information about user and administrative interfaces for AEM forms on JEE. Click **Finish**.

***Note:** You will see a message on the screen to restart the server. However, do not immediately restart. Ensure that error.log is stable and all bundles (except signatures) are in active mode before you restart the server.*

## 4.5 Next steps

If you used Configuration Manager to configure and deploy AEM forms on JEE, you can now complete the post-deployment tasks. (See “[Post-Deployment Activities](#)” on page 29.)



# Chapter 5: Upgrade CRX2 repository to OAK repository

When you upgrade to the latest version of AEM Forms, the contents of the crx-repository are not migrated. After performing the upgrade and configuring AEM Forms, you can use the automatic or manual migration to migrate the contents of the crx-repository. After the migration is complete, the version of the crx-repository is upgraded to crx3 and the contents of the repository are migrated to the latest version.

You can upgrade CRX2 repository to AEM forms MongoMK, RDBMK, or TarMK. The following sections provide detailed steps to be performed to upgrade.

**Note:** AEM 6.1 forms supports RDBMK via a gated program. Contact Adobe support for detailed information on using RDBMK in a production environment.

## 5.1 Automated migration

CRX migration utility provides an easier and faster method to migrate content of the CRX repository from a previous release to AEM 6.1 Forms. The utility contains a .jar file and a properties file. It is packaged as an archive and is available at [CRX-utility download path] for download.

### 5.1.1 Prerequisites

Perform the following steps before using the utility:

- Take a backup of the [aem-forms root]/crx-repository folder.
- Download the crx2oak utility from <https://repo.adobe.com/nexus/content/groups/public/com/adobe/granite/crx2oak/1.4.2/>.
- Download the org.apache.servicemix.bundles.commons-dbc-1.4\_3.jar and org.apache.servicemix.bundles.commons-pool-1.5.4\_4.jar files from <http://mvnrepository.com/>.
- Download CRX migration utility archive and extract the archive to a local directory. The utility is available at <https://helpx.adobe.com/content/dam/help/en/aem-forms/6-1/MigrateFormsJEECrX2Content-6-1.zip>.



Place the extracted migration utility, migration utility property file, crx2oak utility, and jar files downloaded from maven repository in the same directory for easier access.

### 5.1.2 Migration utility property file

The migration utility requires a property file containing the defined properties. The template for the properties file, migration-utility-properties-template.prop, is included in the migration-utility archive. You must create a copy of this file and edit the values. The following table describes all the properties and required values for each property:

Property	Description
<b>Common Properties</b>	
persistenceType	Specifies the type of persistence of repository. The allowed values are: <ul style="list-style-type: none"> <li>• TarMK</li> <li>• MongoMK</li> <li>• RDBOracle</li> <li>• RDBDB2</li> <li>• RDBMySQL</li> <li>• RDBMSSQLServer</li> </ul>
repositoryPath	Specifies the absolute path of the CRX repository. Always use UNIX style path.
crx2oakPath	Specifies the absolute path of the crx2oak repository. Always use UNIX style path.
<b>Properties specific to MongoDB</b>	
dbURI	Specifies URI of your Mongo Database. The format of the URI is <server IP>:<port>/<DBname>. For example, myserver:27017/MYDatabase.
<b>Properties specific to RDBMK (Relational database)</b>	
apache_dbcpPath	Specifies the absolute path of the jar file org.apache.servicemix.bundles.commons-dbcp-1.4_3.jar.
apache_poolPath	Specifies the absolute path of org.apache.servicemix.bundles.commons-pool-1.5.4_4.jar.
jdbcJARPath	Specifies the absolute path of the JDBC jar specific for the database being used. The jar is bundled with AEM Forms on JEE installer and the default location is C:/Adobe/Adobe_Experience_Manager_Forms/lib/db/<database>/.
dbURI	Specifies the URI of your database. <ul style="list-style-type: none"> <li>• URI format of DB2 is &lt;server IP&gt;:&lt;port&gt;/&lt;DBname&gt;. For example, myserver:50000/MYDatabase</li> <li>• URI format of Oracle is &lt;server IP&gt;:&lt;port&gt;:&lt;DBname&gt;. For example, myserver:1521:MyDatabase</li> <li>• URI format of MSSQL is &lt;server IP&gt;:&lt;port&gt;/&lt;DBname&gt;. For example, localhost:1433;DatabaseName=MYDatabase</li> <li>• URI format of MySQL is &lt;server IP&gt;:&lt;port&gt;/&lt;DBname&gt;. For example, myserver:50000/MYDatabase</li> </ul>
dbUserName	Specifies user name of the database
dbPassword	Specifies password of the database.

### 5.1.3 Run the CRX migration utility

Perform the following steps to run the utility and migrate the contents:

- 1 Log in to the machine running AEM Form as an AEM Forms user. Ensure that the AEM Forms user has read and write access to the [aem-forms root]/crx-repository directory.
- 2 Create the property file as described in the Migration utility property file section listed above.

- 3 Open the command prompt and navigate to the folder containing extracted CRX migration utility and the migration utility property file.
- 4 Run the following command:

```
java -jar crx-migration-utility.jar -[absolute path of the property file]
```

The contents of the crx-repository are migrated from previous version to the latest version and the version of the crx-repository is upgraded to crx3.

## 5.2 Manual migration

The manual migration process provides detailed step-by-step instructions. You can use the manual migration process to learn about the nitty-gritties of crx migration in detail or to troubleshoot the crx migration related issues.

You can upgrade CRX2 repository to AEM forms MongoMK, RDBMK, or TarMK. The following sections provide manual steps to migrate CRX repository of a previous release to AEM 6.1 Forms:

### 5.2.1 Upgrade from CRX2 repository to AEM forms TarMK

Perform the following steps to upgrade your CRX repository to AEM forms TarMK:

- 1 Download and unzip the CRX to OAK migration utility. The utility is available at <https://helpx.adobe.com/content/dam/help/en/aem-forms/6-1/crx2oak-1.2.10.jar.zip>.
- 2 Shut down the application server.
- 3 Open the [CRX\_home]/repository/repository.xml file for editing.
- 4 In the repository.xml file, replace the following tag:

```
<SecurityManager class="com.adobe.livecycle.usermanager.crx.jaas.EmbeddedSecurityManager">
```

With

```
<SecurityManager class="com.day.crx.core.CRXSecurityManager">
```

- 5 Save and close the repository.xml file.
- 6 Create a folder. For example, [backup\_folder]. Migration utility requires a folder to keep the migrated content of the repository.
- 7 Open the command prompt, navigate to the [backup\_folder] created in the previous step, and run the command given below. The command migrates CRX2 repository to TarMK(OAK) repository.

```
java -jar [path_of_the_jar]/crx2oak-[version].jar [CRX_home]/repository/  
/[backup_folder]/oak-repository
```

**Note:** The command creates the segmentstore folder at /[backup\_folder]/oak-repository.

- 8 Copy the datastore folder from [CRX\_home]/repository/repository folder to the backup folder created in step 5.
- 9 Create a configuration file with named `org.apache.jackrabbit.oak.plugins.blob.datastore.FileDataStore.cfg` at [CRX\_home]/install and add the following properties to the file:

- `path=<absolute path of crx-repository>/repository/datastore`
- `minRecordLength=4096`

Save and close the file.

**10** Create a configuration file `org.apache.jackrabbit.oak.plugins.segment.SegmentNodeStoreService.cfg` at `[CRX_home]/install` and add the `customBlobStore=true` property to the file.

Save and close the file.

**11** Search and delete `slings.options.file` from `[CRX_home]/launchpad` folder.

**12** Delete all the content of the `[CRX_home]/repository/` folder.

**13** Open the `[CRX_home]/launchpad/sling.properties` file for editing and delete the properties starting with the following text:

- `granite.product.version`
- `org.osgi.framework.system.packages`
- `osgi-core-packages`
- `jre-`
- `slings.installer.dir`
- `felix.cm.dir`
- `osgi-compendium-services`
- `slings.run.mode.install.options`

**14** Delete the following files and folders:

- `[CRX_home]/launchpad/startup`
- `[CRX_home]/launchpad/felix/bundle0/BootstrapCommandFile_timestamp.txt`
- `[CRX_home]/launchpad/sling_bootstrap.txt`
- `[CRX_home]/launchpad/org.apache.sling.launchpad.base.jar`

**15** Copy only `\oak-repository\segmentstore` and `[Backup_folder]\datastore` directories from the `[backup_folder]/` to `[crx-repository]/repository` directory.

**16** (Non-Windows environment only) If you have installed AEM forms on JEE as a non-root user, run the following command in the `[CRX_home]` folder to provides read, write, and execute permissions to the non-root user.

```
chmod 777 -R
```

**17** Navigate to the `[CRX_home]/install` directory and, delete the following jar files, if present:

- `dataservices-pkg.zip`
- `platform-common-pkg.zip`
- `platform-content-pkg.zip`
- `platform-security-pkg.zip`
- `solution-correspondencemanagement-pkg.zip`

**18** Start the application server and deploy the `adobe-lifecycle-cq-author.ear` file located at `[AEM_forms root]\configurationManager\export` folder to the application server.

**19** After the `http://[server]:[port]/lc` becomes accessible, restart the application server.

*Note: Application server might take several minutes to start the author instance.*

## 5.2.2 Upgrade CRX2 repository to AEM forms MongoMK

*Note: Before performing the repository upgrade, ensure that the MongoDB is up and running.*

Perform the following steps to upgrade your CRX repository to AEM forms MongoMK:

- 1 Download and unzip the CRX to OAK migration utility. The utility is available at <https://helpx.adobe.com/content/dam/help/en/aem-forms/6-1/crx2oak-1.2.10.jar.zip>.
- 2 Shut down the application server.
- 3 Open the [CRX\_home]/repository/repository.xml file for editing.
- 4 In the repository.xml file, replace the following tag:  

```
<SecurityManager class="com.adobe.livecycle.usermanager.crx.jaas.EmbeddedSecurityManager">
```

  
with  

```
<SecurityManager class="com.day.crx.core.CRXSecurityManager" >
```
- 5 Save and close the repository.xml file.
- 6 Create a folder. For example, [backup\_folder]. Migration utility requires a folder to keep the migrated content of the repository.
- 7 Open the command prompt, navigate to the [backup\_folder] created in the previous step, and run the command given below. The command migrates CRX2 repository to MongoMK(OAK) repository and creates a database named aem-author.  

```
java -jar crx2oak.jar <absolute path of crx-repository>/repository/  
mongodb://[server]:[port]/aem-author
```
- 8 Copy the datastore folder from [CRX\_home]/repository/repository folder to the backup folder created in step 5.
- 9 Create a configuration file named  
`org.apache.jackrabbit.oak.plugins.blob.datastore.FileDataStore.cfg` at [CRX\_home]/install and add the following text to the file:
  - `path=<absolute path of crx-repository>/repository/datastore`
  - `minRecordLength=4096`Save and close the file.
- 10 Create a configuration file  
`org.apache.jackrabbit.oak.plugins.document.DocumentNodeStoreService.cfg`  
at [CRX\_home]/install and add the `customBlobStore=true` property to the file.  
Save and close the file.
- 11 Locate and delete the `sling.options` file from [CRX\_home]/launchpad folder.
- 12 Delete all the content of the [CRX\_home]/repository/ folder.
- 13 Open the [CRX\_home]/launchpad/sling.properties file for editing and delete the following properties along with the corresponding text:
  - `granite.product.version`
  - `org.osgi.framework.system.packages`
  - `osgi-core-packages`
  - `jre-*`
  - `sling.installer.dir`
  - `felix.cm.dir`
  - `osgi-compendium-services`

**Upgrade CRX2 repository to OAK repository**

- sling.run.mode.install.options

**14** Delete the following files and folders:

- [CRX\_home]/launchpad/startup
- [CRX\_home]/launchpad/felix/bundle0/BootstrapCommandFile\_timestamp.txt
- [CRX\_home]/launchpad/sling\_bootstrap.txt
- [CRX\_home]/launchpad/org.apache.sling.launchpad.base.jar

**15** Copy the datastore folder from the [backup\_folder]/ to [CRX\_home]/repository folder.

**16** (Non-Windows environment only) If you have installed AEM forms on JEE as a non-root user, run the following command in the [CRX\_home] folder to provides read, write, and execute permissions to the non-root user.

```
chmod 777 -R
```

**17** Navigate to the [CRX\_home]/install directory and, delete the following jar files, if present:

- dataservices-pkg.zip
- platform-common-pkg.zip
- platform-content-pkg.zip
- platform-security-pkg.zip
- solution-correspondencemanagement-pkg.zip

**18** Start the application server and deploy the adobe-lifecycle-cq-author.ear file located at [AEM\_forms root]\configurationManager\export folder to the application server.

