CONFIGURING
ADOBE EXPERIENCE MANAGER FORMS
ON JEE ON WEBLOGIC CLUSTER

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Contents

Chapter 1: About This Document

AEM forms on JEE is an enterprise server platform that helps you automate and streamline business processes. AEM forms on JEE comprises the following components:

• J2EE-based Foundation provides server capabilities and runtime environment

• Tools to design, develop, and test AEM forms on JEE Applications

• Modules and Services are deployed on AEM forms on JEE Server and provide functional services

For more information about the AEM forms on JEE architecture and capabilities, see AEM forms on JEE Overview.

This document is part of a larger documentation set available at AEM forms on JEE Documentation page. It is advised that you start with the preparing guide and then move on to installation and configuration guide depending on whether you are performing a fresh installation (single server or cluster setup) or upgrading your existing LiveCycle deployment. For Turnkey deployment, which is only for evaluation purposes, see Installing and Deploying AEM forms on JEE using JBoss Turnkey.

1.1 Who should read this document?

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

1.2 Conventions used in this document

The installation and configuration documentation for AEM forms on JEE uses the following naming conventions for common file paths.

Name	Default value	Description
[aem-forms root]	Windows: C:\Adobe\Adobe_Experience_Manager_forms Linux and Solaris: /opt/adobe/adobe_Experience_Manager_forms	The installation directory that is used for all AEM forms on JEE modules. The installation directory contains subdirectories for Configuration Manager. This directory also includes directories related to third-party products.
[appserver root]	WebLogic Server on Windows: C:\Oracle\Middleware\wlserver_<version>\ WebLogic Server on Linux and Solaris: /opt/Oracle/Middleware/wlserver_<version>/	The home directory of the application server that runs the services that are part of AEM forms on JEE
[server name]	Server1 for WebLogic Server	The name of the server configured on your application server.
WL_HOME	WebLogic Server on Windows: C:\Oracle\Middleware\ WebLogic Server on Linux and Solaris: /opt/Oracle/Middleware/	The install directory for WebLogic Server as specified for the `WL_HOME` environment variable.

Name	Default value	Description
[appserverdomain]	WebLogic Server on Windows: C:\Oracle\Middleware\user_projects\domains\base_domain\ WebLogic Server on Linux and UNIX: /opt/Oracle/Middleware/user_projects/domains/base_domain/	The domain that you configured on WebLogic Server.
[dbserver root]	Depends on the database type and your specification during installation.	The location where the AEM forms on JEE database server is installed.
[AEM_temp_dir]	On Windows: C:\Adobe\Adobe_Experience_Manager_forms\tmp On Linux, UNIX and AIX: /opt/adobe/adobe_experience_manager_forms/tmp	The temporary directory for AEM forms on JEE server.
[CRX_home]	On Windows: C:\Adobe\Adobe_Experience_Manager_forms\crx-repository On Linux, UNIX and AIX /opt/adobe/adobe_experience_manager_forms/crx-repository	The directory that is used for installing the CRX repository.

Note: *This document uses terms Adobe Experience Manager forms, AEM forms on JEE, and LiveCycle interchangeably.*

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

1.3 Additional information

The resources in this table can help you learn more about AEM forms on JEE.

For information about	See
General information about AEM forms on JEE and the modules	AEM forms on JEE Overview
AEM forms on JEE modules	AEM forms on JEE Modules
Other services and products that integrate with AEM forms on JEE	Adobe Developer Connection
Installing Workbench	Installing Workbench
Preparing to Install AEM forms on JEE	Preparing to Install AEM forms on JEE (Server Cluster)
AEM forms on JEE Upgrade Checklist and Planning	AEM forms on JEE Upgrade Checklist and Planning
Troubleshooting	Troubleshooting
Performing administrative tasks	Administration Help
All the documentation available for AEM forms on JEE	AEM forms on JEE documentation
Patch updates, technical notes, and additional information about this product version	Adobe Enterprise Support

Chapter 2: Introduction to Installation, Configuration, and Deployment Process

2.1 Installation, configuration, and deployment overview

Installing, configuring, and deploying AEM forms on JEE involves the following processes:

- **Installing:** Install AEM forms on JEE by running the installation program. Installing AEM forms on JEE places all of the required files onto your computer, within one installation directory structure. The default installation directory is C:\Adobe\Adobe_Experience_Manager_forms (Windows) or /opt/adobe/adobe_Experience_Manager_forms (non-windows); however, you can install the files to a different directory.