**19** Run the deployed adobe-lifecycle-cq-author.ear file. It starts the author instance of AEM forms server.

***Note:** Application server might take several minutes to start the author instance.*

**20** After the http://[server]:[port]/lc becomes accessible, restart the application server.

### 5.2.3 Upgrade from CRX2 repository to AEM forms RDBMK

AEM forms on JEE supports Oracle 12c and DB2 10.5 as Relational Database MicroKernels (RDBMK). Perform the following steps to upgrade from CRX2 repository to Oracle 12c and DB:

Perform the following steps to upgrade your CRX repository to AEM forms RDBMK environment:

**1** Download and unzip the CRX to OAK migration utility. The utility is available at <https://helpx.adobe.com/content/dam/help/en/aem-forms/6-1/crx2oak-1.2.10.jar.zip>.

**2** Download the following JAR files from Apache website:

- org.apache.servicemix.bundles.commons-dbc-1.4\_3.jar
- org.apache.servicemix.bundles.commons-pool-1.5.4\_4.jar

**3** Shut down the application server.

**4** Open the [CRX\_home]/repository/repository.xml file for editing.

**5** In the repository.xml file, replace the following tag:

```
<SecurityManager class="com.adobe.lifecycle.usermanager.crx.jaas.EmbeddedSecurityManager">
```

with

```
<SecurityManager class="com.day.crx.core.CRXSecurityManager" >
```

6 Save and close the repository.xml file.

7 Run the following command to migrate CRX2 repository:

- To migrate to Oracle 12c, run the following command:

```
java -Xmx2048m -XX:MaxPermSize=512m -cp "[absolute-path-of-jar-file]/crx2oak-1.2.10.jar; [absolute-path-of-jar-file]/org.apache.servicemix.bundles.commons-dbcp-1.4.3.jar; [absolute-path-of-jar-file]/org.apache.servicemix.bundles.commons-pool-1.5.4.4.jar; [AEM-forms-root]/lib/db/oracle/ojdbc6.jar" com.adobe.granite.crx2oak.CRX2Oak [CRX_home]/crx-repository/repository jdbc:oracle:thin:@<Database IP>:1521:[DB instance name] -copy-binaries -user [DB user] -password [DB password]
```

- To migrate to IBM DB2 10.5, run the following command:

```
java -Xmx2048m -XX:MaxPermSize=512m -cp "[absolute-path-of-jar-file]/crx2oak-1.2.10.jar; [absolute-path-of-jar-file]/org.apache.servicemix.bundles.commons-dbcp-1.4.3.jar; [absolute-path-of-jar-file]/org.apache.servicemix.bundles.commons-pool-1.5.4.4.jar; [AEM-forms-root]/lib/db/db2/db2jcc" com.adobe.granite.crx2oak.CRX2Oak [CRX_home]/crx-repository/repository jdbc:db2://[Database IP]:50000/[DB instance name] -copy-binaries -user [DB user] -password [DB password]
```

8 Copy the datastore folder from [CRX\_home]/repository/repository folder to the backup folder created in step 5.

9 Locate and delete the sling.options file from [CRX\_home]/launchpad folder.

10 Delete all the content of the [CRX\_home]/repository/ folder.

11 Open the [CRX\_home]/launchpad/sling.properties file for editing and delete the following properties along with the corresponding text:

- granite.product.version
- org.osgi.framework.system.packages
- osgi-core-packages
- jre-\*
- sling.installer.dir
- felix.cm.dir
- osgi-compendium-services
- sling.run.mode.install.options

12 Delete the following files and folders:

- [CRX\_home]/launchpad/startup
- [CRX\_home]/launchpad/felix/bundle0/BootstrapCommandFile\_timestamp.txt
- [CRX\_home]/launchpad/sling\_bootstrap.txt
- [CRX\_home]/launchpad/org.apache.sling.launchpad.base.jar

13 Copy the datastore folder from the [backup\_folder]/ to [CRX\_home]/repository folder.

14 (Non-Windows environment only) If you have installed AEM forms on JEE as a non-root user, run the following command in the [CRX\_home] folder to provides read, write, and execute permissions to the non-root user.

```
chmod 777 -R
```

15 Navigate to the [CRX\_home]/install directory and, delete the following jar files, if present:

- dataservices-pkg.zip

**Upgrade CRX2 repository to OAK repository**

- platform-common-pkg.zip
- platform-content-pkg.zip
- platform-security-pkg.zip
- solution-correspondencemanagement-pkg.zip

**16** Start the application server and deploy the `adobe-lifecycle-cq-author.ear` file located at `[AEM_forms root]\configurationManager\export` folder to the application server.

**17** Run the deployed `adobe-lifecycle-cq-author.ear` file. It starts the author instance of AEM forms server.

***Note:** Application server might take several minutes to start the author instance.*

**18** After the `http://[server]:[port]/lc` becomes accessible, restart the application server.



# Chapter 6: Post-Deployment Activities

Perform the post-deployment tasks to get started using AEM forms on JEE modules and services after they are installed, configured, and deployed to your application server.

As part of upgrade preparation, put the previous forms server in maintenance mode before starting the upgrade process. Hence, we must disable the maintenance mode of the upgraded server before performing any other post-deployment tasks

## 6.1 Check whether AEM forms on JEE is running in maintenance mode

In a web browser, enter:

```
http://[hostname]:[port]/dsc/servlet/DSCStartupServlet?maintenanceMode=isPaused&user=[administrator username]&password=[password]
```

The status is displayed in the browser window. A status of "true" indicates that the server is running in maintenance mode, and "false" indicates that the server is not in maintenance mode.

**Note:** Returns "true" only if you had put the LiveCycle system in maintenance mode before upgrade.

## 6.2 Turn off maintenance mode

**Note:** Applicable only if you had put the previous LiveCycle system in maintenance mode before upgrade.

In a web browser, enter:

```
http://[hostname]:[port]/dsc/servlet/DSCStartupServlet?maintenanceMode=resume&user=[administrator username]&password=[password]
```

A "now running" message is displayed in the browser window.

See Running AEM forms on JEE in maintenance mode section in [administration help](#) for more information about maintenance mode.

## 6.3 Change the default password of AEM forms on JEE Administrator

AEM forms on JEE 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 AEM forms on JEE administrator user password is set to "password" by default. You must change it in Administration console > Settings > User Management > Users and Groups and at the AEM Configuration Management web console.

#### Change the password in Administration console

- 1 Log into the Administration console using administrator/password credentials.
- 2 Go to **Settings > User Management > Users and Groups**.
- 3 Search for user **Administrator**.
- 4 Click the **Administrator** user.
- 5 In the Login Settings section, Click **Change Password**.
- 6 Specify a new password and click **Save**.
- 7 Re-login using the changed password to verify.

#### Change the password in AEM Configuration Management Web console

- 1 Log into the Configuration Management console using admin/admin credentials. The default URL of console is `http://[server]:[port]/lc/system/console/configMgr`.
- 2 Search and open Adobe Livecycle Client SDK Configuration for editing.
- 3 Specify a new password and click **Save**.

## 6.4 Restarting the JBoss services

After completing the installation, restart the JBoss service to ensure that it is in a clean running state. After an install, the JBoss service will be in a high-memory-use initialization state.

**Note:** When you upgrade to AEM forms on JEE server or deploy a Service pack, ensure that you delete the `[Jboss_root]\server\<server name>\work` and `[Jboss_root]\server\<server name>\tmp` folders before restarting the application server.

## 6.5 Setting the correct date, time, and time zone

Setting the correct date, time, and time zone on all servers connected to your AEM forms on JEE environment will ensure that time-dependent modules, such as Digital Signatures and Acrobat Reader DC extensions, will 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.

## 6.6 Manually enabling SSL for JBoss

During Turnkey installation, the JBoss application server is set up with Secure Sockets Layer (SSL) disabled by default. Enable SSL for JBoss if you want to use AEM forms on JEE Document Security with Adobe Acrobat for securing documents. Enabling SSL requires a signed certificate issued by a trusted certificate authority (CA) like VeriSign. However, you can also generate and use a self-signed certificate to enable SSL.

The following broad tasks are involved in enabling SSL for JBoss on a Turnkey installation:

- 1 Create a keystore using the keytool utility that ships with the Java SDK.
- 2 Generate the certificate or use a certificate issued by a CA.

- 3 Copy the keystore and the certificate files to the JBoss root configuration folder—`[JBoss root]/standalone/configuration`.
- 4 Import the certificate into `[Adobe_JAVA_HOME]/lib/security/cacerts`.
- 5 Update the JBoss `lc_turnkey.xml` file to uncomment the SSL configuration settings and specify reference attributes for the certificate.
- 6 Restart the JBoss server to apply your changes.

## 6.6.1 Enable SSL for JBoss

You can configure SSL for JBoss using Configuration Manager. If you skipped this option, manually configure SSL using the instructions given below:

X.500 distinguished names are used as identifiers when you generate a keystore and a certificate. The `keytool` command that you use to generate a certificate supports the following subparts for the `-dname` option:

**CN:** The complete hostname of the machine for which you're creating the certificate. For example, "machine.adobe.com".

**OU:** The name of a small organizational unit, such as a department or a division. For example, "Purchase".

**O:** The name of the organization. For example, "Adobe Systems".

**L:** The name of a locality or city. For example, "San Jose".

**S:** The name of a state or province. For example, "California".

**C:** A two letter country code. For example, "US".

### 6.6.1.1 Enable SSL for JBoss on a Turnkey installation

- 1 Navigate to `[Adobe_JAVA_HOME]/bin` and type the following command to create the keystore:

```
keytool -genkey -dname "CN=Host Name, OU=Group Name, O=Company Name, L=City Name, S=State,  
C=Country Code" -alias "LC Cert" -keyalg rsa -keypass key_password -keystore  
keystorename.keystore
```

Replace `[Adobe_JAVA_HOME]` with the name of the directory where the JDK is installed, and replace the text in bold with values that correspond to your environment. The Host Name is the fully qualified domain name of the application server.

- 2 Enter the `keystore_password` when prompted for a password.

**Note:** The `keystore_password` entered at this step may be the same password (`key_password`) that you entered in step 1, or may be different.

- 3 Copy the `keystorename.keystore` file to the `[JBoss root]/standalone/configuration` directory by typing the following command:

```
copy keystorename.keystore [JBoss root]/standalone/configuration
```

- 4 Export the certificate file by typing the following command:

```
keytool -export -alias "LC Cert" -file LC_cert.cer -keystore [JBoss  
root]/standalone/configuration/keystorename.keystore
```

- 5 Enter the `keystore_password` when prompted for a password.

- 6 Copy the `LC_cert.cer` file to the `[JBoss root] configuration directory` by typing the following command:

```
copy LC_cert.cer [JBoss root]/standalone/configuration
```

- 7 View the contents of the certificate by typing the following command:

```
keytool -printcert -v -file [JBoss root]\standalone\configuration\LC_cert.cer
```

- 8 If necessary, provide write access to the `cacerts` file in `[Adobe_JAVA_HOME]\jre\lib\security`. Right-click the `cacerts` file, select Properties, and then deselect the Read-only attribute.

- 9 Import the certificate by typing the following command:

```
keytool -import -alias "LC Cert" -file LC_cert.cer -keystore  
[Adobe_JAVA_HOME]\jre\lib\security\cacerts
```

- 10 Type `changeit` as the password. `changeit` is the default password for a Java installation.

- 11 When prompted if you Trust this certificate? [no]:, type `yes`. The confirmation "Certificate was added to keystore" is displayed.

- 12 In a text editor, open the file

```
(JBoss 6.2 Only) [JBoss root]\standalone\configuration\lc_turnkey.xml.
```

- 13 Uncomment the following lines in the `lc_turnkey.xml` file:

```
<!-- SSL/TLS Connector configuration using the admin devl guide keystore <Connector  
port="8443" address="{jboss.bind.address}" maxThreads="100" strategy="ms"  
maxHttpHeaderSize="8192" emptySessionPath="true" scheme="https" secure="true"  
clientAuth="false" keystoreFile="{jboss.server.home.dir}/conf/keystoreFile.keystore"  
keystorePass="keystorePass" sslProtocol = "TLS" />  
-->
```

- 14 For the `keystoreFile` attribute in `lc_turnkey.xml`, specify the path of the keystore file you created. Specify `keystore_password` for the `keystorePass` attribute in `lc_turnkey.xml`.

- 15 Save the `lc_turnkey.xml` file.

- 16 Restart the application server:

- From the **Windows Control Panel**, click **Administrative Tools**, and then click **Services**.
- Select **JBoss for Adobe Experience Manager forms**.
- Select **Action > Stop**.
- Wait for the status of the service to appear as stopped.
- Select **Action > Start**.

## 6.7 Upgrading to Workbench

Once you have completed your AEM forms on JEE server upgrade and verified that it is working properly, install the new version of Workbench in order to continue creating and modifying your AEM forms on JEE applications. See [Installing Your Development Environment](#).

## 6.8 Accessing administration console

administration console is the web-based portal for accessing various configuration pages, where you set run-time properties that control the way AEM forms on JEE operates. When you log in to administration console, you can access User Management, watched folder, and email client configuration, as well as administrative configuration options for other services. 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 to Administration Console is *administrator* and *password*. After you log in the first time, you can access User Management and change the password of the administrator account. (See “[6.9.7 Accessing User Management](#)” on page 35.)

Use the same administrator account and password configured on your previous LiveCycle system.

Before you access administration console, AEM forms on JEE must be deployed and running on your application server.

For information about using the administration web pages, see *administration console Help* (available from the Help menu of the administration console home page).

- 1 Open a web browser and enter this URL:  
`http://localhost:8080/adminui` (local deployment using the default port)
- 2 Log in using the default user name and password:  
**User name:** *administrator*  
**Password:** *password*
- 3 Click **Log in**.
- 4 Click **Services** to access the services’ pages, and click **Settings** to access the Core System Settings, User Management, and Trust Store Management pages.

## 6.9 Accessing AEM forms on JEE applications

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

- Acrobat Reader DC extensions
- Workspace
- PDF Generator
- Document Security

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 [administration help](#).)

### 6.9.1 Access the Acrobat Reader DC extensions web application

**Note:** You must apply a Acrobat Reader DC extensions credential and apply the user roles for a new user. (See “[Configuring credentials for use with Acrobat Reader DC extensions](#)” in *administration help*.)

- 1 Open a web browser and enter this URL:  
`http://localhost:8080/ReaderExtensions`

- 2 Log in using the user name and password for AEM forms on JEE.

***Note:** You must have administrator or superuser privileges to log in. To allow other users to access the Reader Extensions web application, you must create the users in User Management and grant them the Acrobat Reader DC extensions Web Application role.*

## 6.9.2 Access Workspace

- 1 Open a web browser and enter this URL:

`http://localhost:8080/workspace`

- 2 Log in using the user name and password for AEM forms on JEE.

## 6.9.3 Access HTML Workspace

- 1 Open a web browser and enter this URL:

`http://localhost:8080/lc/forms.html`

- 2 Log in using the user name and password for AEM forms on JEE.

## 6.9.4 Access forms manager

- 1 Open a web browser and enter this URL:

`http://localhost:8080/lc/fm`

- 2 Log in using the user name and password for AEM forms on JEE.

## 6.9.5 Access PDF Generator Web Application

- 1 Open a web browser and enter this URL:

`http://localhost:8080/pdfgui`

- 2 Log in using the user name and password for AEM forms on JEE.

## 6.9.6 Access Document Security

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

***Note:** The default administrator user cannot access the Document Security 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 administration console.*

### Access the Document Security end-user web application

- ❖ Open a web browser and enter this URL:

`http://localhost:8080/edc`

### Access the Document Security administration web application

- 1 Open a web browser and enter this URL:

`http://localhost:8080/adminui`

- 2 Click **Services > Document Security**.

For information about setting up users and roles, see Administration Help.

#### Assign the Document Security End User role

- 1 Log in to administration console.
- 2 Click **Settings > User Management > Users and Groups**.
- 3 In the **Find** box, type **a11** 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 **Document Security End User**.
- 7 Click **OK** and then click **Save**.

### 6.9.7 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 AEM forms on JEE modules, including Acrobat Reader DC extensions, Workspace, Document Security, forms workflow, Forms Standard, and PDF Generator.

- 1 Log in to 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.*

## 6.10 Encrypting the plaintext password

To learn how to encrypt the plaintext password in the data source configuration, go to: <http://wiki.jboss.org> and search for *EncryptingDataSourcePasswords*.

## 6.11 Managing the MySQL database

The turnkey installation and configuration supports the transaction-safe storage engine (InnoDB) in MySQL. This means that all AEM forms on JEE must operate in the same storage engine and have consistent version support. (See [MySQL InnoDB Storage Engine](#).)

## 6.12 Configuring AEM forms on JEE to access LDAP

If you did not previously configure Lightweight Directory Access Protocol (LDAP), you can use the following procedure as a guideline when configuring User Management to support authentication using LDAP.

*Note: Skip these steps if you configured LDAP for previous versions. LDAP configurations are migrated during the upgrade process.*

- 1 Open a web browser, navigate to `http://localhost:8080/adminui`, and log in. (See “[6.9 Accessing AEM forms on JEE applications](#)” on page 33.)
- 2 Click **Settings > User Management > Domain Management**, and click **New Enterprise Domain**.
- 3 In the **ID** box, type a unique identifier for the domain.
- 4 In the **Name** box, type a descriptive name for the domain.
- 5 Click **Add Authentication** and, in the **Authentication Provider** list, select **LDAP**.
- 6 Click **OK** and, on the page that appears, click **Add Directory**.
- 7 In the **Profile Name** box, type a name, and then click **Next**.
- 8 Specify values in the **Server**, **Port**, **SSL**, and **Binding** boxes, as required.
- 9 Under **Populate Page With**, select a directory settings option (for example, select **Default Sun ONE values**), and then click **Next**.
- 10 Configure **User Settings** as required, and then click **Next**.
- 11 Configure **Group Settings** as required, and then click either **Test** or **Finish**.
- 12 (Optional) Test your configuration:
  - Click **Test**.
  - In the Test Directory pane, in the **Find** box, enter an object name and, in the **using** box, select the object’s type, such as **Login ID**.
  - Click **Test**. If successful, your object’s details are displayed. You can then click **Back**.
- 13 Click **Finish** to exit the Add Directory page, and then click **OK** again.

## 6.13 Configure Author and Publish instance

Perform the following tasks to configure Author and Publish instance.

### 6.13.1 Configure the Author instance

The Author instance is embedded within the AEM forms on JEE server. This implies that you do not need to make any configuration updates to the Author instance. The instance inherits all the configuration settings from the AEM forms on JEE instance.

### 6.13.2 Configure the Publish instance

You must run separate author and publish instances. You can configure the two instances on the same or on different machines.

*Note: Before configuring the publish instance, ensure that your author instance is configured and deployed. You can verify it by successfully logging in to the Author Instance.*

- 1 Create a new appserver profile for the publish instance on the same or on a different machine.
- 2 On the author instance, navigate to the `[aem-forms root]/configurationManager/export/` directory.
- 3 Copy the `adobe-lifecycle-cq-publish.ear` file and deploy it to the appserver profile created in step 1.



- 4 Copy the `[aem-forms root]/configurationManager/export/crx-repository` directory to the file server for the publish instance.
- 5 Start the publish server with `-Dcom.adobe.livecycle.crx.home=<location for crx-repository>` parameter, where `<location for crx-repository>` is the location where you copied the crx-repository directory for the publish instance.

**Note:** If author and publish instances are on the same machine, ensure that you start the publish instance using a different port.

Now that the publish instance is up and running, you need to configure the two instances to communicate with each other.

**Important:** If you are setting up a cluster, ensure that there are no spaces in your CRX repository path.

### 6.13.3 Communicating between the Author and Publish instances

You need to perform certain configuration changes to enable two-way communication between the Author and Publish instances.

#### 6.13.3.1 Define Publish instance URL

- 1 Go to `http://<authorHost>:<authorPort>/lc/etc/replication/agents.author/publish.html`.
- 2 Click **Edit**. The Agent Settings dialog opens.
- 3 Click the **Transport** tab and specify the URL to the publish server in the URI field.

`http://<publishHost>:<publishPort>/lc/bin/receive?sling:authRequestLogin=1`

**Note:** If there are multiple publish instances managed by a Load Balancer, specify the URL to the load balancer in the URI field.

- 4 Click **OK**.

**Note:** For author clusters, these steps need to be performed on one author instance (preferably a master instance).

#### 6.13.3.2 Define publish instance URL for ActivationManagerImpl

- 1 Go to `http://<authorHost>:<authorPort>/lc/system/console/configMgr`.
- 2 Find and click the Edit icon next to the `com.adobe.livecycle.content.activate.impl.ActivationManagerImpl.name` setting.
- 3 In the ActivationManager Publish URL field, specify the URL for the corresponding publish instance.
- 4 Click **Save**.

#### 6.13.3.3 Configure reverse replication queue

- 1 Go to `http://<authorHost>:<authorPort>/lc/etc/replication/agents.author/publish_reverse.html`.
- 2 Click **Edit**. The Agent Settings dialog opens.
- 3 Click the **Transport** tab and specify the URL to the corresponding publish server in the URI field.

**Note:** If there are multiple publish instances managed by a Load Balancer, specify the URL to the load balancer in the URI field.

- 4 Click **OK**.

#### 6.13.3.4 Define author instance URL

- 1 Go to `http://<publishHost>:<publishPort>/lc/system/console/configMgr`.

- 2 Find and click the Edit icon next to the  
`com.adobe.livecycle.content.activate.impl.VersionRestoreManagerImpl.name` setting.
- 3 In the VersionRestoreManager Author URL field, specify the URL for the corresponding author instance.  
*Note: If there are multiple author instances managed by a Load Balancer, specify the URL to the load balancer in the VersionRestoreManager Author URL field.*
- 4 Click **Save**.

### 6.13.4 Configure IPv6 implementation

*Note: Perform these steps only if the machine/server is using an IPv6 address.*

To map the IPv6 address to a hostname on the server and client machines:

- 1 Navigate to the C:\Windows\System32\drivers\etc directory.
- 2 Open the `hosts` file in a text editor.
- 3 Add a mapping for the IPv6 address to a host name. For example:  
`2001:1890:110b:712b:d1d:9c99:37ef:7281 <ipv6_hostname>`
- 4 Save and close the file.

Ensure that you use the mapped host name instead of the IPv6 address to access the machine.

### 6.13.5 Install Japanese fonts for Adobe Reader

If your document fragments use Japanese fonts, you must install the Japanese Language Support Package for Adobe Reader. Otherwise, your letters and forms will not render and function properly. For installing language packs, visit the downloads page for Adobe Reader.

## 6.14 Configuring the HTML digital signature feature

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

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

## 6.15 Configuring PDF Generator

If you installed PDF Generator as part of your AEM forms solution, complete the following tasks:

- [“6.15.1 Setting environment variables”](#) on page 39
- [“6.15.2 Configuring the application server to use an HTTP proxy server”](#) on page 39
- [“6.15.3 Setting the Adobe PDF Printer as the default printer”](#) on page 40
- [“6.15.4 Configuring Acrobat”](#) on page 40
- [“6.15.5 Installing East Asian characters in Windows Server 2008”](#) on page 41

- [“6.15.6 PDF Generator watched folder performance parameters”](#) on page 41
- [“6.15.7 User accounts for multi-threaded file conversions”](#) on page 41
- [“6.15.8 Adding fonts to PDF Generator”](#) on page 42
- [“6.15.9 Configuring HTML to PDF conversions”](#) on page 43
- [“6.15.10 Installing the PDF Generator Network Printer client”](#) on page 44

## 6.15.1 Setting environment variables

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

Application	Environment variable	Example
Adobe Acrobat DC	Acrobat_PATH	C:\Program Files (x86)\Adobe\Acrobat 2015\Acrobat\Acrobat.exe
Adobe FrameMaker®	FrameMaker_PATH	C:\Program Files\Adobe\FrameMaker8.0\FrameMaker.exe
Notepad	Notepad_PATH	C:\WINDOWS\Notepad.exe
OpenOffice.org	OpenOffice_PATH	C:\Program Files\OpenOffice.org 3.3
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 `OpenOffice_PATH` environment variable is set to the installation folder instead of the path to the executable.

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

## 6.15.2 Configuring the application server to use an HTTP proxy server

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

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

Follow the procedure listed below to start your application server with HTTP proxy host settings.

### 6.15.2.1 Add the setting to JBoss

- 1 Ensure that the JBoss Application Server is stopped.
- 2 From command line, edit the `standalone.conf.bat` or `standalone.conf` script in the `[JBoss root]/bin/` directory.
- 3 Add the following text to the script file:

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

- 4 Save and close the file.

### 6.15.3 Setting the Adobe PDF Printer as the default printer

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 cannot convert files successfully.