- **Configuring:** Configuring AEM forms on JEE modifies various settings that determine how AEM forms on JEE works. Assembling the product places all of the installed components into several deployable EAR and JAR files, according to your configuration instructions. Configure and assemble the components for deployment by running Configuration Manager. You can configure and assemble multiple AEM forms on JEE modules at the same time.

- **Deploying:** Deploying the product involves deploying the assembled EAR files and supporting files to your application server on which you plan to run your AEM forms on JEE. If you have configured multiple modules, the deployable components are packaged within the deployable EAR files. Components and AEM forms on JEE archive files are packaged as JAR files.

    Note: AEM forms on JEE archive file use .lca file extension.

- **Initializing the database:** Initializing the database to be used with AEM forms on JEE creates tables for use with User Management and other components. Deploying any module that connects to the database requires you to initialize the database after the deployment process.

Before you begin to install and configure AEM forms on JEE, ensure that you have prepared your environment as described in the applicable Preparing guides.

2.2 Selecting tasks for configuring and deploying

After you have installed AEM forms on JEE, you can run Configuration Manager to:

- Configure modules in an EAR file for deploying to the application server or cluster of application servers
- Configure properties of the application server or cluster of application servers to support AEM forms on JEE
- Package JDBC modules into AEM forms on JEE EARs (secure data sources)
- Validate application server or cluster configuration
- Deploy AEM forms on JEE EAR files
- Initialize AEM forms on JEE database
- Deploy AEM forms on JEE components
- Validate AEM forms on JEE component deployment

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- Configure AEM forms on JEE components

2.3 Automatic vs. manual configuration

Although you can use Configuration Manager to configure the application server or cluster and set up data sources to the database, you may prefer to complete these steps manually for the following reasons:

- You have other applications running on the application server or cluster, and are concerned about possible conflicting configurations.
- Corporate security procedures for configuration management dictate finer control.
- You are performing deployments where automatic configuration is not available.

In the manual configuration case, do these tasks:

- Use Configuration Manager to configure AEM forms on JEE components with the required font, temp, and GDS directories
- Manually configure the application server, configure data sources, and deploy AEM forms on JEE EAR files
- Run Configuration Manager to initialize the database
- Run Configuration Manager to deploy AEM forms on JEE components and validate the AEM forms on JEE component deployment.
- Configure AEM forms on JEE components.

2.4 AEM forms on JEE installation, configuration, and deployment lists

This section includes lists that you can use to step through the installation and configuration process. A list is provided for installing and configuring when using either the automatic method or the manual method.

- **Automatic method:** Refers to using Configuration Manager to configure the application server, configure and deploy AEM forms on JEE EAR files, initialize the database, and deploy the modules to the server. Use the automatic method if you want to have limited input into the installation, configuration, and deployment of AEM forms on JEE.
- **Manual method:** Refers to using Configuration Manager only to configure AEM forms on JEE EAR files, initialize the database, and deploy the modules to the server. Configuring the application server, connecting to the database, and deploying AEM forms on JEE EAR files to the server is done manually by the administrator by following the instructions later in this document. Use the manual method if you want to have precise input into the installation, configuration, and deployment of AEM forms on JEE. For example, this method may be used in a locked-down server environment.

Note: In a clustering environment, all application server configurations must be performed on each node of the cluster.

2.4.1 Automatic installation and deployment list

The following list includes the steps that are required for installing AEM forms on JEE modules by using the automatic method. Note that your application server or cluster must be installed before you perform the installation:

- Ensure that you have the required software installed on each machine in the target environment. See the appropriate preparing guide at http://www.adobe.com/go/learn_lc_documentation_11.

- Run the installation program only on one machine. (See "4.3 Installing AEM forms on JEE" on page 18.)

- Run Configuration Manager and select all the tasks on the Task Selection screen. It configures the AEM forms on JEE EAR files, configures application server settings, deploys the EAR files and other components to the application server, initializes the AEM forms on JEE database, and verifies the deployment. (See Configuring AEM forms on JEE for Deployment chapter in this guide.)

- Access the Administration Console and User Management. (See "8.1.4.1 Accessing Administration Console" on page 45.)

- (Optional) Configure LDAP access. (See "8.8 Configuring LDAP access" on page 64.)

- Ensure that your clustering environment is prepared.

2.4.2 Manual installation and deployment list

The following list includes the steps that are required for installing AEM forms on JEE by using the manual method. Your application server or cluster must be installed and configured before you perform the installation.

- Ensure that you have the required software installed and configured in the target environment.

- Ensure that you created and configured the cluster in the target environment.

- Run the installation program only on one machine.

- Run Configuration Manager and select the Configure AEM forms on JEE EARs task. This task configures AEM forms on JEE.