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

### 6.15.4 Configuring Acrobat

This procedure can be completed after you run Configuration Manager and deploy AEM forms on JEE to the application server.

- 1 If an earlier version (10.0 or earlier) 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 Pro CD.
  - If you are using the ESD downloads, download Acrobat from your ESD location.
- 3 Install Acrobat DC Pro by running the AutoPlay.exe file.
- 4 Navigate to the additional\scripts folder on the AEM forms on JEE installation media.
- 5 Run the following batch file:  
`Acrobat_for_PDFG_Configuration.bat [aem-forms root]/pdfg_config`
- 6 Open Acrobat and select **Help > Check for updates > Preferences**.
- 7 Deselect **Automatically check for Adobe updates**.

#### 6.15.4.1 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 (such as `C:\Program Files\Adobe\Acrobat 11.0\Acrobat\Acrobat.exe`).

#### 6.15.4.2 Configure native application support

- 1 Install and validate Acrobat as described in the previous procedure.
- 2 Set Adobe PDF printer as the default printer.

#### 6.15.4.3 Changing File Block Settings

Change Microsoft Office trust center settings to enable PDFG to convert older versions of Microsoft office documents.

- 1 Click the **File tab** in any Office 2010 application. Under **Help**, click **Options**; the Options dialog box appears.
- 2 Click **Trust Center**, and then click **Trust Center Settings**.
- 3 In the **Trust Center settings**, click **File Block Settings**.
- 4 In the File Type list, uncheck open for the file type that you want to be converted by PDFG.

#### 6.15.4.4 Network Printer Client installation

PDF Generator includes the Network Printer Client installer for installation of the PDF Generator Internet printer. After the installation is completed, a PDF Generator printer is added to the list of existing printers on the clients computer. This printer can then be used to send documents for conversion to PDF. For more information about installing the Network Printer Client, see *Installing and Deploying AEM forms on JEE* document for your application server.

#### 6.15.5 Installing East Asian characters in Windows Server 2008

When HTML files are converted to PDF by using PDF Generator, 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.

- 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.

#### 6.15.6 PDF Generator watched folder performance parameters

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

- 1 Log in to administration console and click **Services > Application and Services > Service Management**, and click **PDFGConfigService** in the list of services.
- 2 On the Configure PDFGConfigService page, set the following values:  
**PDFG Cleanup Scan Seconds:** 1800  
**Job Expiration Seconds:** 6000  
**Server Conversion Timeout:** 450

#### 6.15.7 User accounts for multi-threaded file conversions

By default, PDF Generator can convert only one OpenOffice, Microsoft Word, or PowerPoint document at a time. If you enable multi-threaded conversions, PDF Generator 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 [“3.4.5.3 Enabling multi-threaded file conversions and multiuser support for PDF Generator”](#) on page 8 section.

- 1 In Configuration Manager, click **Services > PDF Generator > User Accounts**.
- 2 Click **Add** and enter the user name and password of a user who has administrative privileges on the AEM forms on JEE 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 AEM forms on JEE server.

## 6.15.8 Adding fonts to PDF Generator

AEM forms on JEE provides a central repository of fonts which is accessible to all AEM forms on JEE modules. Make the extra fonts available to non-AEM forms on JEE applications on the server so that PDF Generator can use these fonts to create PDF documents that are created with these applications.

### 6.15.8.1 Non-AEM forms on JEE applications

The following list contains non-AEM forms on JEE applications that PDF Generator 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 Publisher
- AutoDesk AutoCAD
- Corel WordPerfect
- Adobe Photoshop CS
- Adobe FrameMaker
- Adobe PageMaker
- Adobe Acrobat Pro

#### 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.

### 6.15.8.2 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 AEM forms on JEE 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.

### 6.15.8.3 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 3.1 and above.
- *Importing Fonts into OpenOffice 2.1* at [http://openoffice.blogspot.com/openoffice/2007/02/font\\_import\\_wiz.html](http://openoffice.blogspot.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 3.1 and later

### 6.15.8.4 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.

## 6.15.9 Configuring HTML to PDF conversions

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

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

- 1 Install and validate Acrobat as described in “6.15.4 Configuring Acrobat” on page 40.
- 2 Locate the pdfgen.api file in the [aem-forms root]\plugins\x86\_win32 directory and copy it to [Acrobat root]\Acrobat\plug\_ins directory.

### 6.15.9.1 Enabling support for Unicode fonts in HTML to PDF conversions

**Important:** 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 root]\Windows\fonts
  - [Windows root]\WINNT\fonts
- 2 Modify the font-name mapping in the cffont.properties file located in the [aem-forms 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 repack 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.

- 3 Ensure that the courier fonts are available at the specified location.

 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`).

- 4 On RedHat Enterprise Linux 6.x, the courier fonts are not available, download the `font-ibm-type1-1.0.3.zip` archive. Extract the archive at `/usr/share/fonts`. Note: Ensure that you read and accept the license.

**Note:** Ensure that you read and accept the license.

- 5 Create a symbolic link from `/usr/share/X11/fonts` to `/usr/share/fonts`.
- 6 Delete all the `.lst` font cache files from the `Html2PdfSvc/bin` and `/usr/share/fonts` directories.

## 6.15.10 Installing the PDF Generator Network Printer client

PDF Generator includes an executable file to install the PDF Generator network printer on a client computer. After the installation is complete, a PDF Generator 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 Network Printer Client installation wizard available in the administration console is supported only on Windows operating system. Ensure that you use a 32-bit JVM to launch the Network Printer Client installation wizard. You will encounter an error if you use a 64-bit JVM.

If the PDFG Network Printer fails to install on Windows, use the operating system's native Add Printer utility and configure it as described in “[6.15.10.2 Configure PDF Generator Network Printer on Windows using the native Add Printer wizard](#)” on page 45.

### 6.15.10.1 Install the PDF Generator Network Printer Client

**Note:** Before installing the PDF Generator network printer client on Windows Server 2008, Ensure that you have the Internet Printing Client feature installed on your Windows Server 2008. For installing the feature, see *Windows Server 2008 Help*.

- 1 Ensure that you successfully installed PDF Generator on your server.
- 2 Do one of the following:
  - From a Windows client computer, enter the following URL in your web browser, where `[host]` is the name of the server where you installed PDF Generator and `[port]` is the application server port used:  
`http://[host]:[port]/pdfg-ipp/install`
  - In administration console, click **Home > Services > PDF Generator Evaluation > PDFG Network Printer**. In the **PDFG Network Printer Installation** section, click **Click here** to launch the PDFG Network Printer Installation.



- 3 On the Configure Internet Port screen, select **Use the specified user account** and provide the credentials of a AEM forms on JEE 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 applied to all users on the client computer, select **Use the same security options for all users**, and then click **OK**.

***Note:** If the users' password changes, then users will need to reinstall the PDFG Network Printer on their computers. You cannot update the password from administration console.*

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

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

#### 6.15.10.2 Configure PDF Generator 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 *[host]* is the server name and *[port]* is the port number where the server is running:  
`http://[host]:[port]/pdfg-ipp/printer`
- 4 On the Configure Internet Port screen, select **Use the specified user account** and provide valid User Management credentials.
- 5 In the **Printer Driver Select** box, choose any standard PostScript-based printer driver (for example, HP Color LaserJet PS).
- 6 Complete the installation by choosing appropriate options (for example, setting this printer as default).

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

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

#### 6.15.10.3 Install and configure the PDF Generator Network Printer Client using Proxy server port forwarding

- 1 Configure port forwarding on the CC Proxy server on a particular port to the AEM forms on JEE server, and disable the authentication at proxy server level (since AEM forms on JEE 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 AEM forms on JEE 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 AEM forms on JEE server.

### 6.15.11 Enable PDF Conversion for Microsoft Word document containing protected fields

The PDF Generator supports Microsoft Word documents containing protected fields. To enable PDF Conversion for Microsoft Word document containing protected fields, change the file type settings:

- 1 In the **administration console**, navigate to **Services > PDF Generator > File Type Settings**, and open your file type settings profile.
- 2 Expand the **Microsoft Word** option and select the **Preserve document markup in Adobe PDF (for Microsoft Office 2003 or later)** option.
- 3 Click **Save As**, specify name of the file type setting, and click **OK**.

## 6.16 Configuring Connector for EMC Documentum

***Note:** AEM forms on JEE supports EMC Documentum, versions 6.7 SP1 and 7.0 only. Make sure your ECM is upgraded accordingly.*

If you installed Connector for EMC Documentum as part of your AEM forms on JEE solution, complete the following procedure to configure the service to connect to the Documentum repository.

### Configure Connector for EMC Documentum

- 1 Locate the `adobe-component-ext.properties` file in the `[JBoss root]/bin` 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`
  - `configservice-impl.jar`
  - `configservice-api.jar`
  - `commons-codec-1.3.jar`
  - `commons-lang-2.4.jar`

The new system property should take on this form:

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

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

- Connector for EMC Documentum 6.7 SP1 and 7.0 only:

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

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

- 3 Open a web browser and enter this URL:

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

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

**User name:** administrator

**Password:** password

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

- Type all 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**. For more information, click the Help link in the upper-right corner of the page in the [Administration help](#).

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

- 7 If the 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://[host]:[port]/adminui`

- 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 these services:

- EMCDocumentumAuthProviderService
- EMCDocumentumContentRepositoryConnector
- EMCDocumentumRepositoryProvider

- 11 Click **Start**. If any of the services do not start correctly, check the settings you completed earlier.

- 12 Do one of the following tasks:

- To use the Documentum Authorization service (EMCDocumentumAuthProviderService) to display content from a Documentum repository in the Resources view of Workbench, continue with this procedure. Using the Documentum Authorization service overrides the default AEM forms on JEE authorization and must be configured to log in to Workbench using Documentum credentials.

- To use the AEM forms on JEE repository, log in to Workbench by using the AEM forms on JEE super administrator credentials (by default, *administrator* and *password*).

You have now completed the required steps for this procedure. Use the credentials provided in step 19 for accessing the default repository in this case and use the default AEM forms on JEE authorization service.

**13** Enable the Remoting and EJB endpoints by doing these tasks:

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

**14** Restart the application server.

**15** Log in to administration console and click **Settings > User Management > Domain Management**.

**16** 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:** Use only single-byte (ASCII) characters for the ID. (See “Adding enterprise domains” in administration help.)*

**17** Add a custom authentication provider:

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

**18** Add an LDAP authentication provider:

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

**19** 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.

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

**21** 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.

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

**23** 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 AEM forms on JEE 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.

**24** Start Workbench 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. If you do not log in using the `username@repository_name`, Workbench attempts to log in to the default repository.

**25** (Optional) To install the AEM forms on JEE 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 *administration help* for information about configuring Workbench with your Documentum repository.

## 6.17 Configuring the Connector for IBM Content Manager

**Note:** See the [Supported Platform Combinations](#) document and ensure that the supported version of ECM is installed.

If you installed the Connector for IBM Content Manager as part of your AEM forms on JEE solution, complete the following procedure to configure the service to connect to the IBM Content Manager datastore.

### Configure Connector for IBM Content Manager

- 1 Locate the `adobe-component-ext.properties` file in the `[JBoss 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 II4C JAR files:
  - `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 looks similar to the following:

*[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/icrm81.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/cmbstdk81.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 datastore 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 datastore from IBMCMConnectorService Property Sheets by using the Use Credentials From Process Context as the login mode, complete the following procedure.

**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 super administrator credentials. Default values set during installation are:

**User name:***administrator*

**Password:***password*

- 3 Click **Services > 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 these tasks:
    - To use the IBM Content Manager Authorization service (IBMCMProviderService) to use content from an IBM Content Manager datastore, in the Processes view of Workbench, continue with this procedure. Using the IBM Content Manager Authorization service overrides the default AEM forms on JEE authorization and must be configured to log in to Workbench by using IBM Content Manager credentials.
    - To use the System Credentials provided in step 4 to use content from an IBM Content Manager datastore, in the Processes view of Workbench, log in to Workbench by using the AEM forms on JEE 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 AEM forms on JEE authorization service for accessing the default repository in this case.
  - 6 Log in to the 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:** Use only single-byte (ASCII) characters for the ID. (See Adding enterprise domains in [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 AEM forms on JEE 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 and log in using the following credentials for IBM Content Manager datastore:

**Username:** `[username]@[repository_name]`

**Password:** `[password]`

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

## 6.18 Configuring the Connector for IBM FileNet

**Note:** AEM forms supports FileNet 5.2 Content Engine; FileNet 5.2 Process Engine is not supported.

AEM forms supports IBM FileNet, versions 5.0, and 5.2 only. Make sure your ECM is upgraded accordingly.

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

- 1 Add a new system property that provides the location of these FileNet Application Engine JAR files:

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

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

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

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

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

```
com.adobe.livecycle.ConnectorforIBMFileNet.ext=
C:/Program Files/FileNet/AE/CE_API/lib2/javaapi.jar,
C:/Program Files/FileNet/AE/CE_API/lib2/log4j-1.2.13.jar
```



2 (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:

(FileNet 5.0 only)

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

(FileNet 5.2 only)

```
RemoteServerUrl = cemp:http://[contentserver_IP]:[contentengine_port]/wsi/FNCEWS40MTOM/
```

- 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.

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

4 Open a web browser and enter this URL:

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

5 Log in using the default user name and password:

**User name:** administrator

**Password:** password

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

7 Provide the Content Engine URL. For example,

```
cemp:http://ContentEngineHostNameorIP:port/wsi/FNCEWS40MTOM?jaasConfigurationName=FileNetP8WSI
```

8 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.

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

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

11 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, continue with this procedure. Using the FileNet Authorization service overrides the default AEM forms authorization and must be configured to log in to Workbench by using FileNet credentials.
- To use the AEM forms repository, log in to Workbench by using the super administrator credentials (by default, *administrator* and *password*). The credentials provided in step 16 use the default AEM forms authorization service for accessing the default repository in this case.

12 Enable the Remoting and EJB endpoints by doing these tasks:

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

13 Restart your application server.

14 Log in to administration console and click **Settings > User Management > Domain Management**.

15 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.

16 Add a custom authentication provider:

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

17 Add an LDAP authentication provider:

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

18 Add an LDAP directory:

- Click **Add Directory** 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.

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 AEM forms roles and click **OK**.
- Click **OK** a second time to confirm the role assignment.

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

23 Start Workbench 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. If you do not log in using the *username@repository name*, Workbench attempts to log in to the default repository specified in step 16.

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

After you configure Connector for IBM FileNet, it is recommended that you see administration help for information about configuring Workbench functions properly with your FileNet repository.

## 6.19 Configuring SharePoint client access

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

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

### 6.19.1 Obtain and edit the share.war file

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

- 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.

### 6.19.2 Deploy the share.war file

- 1 Open the archive file `adobe-contentservices.ear` using an archive utility such as WinRAR from the *[JBoss root]/server/lc\_turnkey/deploy/* directory.
- 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>
```

- 1 Copy the updated application.xml file back to the `adobe-contentservices.ear` archive.

- 2 Save and close the archive.
- 3 Deploy the updated EAR file by copying the updated EAR file to the `[JBoss root]/server/lc_turnkey/deploy/` directory.

## 6.20 Configuring Kerberos authentication support for AEM forms on JEE Connector for Microsoft SharePoint

- 1 Navigate to `[aem-forms root]/jboss/standalone/configuration`.
- 2 Open `lc_turnkey.xml` file for editing.
- 3 Add following text to `lc_turnkey.xml` file:

```
<security-domain name="LC_SP_CONNECTOR">
<authentication>
<login-module code="com.sun.security.auth.module.Krb5LoginModule" flag="required">
</login-module>
</authentication>
</security-domain>
```

- 4 Navigate to `[aem-forms root]/jboss/bin`
- 5 Create a file named `krb5.conf`
- 6 Modify following text according to your environment settings. Add modified text to `krb5.conf` file:

```
[libdefaults]
default_realm = SP.COM
default_checksum = rsa-md5
[realms]
SP.COM = {
kdc = hostname.sp.com
}
[domain_realm]
.sp.com = SP.COM
```

**Note:** You must ensure that,

- **SP.COM** is replaced with the domain name in capital letters.
  - **hostname.sp.com** is replaced with fully qualified domain name of the domain controller and domain name is in small letters.
  - **.sp.com** with replaced with domain name in small letters prefixed with a period (.).
- 7 Copy file `addSpnego.mar` from `[aem-forms root]/configurationManager/bin/Kerberos/modules/` to `[aem-forms root]/jboss /bin/modules/` directory.  
**Note:** If the directory named `modules` does not exists, create it.
  - 8 Restart JBoss Server to complete the configuration.

## 6.21 Enabling CIFS in IPv6 mode

If you want to enable CIFS for Content Services on an IPv6 implementation, you must explicitly add an additional IPv6 address to the machine that hosts AEM forms on JEE. 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 AEM forms on JEE using Configuration Manager. Typically, you should pause the 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 Configuration Manager to deploy the updated EAR file along with other selected EAR files.

**Note:** *If users have accessed the repository through CIFS, then the users will be able to access the repository even after content services rights are revoked.*

### 6.21.1 Edit the contentservices.war file

- 1 Navigate to `[aem-forms 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` 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\`.
- 10 Copy the updated `file-servers.properties` file into the archive under `contentservices.war\WEB-INF\classes\alfresco\extension\`.
- 11 Save the `contentservices.war` file.

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

## 6.22 Uninstalling previous LiveCycle version post upgrade

After you have upgraded your environment to AEM forms on JEE and have verified that it is working properly, perform the following steps to remove the product files for previous LiveCycle version.

- 1 Select **Start > Control Panel > Add or Remove Programs**, select the LiveCycle version to be removed and click **Remove**.
- 2 Select JBoss and MySQL to remove these components.

- 3 Follow the on-screen instructions and then click **Finish**.
- 4 Restart your computer.

## 6.23 Performing a system image backup

After AEM forms on JEE 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 AEM forms on JEE is configured and deployed. The AEM forms on JEE 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 “AEM forms on JEE Backup and Recovery” topic in [administration help](#).

## 6.24 Migrate Correspondence Management assets

If you have upgraded from an earlier version to AEM forms and also had Correspondence Management installed, then run the Correspondence Management migration utility. The migration utility makes the assets of earlier versions compatible with AEM 6.1 forms. You can download the utility from AEM package share. For detailed steps, see <https://helpx.adobe.com/content/help/en/aem-forms/6-1/cm-migration-utility.html>.

## 6.25 Uninstalling AEM forms on JEE

The AEM forms on JEE uninstaller allows you to selectively remove JBoss, MySQL or AEM forms on JEE components if you have a turnkey installation. Before removing MySQL, back up any data you want to keep.

- 1 Select **Start > Control Panel > Add or Remove Programs**, click **Adobe Experience Manager forms** and click **Uninstall/Change**.
- 2 On the Uninstall Adobe Experience Manager forms screen, click **Next**.
- 3 On the Remove Turnkey Products screen, select **JBoss** and **MySQL** to remove these components along with the AEM forms components. Click **Next**.
- 4 On the Stop Enterprise Suite services, click **Uninstall**.
- 5 Follow the on-screen instructions and then click **Finish**.
- 6 Restart your computer if prompted to do so.

**Note:** If you choose to retain JBoss/MySQL while uninstalling AEM forms, you can remove these applications later using the **Add or Remove Programs** utility in Microsoft Windows. Attempts to remove JBoss/MySQL may fail if a JDK is not installed on the server.

# Chapter 7: Advanced Configuration Activities

## 7.1 Enabling Federal Information Processing Standard (FIPS)

AEM forms 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 Configuration Manager during AEM forms configuration or if you enable it but want to turn it off, you can change this setting through 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.

- 1 Log in to 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:** AEM forms 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).*

## 7.2 Enabling AES-256 encryption

To use AES 256 encryption for PDF files, obtain and install the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy files. These files replace the `local_policy.jar` and `US_export_policy.jar` files in the `[Adobe_JAVA_HOME]/jre/lib/security` folder. For example, if you are using Sun JDK 1.7, copy the downloaded files to the `[aem-forms root]/Java/jdk1.7.0_25/jre/lib/security` folder.

You can download these files from *Java SE Downloads*.

# Chapter 8: Appendix - Install Command Line Interface

## 8.1 Overview

AEM forms on JEE provides a command line interface (CLI) for the installation program. The CLI is intended to be used by advanced users of AEM forms on JEE 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 that you have prepared your environment required to run AEM forms on JEE according to the Preparing guide for fresh single server installation, cluster setup, or upgrade, as appropriate. The completed AEM forms on JEE documentation is available at [http://www.adobe.com/go/learn\\_aemforms\\_documentation\\_61](http://www.adobe.com/go/learn_aemforms_documentation_61).

For an overview of the installation process, see Before you begin.

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.

**Note:** 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*.

## 8.2 Install AEM forms on JEE

- 1 Open a command prompt and navigate to the folder in the installation media or your hard disk that contains the installer executable:

- (Windows) server\Disk1\InstData\Windows\_64\VM
- (Linux) server/Disk1/InstData/Linux/NoVM
- (Solaris) server/Disk1/InstData/Solaris/NoVM

- 2 Open a command prompt and run the following command:

- (Windows) `install.exe -i console`
- (Non-Windows) `./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 <b>Enter</b> .  The options are Deutsch, English, and Français. English is the default language.
Upgrade Installation	Select the installation option and press <b>Enter</b> . The options are Perform Update or Skip Update.  If the installer detects a previous LiveCycle installation, you can choose to upgrade the installation. The upgrade installation will use information from the existing install to help in the current installation.
Choose Install Folder	On the Destination screen, press <b>Enter</b> to accept the default directory or type the new installation directory location.  Default install folders are: (Windows): C:\Adobe\Adobe_Experience_Manager_forms (Non-Windows): /opt/adobe/adobe_experience_manager_forms  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.
AEM forms on JEE Server License Agreement	Press <b>Enter</b> to read through the pages of the license agreement.  If you agree to the agreement, type <b>y</b> and press <b>Enter</b> .
Pre-Installation Summary	Review the installation choices you have made and press <b>Enter</b> to continue installation with the choices you have made.  Type <b>back</b> to go back to previous steps and change any of the settings.
Ready To Install	Installer displays the installation directory.  Press <b>Enter</b> to start the installation process.
Installing	During the installation process, the progress bar advances to indicate the progress of installation.
Configuration Manager	Press <b>Enter</b> to complete the installation of AEM forms on JEE.  You can run the Configuration Manager in GUI mode by invoking the following script:  (Windows): C:\Adobe\Adobe_Experience_Manager_forms\configurationManager\bin\ConfigurationManager.bat  (Non-Windows):  /opt/adobe/adobe_experience_manager_forms/configurationManager/bin/ConfigurationManager.sh
Installation Complete	The installation completion screen displays the status and the location of install.  Press <b>Enter</b> to exit the installer.

## 8.3 Error logs

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

- (Windows) [aem-forms root]\log

## 8.4 Uninstalling AEM forms on JEE in console mode

**Note:** If you had installed AEM forms on JEE using the command line option, you can uninstall AEM forms on JEE only by running the uninstaller from the command line. If you want a silent uninstallation, omit the “-i console” flag.

- 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_Experience_Manager_forms\Uninstall_Adobe Experience Manager forms`
- (UNIX-like systems) `cd /opt/adobe/adobe_experience_manager_forms/Uninstall_Adobe Experience Manager forms`

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

- (Windows) `Uninstall Adobe Experience Manager forms -i console`
- (Linux, Solaris) `./Uninstall Adobe Experience Manager forms -i console`

- 3 Follow the on-screen instructions.

Prompt	Description
Uninstall AEM forms on JEE	Press <b>Enter</b> to continue uninstallation. Enter <b>quit</b> to close the uninstall program.
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 AEM forms on JEE are not removed. You must remove these files and folders manually.

# Chapter 9: Appendix - Configuration Manager Command Line Interface

AEM forms on JEE provides a Command Line Interface (CLI) for the Configuration Manager. The CLI is intended to be used by advanced users of AEM forms on JEE, for example in server environments which do not support the use of the Graphical User Interface (GUI) of the Configuration Manager.

## 9.1 Order of operations

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

- 1 Shut down the JBoss application server (Upgrade Turnkey only)
- 2 Migrate the GDS directory contents. (Upgrade Turnkey only)
- 3 Migrate the custom datasources. (Upgrade Turnkey only)
- 4 Configure AEM forms on JEE.
- 5 Configure CRX
- 6 Update AEM forms on JEE core settings.
- 7 Migrate existing turnkey database (Upgrade Turnkey only).
- 8 Initialize AEM forms on JEE.
- 9 Validate AEM forms on JEE.
- 10 Perform critical tasks before component deployment.
- 11 Deploy the AEM forms on JEE modules.
- 12 Validate the AEM forms on JEE module deployment.
- 13 Migrate Data Essential to AEM forms on JEE
- 14 Post deployment configurations.
- 15 Check system readiness for PDF Generator.
- 16 Add administrator user for PDF Generator.
- 17 Configure Connector for IBM Content Manager.
- 18 Configure Connector for IBM FileNet.
- 19 Configure Connector for EMC Documentum.
- 20 Configure Connector for SharePoint.

**Important:** You must restart your application server after you complete Configuration Manager CLI operations.

## 9.2 Command Line Interface property file

The Configuration Manager CLI requires two property files containing the defined properties for your AEM forms on JEE environment. The templates for the properties files, `cli_propertyFile_template.txt` and `cli_propertyFile_upgrade_template.txt`, are located in the `[aem-forms root]/configurationManager/bin` folder.

- `cli_propertyFile_template.txt` file that contains properties that apply to AEM forms on JEE installation and configuration scenarios, in general.
- `cli_propertyFile_upgrade_template.txt` file that contains properties specific to upgrading tasks. Both are required for upgrading from a previous version of AEM forms on JEE.

You must create copies of these files and edit the values. You can customize this file based on the 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 files `cli_propertyFile_template.txt` and `cli_propertyFile_upgrade_template.txt` to use these as a template and edit the values based on the Configuration Manager operations you intend to use.
- Use the GUI of the Configuration Manager and then use the property file created by the GUI version as the CLI version property file. When you run the `[aem-forms root]/configurationManager/bin/ConfigurationManager.bat/sh` file, the `userValuesForCLI.properties` file is created in the `[aem-forms root]/configurationManager/config` directory. You can use this file as input for the 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 Configuration Manager CLI script, you should enter it as `C:\Windows\Fonts`.

**Note:** The following modules depend on `ALC-LFS-ContentRepository`. If you are using the `cli_propertyFile_template.txt` as template then either remove the `ALC-LFS-ContentRepository` from `excludedSolutionComponents` list or add the following LFS in `excludedSolutionComponents` list:

- `ALC-LFS-ProcessManagement`
- `ALC-LFS-CorrespondenceManagement`
- `ALC-LFS-ContentRepository`
- `ALC-LFS-MobileForms`
- `ALC-LFS_FormsManager`

## 9.3 Upgrading AEM forms on JEE Commands

### 9.3.1 (Turnkey and Partial Turnkey only) Shutdown command for JBoss for previous LiveCycle version

**Note:** This command would run only if your AEM forms on JEE Turnkey installation and your previous Turnkey installation coexist on the same machine and you have chosen to perform an upgrade installation while installing AEM forms on JEE in Turnkey mode.

The `upgrade-shutdownPreviousJboss` command shuts down the JBoss service installed with your previous LiveCycle turnkey or partial turnkey installation and sets the service run mode to 'manual'.

This command requires no properties.

### 9.3.2 (Turnkey and Partial Turnkey only) Migrate AEM forms on JEE GDS command

**Note:** This command would run only if your AEM forms on JEE Turnkey installation and your previous Turnkey installation coexist on the same machine and you have chosen to perform an upgrade installation while installing AEM forms on JEE in Turnkey mode.

The `upgrade-migrateGDS` command migrates the Global Document Storage (GDS) directory contents from default GDS location of previous LiveCycle to the default GDS location of AEM forms on JEE.

This command works only for turnkey or partial turnkey installations, and when the default GDS is being used. If a custom GDS is being used, the contents need to be manually migrated. This command also migrates the Connectors for ECM properties file from the AEM forms on JEE JBoss bin directory to the new JBoss location.

This command requires no input properties.

### 9.3.3 (Turnkey and Partial Turnkey only) Migrate AEM forms on JEE datasources command

**Note:** This command would run only if your AEM forms on JEE Turnkey installation and your previous Turnkey installation coexist on the same machine and you have chosen to perform an upgrade installation while installing AEM forms on JEE in Turnkey mode.

The `upgrade-migrateDataSources` command migrates the custom datasource definitions that might have been added to the `lc_turnkey.xml` datasource files in the JBoss `\standalone\configuration` directory. If no custom datasources are defined, skip this command.

The following properties are available for the `upgrade-migrateDataSources` command.

Property	Description	Required	Can be empty
<code>adobeDSDatasourcesToMigrate</code>	A comma separated list of the JNDI_NAME of custom datasources that need to be migrated from the AEM forms on JEE <code>lc_turnkey.xml</code> file	No	Yes
<code>mysqlDSDatasourcesToMigrate</code>	A comma separated list of the JNDI_NAME of custom datasources that need to be migrated from AEM forms on JEE <code>lc_turnkey.xml</code> file.	No	Yes

**Note:** The `mysqlDSDatasourcesToMigrate` property refers to any AEM forms on JEE database that you may have installed, and not just a MySQL database.

### 9.3.4 Update AEM forms on JEE core settings command

The `upgrade-configureCoreSettings` command updates various core settings for AEM forms on JEE. For example, if in your previous LiveCycle system you had the Global Document Storage (GDS) directory set at `C:\LC\GDS` and in AEM forms on JEE you plan to set it to `E:\DS\GDS`, then the new location is not updated in the database unless this CLI command is executed. Other core settings that can be updated in the same manner are: Adobe server fonts directory, Customer fonts directory, System fonts directory, Enable FIPS, AEM forms on JEE temp directory, AEM forms on JEE global document storage directory. The following properties are available for the `upgrade-configureCoreSettings` command.

Property	Description	Required	Can be empty
<code>prevLCVersion</code>	The version of AEM forms on JEE from which upgrade is being performed. Valid values are 9x, ADEP, or 10.0	Yes	No
<code>excludedSolutionComponents</code>	Comma separated list of modules not being upgraded/installed. This is equivalent to deselecting installed/licensed solution components in the Configuration Manager GUI.	No	Yes

### 9.3.5 (Turnkey Only) Migrate existing turnkey database command

The `upgrade-migrateTurnkeyDatabase` command is used to migrate data from 'adobe' schema of a previous LiveCycle Turnkey MySQL installation to 'adobe' schema of AEM forms on JEE Turnkey MySQL installation. Before you run this command, make sure that both the MySQL services are running and are accessible. Also, both the MySQL services should be running on different ports. The following properties are available for the `upgrade-migrateTurnkeyDatabase` command.

**Note:** This command would run only if your AEM forms on JEE Turnkey installation and your previous Turnkey installation coexist on the same machine and you'd chosen to perform an upgrade installation while installing AEM forms on JEE Turnkey.

Property	Description	Required	Can be empty
<code>lcDatabaseHostName</code>	Hostname for AEM forms on JEE turnkey database.	Yes	No
<code>lcDatabaseName</code>	Database name for AEM forms on JEE turnkey database. Default is adobe.	Yes	No
<code>lcDatabaseUserName</code>	Username for accessing AEM forms on JEE turnkey database.	Yes	No
<code>lcDatabaseUserPassword</code>	Password for accessing AEM forms on JEE turnkey database. If you don't provide a password in the file, you will prompted to provide it on command line	No	Yes

Property	Description	Required	Can be empty
IcDatabaseDriverFile	Path to driver file for AEM forms on JEE turnkey database.	Yes	No
IcDatabasePortNumber	Port used by AEM forms on JEE turnkey database.	Yes	No
IcDatabaseType	Type of database configured for AEM forms on JEE turnkey database. Default is mysql.	Yes	No
IcPrevDatabaseHostName	Hostname for previous AEM forms on JEE turnkey database.	Yes	No
IcPrevDatabaseName	Database name for previous AEM forms on JEE turnkey database. Default is adobe.	Yes	No
IcPrevDatabaseUserName	Username for accessing previous AEM forms on JEE turnkey database.	Yes	No
IcPrevDatabaseUserPassword	Password for accessing previous AEM forms on JEE turnkey database. If you don't provide a password in the file, you will prompted to provide it on command line	No	Yes
IcPrevDatabaseDriverFile	Path to driver file for previous AEM forms on JEE turnkey database.	Yes	No
IcPrevDatabasePortNumber	The port used by previous AEM forms on JEE turnkey database.	Yes	No
IcPrevDatabaseType	Type of database configured for previous AEM forms on JEE turnkey database. Default is mysql.	Yes	No

### 9.3.6 Perform critical tasks before component deployment command

The `upgrade-configurePreDeploy` command is used to execute plug-ins to upgrade the components of your previous LiveCycle installation, and make them compatible with AEM forms on JEE, before these components are actually deployed on the AEM forms on JEE Server. The following properties are available for the `upgrade-configurePreDeploy` command.

Property	Description	Required	Can be empty
prevLCVersion	The version of AEM forms on JEE being upgraded. Valid values are 9x, ADEP, or 10.0	Yes	No
excludedSolutionComponents	Comma separated list of components not being installed. This is equivalent to deselecting installed/licensed solution components in the Configuration Manager GUI.	No	Yes

### 9.3.7 Post-deployment Configuration command

The `upgrade-configurePostDeploy` command does the actual upgrade of the system and is run after AEM forms on JEE EAR files and modules have been deployed.

The following properties are available for the `upgrade-configurePostDeploy` command:

Property	Description	Required	Can be empty
prevLCVersion	The version of AEM forms on JEE being upgraded. Valid values are 821 or 9x .	Yes	No
excludedSolutionComponents	Comma separated list of AEM forms on JEE components not being installed. This is equivalent to deselecting installed/licensed solution components in the GUI.	No	Yes
jboss.clientjar.location	The location of the jbossall-client.jar file (JBoss only)	Yes	Yes

#### AEM forms on JEE Host and Authorization information

Property	Description	Required	Can be empty
LCHost	Hostname of the AEM forms on JEE Server.	Yes	No
LCPort	Port number on which AEM forms on JEE application server is configured.	Yes	No
lcJndiPort	JNDI port corresponding to AEM forms on JEE application server.	Yes	No



Property	Description	Required	Can be empty
localServer.appServerRootDir	This is used to access appserver client JAR files. (Local application server root directory required for WebLogic and WebSphere only)	Yes	Yes
LCAdminUserID	Username of AEM forms on JEE administrator user	Yes	No
LCAdminPassword	Password for administrator user. If you don't provide a password in the file, you will prompted to provide it on command line	No	Yes

#### AEM forms on JEE Database information

Property	Description	Required	Can be empty
lcDatabaseType	Type of database configured for AEM forms on JEE. Values can be <code>mysql</code> , <code>db2</code> , <code>oracle</code> , or <code>sqlserver</code>	Yes	No
lcDatabaseHostName	Hostname for the AEM forms on JEE database.	Yes	No
lcDatabasePortNumber	The port number for the AEM forms on JEE database.	Yes	No
lcDatabaseDriverFile	Path to driver file for the AEM forms on JEE database.	Yes	No
lcDatabaseUserName	Username for accessing the AEM forms on JEE database.	Yes	No
lcDatabaseName	AEM forms on JEE database name. Default is <code>adobe</code> .	Yes	No
lcDatabaseUserPassword	Password for accessing database. If you don't provide a password in the file, you will prompted to provide it on command line	No	Yes

#### ECM Form template Migration properties

Property	Description	Required	Can be empty
skipFormTemplatesImport	Whether to import form templates from ECM repositories to AEM forms on JEE native repository or skip this step. If set to <code>false</code> , the template files (see the next two properties) containing a list of template names to migrate should be provided.	No	Yes
documentumFormTemplatesFile	File containing a list of form templates to migrate from EMC Documentum repository to AEM forms on JEE Native repository. This file is generated using the <code>upgrade-getFormTemplatesToMigrate</code> command.	No	Yes
filenetFormTemplatesFile	File containing a list of form templates to be migrated from IBM FileNet repository to AEM forms on JEE Native repository. This file is generated using the <code>upgrade-getFormTemplatesToMigrate</code> command.	No	Yes

## 9.4 General configuration properties

### 9.4.1 Common properties

Common properties are:

**AEM forms on JEE Server specific properties:** Required for the Initialize AEM forms on JEE and Deploy AEM forms on JEE Components operations.

These properties are required for the following operations:

- Initialize AEM forms on JEE
- Deploy AEM forms on JEE components.

Property	Values	Description
<i>AEM forms on JEE Server specific properties</i>		
LCHost	String	The hostname of the server where AEM forms on JEE will be deployed.
LCPort	Integer	The web port number where AEM forms on JEE will be deployed.
excludedSolutionComponents	String. Values include: ALC-LFS-Forms, ALC-LFS-ConnectorEMCDocumentum, ALC-LFS-ConnectorIBMFileNet, ALC-LFS-ConnectorIBMContentManager, ALC-LFS-DigitalSignatures, ALC-LFS-DataCapture, ALC-LFS-Output, ALC-LFS-PDFGenerator, ALC-LFS-ProcessManagement, ALC-LFS-ReaderExtensions, ALC-LFS-RightsManagement ALC-LFS-CorrespondenceManagement, ALC-LFS-ContentRepository, ALC-LFS-MobileForms, ALC-LFS_FormsManager	(Optional) List the AEM forms on JEE modules you do not want to configure. Specify the excluded modules in a comma separated list.
includeCentralMigrationService	true: to include service false: to exclude service	The property to include or exclude Central Migration Bridge Service.
CRX Content repository  The following properties are specified in the cli_propertyFile_crx_template.txt file.	true:  false:	
contentRepository.rootDir		Path of the CRX repository.

Property	Values	Description
is.new.installation.of.crx.repository	true: to create a new repository false: to upgrade an existing repository	If the content repository did not exist before upgrade and you have installed the Content Repository for the very first time then set the value to true.
use.crx3.mongo	true: false:	If you have performed a fresh installation, to use Mongo DB with CRX3 set value to true. If the value is false CRX3 TAR is configured.
mongo.db.uri	<URI of Mongo DB>	If you are using Mongo DB, set URI of Mongo DB
mongo.db.name	<name of Mongo DB>	If you are using Mongo DB, provide name of Mongo DB instance
use.crx3.rdb.mk	true: false:	When the value of this property is true, the CRX repository is configured with RDB MK. The default value is false where the repository is configured as CRX3 TAR.  <i><b>Note:</b> Clustered environments with relational databases are now supported for production use under a "gated" program. If you intend to use a relational database in a clustered environment, contact AEM Forms product team at forms_documents@adobe.com for approval. Also ensure that the mandatory patches are installed and configured.</i>

## 9.4.2 Configure AEM forms on JEE properties

These properties only apply to the configure AEM forms on JEE 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. This path 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.  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.

### 9.4.3 Configure or validate application server properties

#### 9.4.4 Initialize AEM forms on JEE properties

These initialize AEM forms on JEE properties only apply to the initialize AEM forms on JEE operation.

Property	Values	Description
For more information, see <a href="#">"9.4.1 Common properties"</a> on page 70		

#### 9.4.5 Deploy AEM forms on JEE Components properties

These properties apply to the following operations:

- Deploy AEM forms on JEE Components
- Validate AEM forms on JEE Component Deployment
- Validate AEM forms on JEE Server.

Property	Values	Description
You must configure the AEM forms on JEE Server Information section. For more information, see <a href="#">"9.4.1 Common properties"</a> on page 70		
LCAdminUserID	String	The user ID to assign to the AEM forms on JEE Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the AEM forms on JEE Administrator user. This password is used to login to the Administrator Console.

#### 9.4.6 Add administrator user for PDF Generator

These properties apply only to the adding administrator user for PDF Generator operation. These properties are present in cli\_propertyFile\_pdfg\_template.txt

Property	Values	Description
LCHost	String	Hostname where AEM forms on JEE Server is installed.
LCPort	Integer	Port number where AEM forms on JEE application server is configured
LCAdminUserID	String	The user ID to assign to the AEM forms on JEE Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the AEM forms on JEE Administrator user. This password is used to login to the Administrator Console.
LCServerMachineAdminUser	String	The user ID of the Administrator user of the Operation System hosting AEM forms on JEE
LCServerMachineAdminUserPasswd	String	The password of the Administrator user of the Operation System hosting AEM forms on JEE

### 9.4.7 Configure Connector for IBM Content Manager

**Note:** The following properties are specified in the `cli_propertyFile_ecm_ibmcm_template.txt` file.

Property	Values	Description
LCHost	String	Hostname where AEM forms on JEE Server is installed.
LCPort	Integer	Port number where AEM forms on JEE application server is configured
LCAdminUserID	String	The user ID to assign to the AEM forms on JEE Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the AEM forms on JEE Administrator user. This password is used to login to the Administrator Console.
jndiPortNumber	String	JNDI port corresponding to AEM forms on JEE application server.
jboss.clientjar.location	String	The location of the jbossall-client.jar file (JBoss only)
CDVTopology.appserverrootdir	String	The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy AEM forms on JEE)
ConfigureIBMCM	true or false	Specify true to configure Connector for IBM Content Manager
IBMCMClientPathDirectory	String	Location of IBM Content Manager client installation directory.
DataStoreName	String	Name of the DataStore of IBM Content Manager Server that you want to connect to

Property	Values	Description
IBMCMUsername	String	The user name assign to the IBM Content Manager Administrator user. This User ID is used to login to the IBM Content Manager.
IBMCMPassword	String	The password to assign to the IBM Content Manager Administrator user. This password is used to login to the IBM Content Manager.
ConnectionString	String	Additional arguments used in the connection string to connect to IBM Content Manager(Optional).

### 9.4.8 Configure Connector for IBM FileNet

*Note: The following properties are specified in the cli\_propertyFile\_ecm\_filenet\_template.txt file.*

Property	Values	Description
LCHost	String	Hostname where AEM forms on JEE Server is installed.
LCPort	Integer	Port number where AEM forms on JEE application server is configured
LCAdminUserID	String	The user ID to assign to the AEM forms on JEE Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the AEM forms on JEE Administrator user. This password is used to login to the Administrator Console.
jndiPortNumber	String	JNDI port corresponding to AEM forms on JEE application server.
jboss.clientjar.location	String	The location of the jbossall-client.jar file (JBoss only)
CDVTopology.appserverrootdir	String	The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy AEM forms on JEE)
ConfigureFilenetCE	true or false	Specify true to configure Connector for IBM FileNet
FilenetConfigureCEVersion	String	The FileNet client version to configure. Specify FilenetClientVersion5.0 or FilenetClientVersion5.2
FilenetCEClientPathDirectory	String	Location of IBM FileNet Content Manager client installation directory.
ContentEngineName	String	Hostname or IP address of the machine where IBM FileNet Content Engine is installed
ContentEnginePort	String	The port number used by IBM FileNet Content Engine
CredentialProtectionSchema	CLEAR or SYMMETRIC	Specify the level of protection.

Property	Values	Description
EncryptionFileLocation	String	Location of the encryption file. This is required only when you select SYMMETRIC option for CredentialProtectionSchema attribute.  Use a forward slash (/) or double backward slashes (\\) as a path separator.
DefaultObjectStore	String	Name of the ObjectStore for the Connector for IBM FileNet Content Server.
FilenetContentEngineUsername	String	The user ID to connect to the IBM FileNet Content server.  The user ID with read-access privileges would be allowed to connect to the Default object Store.
FilenetContentEnginePassword	String	The password to assigned to the IBM FileNet user. This password is used to connect to Default object Store.
ConfigureFilenetPE	true or false	Specify true to configure Connector for IBM FileNet
FilenetPEClientPathDirectory	String	Location of IBM FileNet client installation directory
FilenetProcessEngineHostname	String	Hostname or IP address of the process router.
FilenetProcessEnginePortNumber	Integer	Port number for IBM FileNet Content Server
FilenetPERouterURLConnectionPoint	String	Name of the process router.
FilenetProcessEngineUsername	String	The user ID to connect to the IBM FileNet Content Server
FilenetProcessEnginePassword	String	The password to connect to the IBM FileNet Content Server

## 9.4.9 Configure Connector for EMC Documentum

**Note:** The following properties are specified in the `cli_propertyFile_ecm_documentum_template.txt` file.

Property	Values	Description
LCHost	String	Hostname where AEM forms on JEE Server is installed.
LCPort	Integer	Port number where AEM forms on JEE application server is configured
LCAdminUserID	String	The user ID to assign to the AEM forms on JEE Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the AEM forms on JEE Administrator user. This password is used to login to the Administrator Console.
jndiPortNumber	String	JNDI port corresponding to AEM forms on JEE application server.
jboss.clientjar.location	String	The location of the jbossall-client.jar file (JBoss only)

Property	Values	Description
CDVTopology.appserverrootdir	String	The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy AEM forms on JEE)
ConfigureDocumentum	true or false	Specify true to configure Connector for EMC Documentum
DocumentumClientVersion	String	The EMC Documentum client version to configure. Specify DocumentumClientVersion6.7 or DocumentumClientVersion7.0
DocumentumClientPathDirectory	String	Location of EMC Documentum client installation directory
ConnectionBrokerHostName	String	Hostname or IP address of the EMC Documentum Content Server.
ConnectionBrokerPortNumber	String	Port number for EMC Documentum Content Server
DocumentumUsername	String	The user ID to connect to the EMC Documentum Content Server.
DocumentumPassword	String	The password ID to connect to the EMC Documentum Content Server.
DocumentumDefaultRepositoryName	String	Name of the default repository of MC Documentum Content Server

### 9.4.10 Configure Connector for Microsoft SharePoint

**Note:** The following properties are specified in the `cli_propertyFile_ecm_sharepoint_template.txt` file.

Property	Values	Description
LCHost	String	Hostname where AEM forms on JEE Server is installed.
LCPort	Integer	Port number where AEM forms on JEE application server is configured
LCAdminUserID	String	The user ID to assign to the AEM forms on JEE Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the AEM forms on JEE Administrator user. This password is used to login to the Administrator Console.
jndiPortNumber	String	JNDI port corresponding to AEM forms on JEE application server.
jboss.clientjar.location	String	The location of the jbossall-client.jar file (JBoss only)
CDVTopology.appserverrootdir	String	The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy AEM forms on JEE)



Property	Values	Description
ConfigureSharePoint	true or false	Specify true to configure Connector for Microsoft SharePoint
SharePointServerAddress	String	Hostname or IP address of the Sharepoint Server
SharePointUsername	String	The user ID to connect to the Sharepoint Server
SharePointPassword	String	The password to connect to the Sharepoint Server
SharePointDomain	String	The Domain Name of the Sharepoint Server
ConnectionString	String	Additional arguments used in the connection string to connect to the Sharepoint Server(optional)

### 9.4.11 Command Line Interface Usage

Once you have configured your property file, you must navigate to the *[AEM forms on JEE root]/configurationManager/bin* folder.

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

#### 9.4.11.1 Configure CRX CLI Usage

The Configure CRX Repository requires the following syntax:

```
configureCRXRepository -f <propertyFile>
```

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.

#### 9.4.11.2 Initialize AEM forms on JEE CLI Usage

The initialize AEM forms on JEE operation requires the following syntax:

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

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.

#### 9.4.11.3 Validate AEM forms on JEE Server CLI Usage

The Validate AEM forms on JEE Server operation is optional and requires the following syntax:

```
validateAEMformsserver -f <propertyFile> -LCAdminPassword <password>
```

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.
- `-LCAdminPassword <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.

#### 9.4.11.4 Deploy AEM forms on JEE Components CLI Usage

The Deploy AEM forms on JEE Components operation requires the following syntax:

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

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.
- -LCAdminPassword <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.

#### 9.4.11.5 Validate AEM forms on JEE Component Deployment CLI Usage

The Validate AEM forms on JEE Component Deployment operation is optional and requires the following syntax:

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

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.
- -LCAdminPassword <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.

#### 9.4.11.6 Check system readiness for PDF Generator

The Checking system readiness for PDF Generator operation requires the following syntax:

```
pdfg-checkSystemReadiness
```

#### 9.4.11.7 Adding administrator user for PDF Generator

The adding administrator user for PDF Generator operation requires the following syntax:

```
pdfg-addAdminUser -f <propertyFile>
```

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.

#### 9.4.11.8 Configure Connector for IBM Content Manager

The Configure Connector for IBM Content Manager operation is optional and requires the following syntax:

```
IBMCM-configurationCLI -f <propertyFile>
```

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.

**Important:** Modify the <propertyFile> called cli\_propertyFile\_ecm\_ibmcm\_template.txt located in the [aem-forms root]\configurationManager\bin\ directory.

- 1 Restart the Application Server.
- 2 Start the following services from administration console
  - IBMCMAuthProviderService

- IBMCMConnectorService

#### 9.4.11.9 Configure Connector for IBM FileNet

The Configure Connector for IBM FileNet operation is optional and requires the following syntax:

filenet-configurationCLI -f <propertyFile>

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.

**Important:** Modify the <propertyFile> called cli\_propertyFile\_ecm\_filenet\_template.txt located in the [aem-forms root]\configurationManager\bin\ directory.

Perform the following steps manually to complete the configuration for Connector for IBM Content Manager.

- 1 Restart the Application Server.
- 2 Start the following services from administration console
  - IBMFileNetAuthProviderService
  - IBMFileNetContentRepositoryConnector
  - IBMFileNetRepositoryProvider
  - IBMFileNetProcessEngineConnector(If configured)

#### 9.4.11.10 Configure Connector for EMC Documentum

The Configure Connector for EMC Documentum operation is optional and requires the following syntax:

documentum-configurationCLI -f <propertyFile>

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.

**Important:** Modify the <propertyFile> called cli\_propertyFile\_ecm\_documentum\_template.txt located in the [aem-forms root]\configurationManager\bin\ directory.

Perform the following steps manually to complete the configuration for Connector for EMC Documentum.

- 1 Restart the Application Server.
- 2 Start the following services from administration console
  - EMCDocumentumAuthProviderService
  - EMCDocumentumRepositoryProvider
  - EMCDocumentumContentRepositoryConnector

#### 9.4.11.11 Configure Connector for Microsoft SharePoint

The Configure Connector for Microsoft SharePoint operation is optional and requires the following syntax:

sharepoint-configurationCLI -f <propertyFile>

Where:

- -f <propertyFile>: A property file containing the required arguments. For more information on creating a property file, see “[9.2 Command Line Interface property file](#)” on page 64.

**Important:** Modify the <propertyFile> called `cli_propertyFile_ecm_sharepoint_template.txt` located in the `[aem-forms root]\configurationManager\bin\` directory.

## 9.5 Examples Usage

From the `C:\Adobe\Adobe_Experience_Manager_forms\configurationManager\bin`, type:

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

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

## 9.6 Configuration Manager CLI Logs

If an error occurs, you can review the CLI logs located here in the `[aem-forms 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.

## 9.7 Next steps

If you used Configuration Manager CLI to configure and deploy AEM forms on JEE, you can now do the following tasks:

- Verify the deployment. (See [Verify the deployment](#).)
- Access administration console. (See [Accessing administration console](#).)
- Configure AEM forms on JEE modules to access LDAP. (See [Configuring LDAP access](#).)

# Chapter 10: Appendix - Configuring the Connector for Microsoft SharePoint on the SharePoint Server

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

The service provides search, read, write, delete, update, and check in/out capabilities with a SharePoint repository. SharePoint users can initiate AEM forms on JEE 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 AEM forms on JEE processes from within SharePoint workflows.

## 10.1 Installation and configuration

After you configured the AEM forms on JEE installation, carry out the following steps to configure the connector on the SharePoint server.

### 10.1.1 System requirements for the SharePoint server

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

- Microsoft SharePoint Server 2007, 2010, or 2013
- Microsoft .NET Framework 3.5

### 10.1.2 Installation considerations

Keep in mind the following before you plan your installation:

- If you are using Microsoft SharePoint Server 2007, the installation process stops and restarts the Windows IIS Server when installing Connector for Microsoft SharePoint on the SharePoint server.
- Before you run the installation, ensure that none of the other sites or web applications is using services on the IIS Server. Consult your IIS Administrator before you proceed with the installation.
- (For Sharepoint server 2010 Farmed installation) The SharePoint administration service is running on the central administration server of sharepoint server Farm. (For Sharepoint server 2010 Standalone installation) The SharePoint administration service is stopped on the sharepoint server.

## 10.2 Installation and configuration on the SharePoint server 2007

### 10.2.1 Extract the web part installer

When you installed the AEM forms on JEE server, the web part installer for SharePoint server named `AdobeConnector-2007.zip` was created in the `[aem-forms root]\plugins\sharepoint` folder. Copy this file to a folder on the Windows server that hosts SharePoint, and then extract the files.

### 10.2.2 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 GACUTILEXE="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 WEBAPPDIR="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.
- **WEBAPPDIR:** Change the path of the WEBAPPDIR 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 AEM forms on JEE feature.
- **STSADM:** Change the path to the folder where the STSADM utility is located.

**Note:** The AEM forms on JEE feature is installed on a web application on the SharePoint server. The AEM forms on JEE feature will be activated only on the site that you have provided the site URL for. You can activate the AEM forms on JEE 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.

### 10.2.3 Run the batch file

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 AEM forms on JEE 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 `WEBAPPDIR\AppData_GlobalResources` directory.
- Installs and activates the AEM forms on JEE features with web server extensions.
- Closes the installer and returns the prompt.

### 10.2.4 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 AEM forms on JEE feature to the web application.

- 1 Navigate to the *sharepoint-webpart* folder that was created when you extracted the AEM forms on JEE 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\<port>`.
- 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.

## 10.3 Installation and configuration on the SharePoint server 2010 and SharePoint server 2013

### 10.3.1 Edit Environment Variables

Append path of `stsadm.exe` to PATH environment variable. The default path of `stsadm.exe` is `C:\Program Files\Common Files\MicrosoftShared\Web Server Extensions\14\BIN`.

### 10.3.2 Extract the web part installer

When you installed the AEM forms on JEE server, the web part installer for SharePoint server files named `Adobe Connector-2010.zip` and `Adobe Connector-2013.zip` are created in the `[aem-forms root]\plugins\sharepoint` folder.

- If you are using Microsoft SharePoint 2010, copy file `Adobe Connector-2010.zip` to a folder on the Windows server that hosts SharePoint, and then extract the copied file.
- If you are using Microsoft SharePoint 2013, copy file `Adobe Connector-2013.zip` to a folder on the Windows server that hosts SharePoint, and then extract the copied file.

### 10.3.3 Install and Activate Connector

- 1 (Optional) Select options for SharePoint Server Context menu before installing connector. See “[10.3.4 Enable/Disable features](#)” on page 84 for detailed steps.

- 2 Run following commands in the listed order to install Connector for SharePoint Server. Ensure that you run `stsadm -o enumsolutions` after each command to verify that the changes have been propagated to all the servers.

Run `stsadm -o enumsolutions` repeatedly, until the resultant xml contains `<state>pending</state>` tag.

```
install.bat -create
install.bat -add
install.bat -deploy
install.bat -install
```

**Note:** For the `install.bat -deploy` command, run `stsadm -o enumsolutions` repeatedly, until the resultant xml contains `<LastOperationResult>DeploymentSucceeded</LastOperationResult>` tag.

- 3 Activate the connector from SharePoint Web Application. To activate the connector:
  - a Open SharePoint Web Application in a browser.
  - b Click **Site Settings**.
  - c Click **Site Collection Features**.
  - d Click Activate for **Adobe Connector** and **Workflow** feature.

### 10.3.4 Enable/Disable features

You can change options of context menu and disable other features on SharePoint Sites. For the Sharepoint Connector installed with default set of options, following options are enabled on SharePoint Server:

- Convert to Adobe PDF
- Enable for commenting by adobe reader.
- Secure with Adobe Policy.
- Invoke AEM forms on JEE Processes

You may make changes to `Elements.xml` file to change above options and to enable or disable another features. To make changes to `Elements.xml`

- 1 Navigate to the folder containing extracted contents of `Adobe Connector-2010.zip` or `Adobe Connector-2013.zip` file.
- 2 Take backup of `Elements.xml` file. The default location of `Elements.xml` is `<Directory containing Extracted Adobe Connector-2010/2013.zip File >\TEMPLATE\FEATURES\LiveCycle\Elements.xml`
- 3 Open the `Elements.xml` file in a text editor.
- 4 Delete or comment the `CustomAction` elements of features that you want to disable .

Docuent Server feature	CustomAction element ID	Description
Reader Exte nsions	LiveCycle.ApplyReaderExtensions	Enables Acrobat Reader DC extensions on PDF documents.
Rights Manageme nt	LiveCycle.RightsManagement.ApplyPolicyToPdf	Rights-protect PDF documents
	LiveCycle.RightsManagement.ApplyPolicyToDoc	Rights-protect Microsoft Word documents



	LiveCycle.RightsManagement.ApplyPolicyToXls	Rights-protect Microsoft Excel documents
	LiveCycle.RightsManagement.ApplyPolicyToPpt	Rights-protect Microsoft PowerPoint documents
	LiveCycle.RightsManagement.ApplyPolicyToDocx	Rights-protect Microsoft Word documents
	LiveCycle.RightsManagement.ApplyPolicyToXlsx	Rights-protect Microsoft Excel documents
	LiveCycle.RightsManagement.ApplyPolicyToPptx	Rights-protect Microsoft PowerPoint documents
	LiveCycle.RightsManagement.ApplyPolicyToDwg	Rights-protect Microsoft Excel documents
	LiveCycle.RightsManagement.ApplyPolicyToDxf	Rights-protect AutoCAD documents
	LiveCycle.RightsManagement.ApplyPolicyToDwf	Rights-protect AutoCAD documents
PDF Generator	LiveCycle.GeneratePDFFromPdf	Convert a PDF created from an image to a text-based PDF if Standard OCR was used as the file type in Site Settings.
	LiveCycle.GeneratePDFFromDoc	Generate PDF from Microsoft Word documents
	LiveCycle.GeneratePDFFromPs	Generate PDF from PostScript files
	LiveCycle.GeneratePDFFromEps	Generate PDF from EPS documents
	LiveCycle.GeneratePDFFromPrn	Generate PDF from PRN files
	LiveCycle.GeneratePDFFromDocx	Generate PDF from Microsoft Word 2007 documents
	LiveCycle.GeneratePDFFromPpt	Generate PDF from Microsoft PowerPoint documents
	LiveCycle.GeneratePDFFromPptx	Generate PDF from Microsoft PowerPoint documents
	LiveCycle.GeneratePDFFromXls	Generate PDF from Microsoft Excel documents
	LiveCycle.GeneratePDFFromXlsx	Generate PDF from Microsoft Excel documents
	LiveCycle.GeneratePDFFromBmp	Generate PDF from BMP files
	LiveCycle.GeneratePDFFromGif	Generate PDF from GIF files
	LiveCycle.GeneratePDFFromJpeg	Generate PDF from JPEG images
	LiveCycle.GeneratePDFFromJpg	Generate PDF from JPG images
	LiveCycle.GeneratePDFFromTiff	Generate PDF from TIFF images
	LiveCycle.GeneratePDFFromTif	Generate PDF from TIF images
	LiveCycle.GeneratePDFFromPng	Generate PDF from PNG images
	LiveCycle.GeneratePDFFromJpf	Generate PDF from JPF images

	LiveCycle.GeneratePDFFromJpx	Generate PDF from JPX images
	LiveCycle.GeneratePDFFromJp2	Generate PDF from JPEG 2000 images
	LiveCycle.GeneratePDFFromJ2k	Generate PDF from JPEG 2000 images
	LiveCycle.GeneratePDFFromJ2c	Generate PDF from JPEG 2000 images
	LiveCycle.GeneratePDFFromJpc	Generate PDF from JPEG 2000 images
	LiveCycle.GeneratePDFFromHtm	Generate PDF from HTM documents
	LiveCycle.GeneratePDFFromHtml	Generate PDF from HTML documents
	LiveCycle.GeneratePDFFromSwf	Generate PDF from SWF files
	LiveCycle.GeneratePDFFromFlv	Generate PDF from Flash video files
	LiveCycle.GeneratePDFFromTxt	Generate PDF from text files
	LiveCycle.GeneratePDFFromRtf	Generate PDF from Rich Text Format files
	LiveCycle.GeneratePDFFromMpp	Generate PDF from Microsoft Project files
	LiveCycle.GeneratePDFFromPub	Generate PDF from Microsoft Publisher documents
Invoke LiveCycle process	LiveCycle.InvokeGenericLiveCycleProcessOnALL	Invoke LiveCycle Process
Adobe Forms Library	AdobeFormsLibrary	Set up SharePoint as the repository for forms data.Remove the CustomAction, ListTemplate and ListInstance elements.
AEM forms user Tasks	LiveCycleUserTasks	Lists the user tasks.Remove the ListTemplate element.
LiveCycle Group Tasks	LiveCycleGroupTasks	Lists the group tasks.Remove the ListTemplate element.

5 Save and close `Elements.xml`

### 10.3.5 Uninstalling Connector for Microsoft SharePoint Server 2010 and Microsoft SharePoint Server 2013

- 1 Deactivate SharePoint Connector from Shrepoint Web Application. To deactivate SharePoint Connector
  - a Open SharePoint Web Application in a browser.
  - b Click **Site Settings**.
  - c Click **Site Collection Features**.
  - d Click Deactivate for **Adobe Connector** and **Adobe LiveCycle Workflow** Features
- 2 On the command prompt, run the following commands in the given order. Ensure that you run `stsadm - o enumsolutions` after each command to verify that the changes have been the propagated to all the servers. Run `stsadm - o enumsolutions` repeatedly, until the resultant xml contains `<state>pending</state>` tag.

```
Install.bat -uninstall  
Install.bat -retract  
Install.bat -delete
```

**Note:** For the *Install.bat -retract* command, run *stsadm -o enumsolutions* repeatedly, until the resultant xml contains *<LastOperationResult>RetractionSucceeded</LastOperationResult>* tag.