  Run the manual configuration steps on the machines where AEM forms on JEE is not installed. For example, copy content repository.

- Configure the Application Server cluster for AEM forms on JEE.

- Deploy the EAR files to the application server. You can do this manually or use Configuration Manager.

  *Note: (**Cluster only**) Ensure that you deploy ear files to the application server on every node of the cluster. When deploying ear files to the application server, ensure that the deployment scope is Cluster .*

  *Note: (**Cluster only**) Ensure that you deploy ear files to the application server on every node of the cluster, When deploying ear files to the application server, ensure that you map modules to the Cluster and the webserver.*

- Run Configuration Manager to initialize the AEM forms on JEE database and deploy AEM forms on JEE component files.

- Access Administration Console and User Management.

- (Optional) Configure LDAP access.

Chapter 3: Creating a WebLogic Server Cluster

You must install the WebLogic Server software on each computer in the cluster. You must also install the WebLogic Administration Server software; however, you can install it on a separate administrative server that is not necessarily one of the servers in the cluster.

Perform the following tasks to install and configure WebLogic Server in a cluster environment:

• Ensure that you properly prepared all computers in the cluster. (See "3.1 Preparing to install" on page 6)

• Install the WebLogic Server software. (See "3.2 Installing WebLogic Server" on page 7.)

• Create the WebLogic domain. (See "3.3 Creating a WebLogic domain" on page 7.)

• Configure the WebLogic Server cluster. (See "3.4 Creating and configuring the WebLogic Server cluster" on page 9.)

• Test the WebLogic Server cluster. (See "3.5 Testing the WebLogic Server cluster" on page 14.)

3.1 Preparing to install

Before you install WebLogic Server on the computers of your cluster, ensure that your system meets the following configuration requirements:

Disk space: Ensure that the partition that will hold the application server has a minimum of 10 GB of free disk space. In addition to the space required to install the product, your environment variable TEMP or TMP must point to a valid temporary directory with at least 500 MB of free disk space. The downloadable executable requires approximately 500 MB, plus an additional 1.0 GB to unpack the images.

IP address settings: All the computers must have a fixed IP address that is managed through a single DNS.

IP multicast: All the computers must fully support IP multicast packet propagation, which means that all routers and other tunneling technologies must be configured to propagate multicast messages to clustered server instances. The network latency must be low enough to ensure that most multicast messages reach their final destination within 200 to 300 milliseconds. Also, the multicast time-to-live (TTL) value for the cluster must be high enough to ensure that routers do not discard multicast packets before they reach their final destination.

Versions: All the computers in the cluster must have the same version and same service pack of WebLogic Server software.

Horizontal clustering: If your configuration is horizontally clustered (that is, instances of WebLogic Server are installed on separate computers), ensure that all computers are on the same network subnet and that the computer clocks are synchronized. (See Preparing to Install LiveCycle (Server Cluster))

Account privileges: (Windows) You must install and run WebLogic Server under a user account that has administrator privileges.

Shared network drive: You must have a secure shared network drive created that all computers in the cluster can access with read and write permissions. (See Preparing to Install LiveCycle (Server Cluster))

Clocks of all the systems on the cluster might be synchronized to a common time server. In Windows domain, clock synchronization is done automatically. You must set-up `Network Time Protocol` on non-windows systems.

3.2 Installing WebLogic Server

The following procedure details how to install WebLogic Server. It is assumed that you downloaded and extracted the installation file to an installation directory, and opened a system terminal and navigated to that directory.

Perform the following tasks to install WebLogic Server:

• Install the WebLogic Server software.

• Create the WebLogic domain.

• (Optional) Create a boot.properties file to enable WebLogic Server, which allows you to start the server without manually entering the user name and password at the command line.

Note: The steps to install WebLogic remain the same for all cluster nodes. However, you can designate any node as the admin server of the cluster. WebLogic Administration Server is required to be running only on one node of the cluster and not on all the nodes.

To install WebLogic Server software:

1 Log on to the computer where you will install WebLogic Server as a user with administrator privileges.

2 Run the installation program that is applicable for your operating system:

(WebLogic Server on 64-bit Windows, Linux, or Solaris) `wls<version number>_generic.jar`

Note: The 64- bit version of WebLogic requires that you download and install the 64-bit JDK (JRockit Java 6 (R28)). The 64-bit JDK files for WebLogic are available at http://www.oracle.com/bea/index.html?CNT=index.htm&FP=/content/products/weblogic/jrockit/.

Note: For the Solaris 64-bit JDK, first install the 32-bit JDK (Sun Java 6) from Sun Java SE Downloads. After installing the 32-bit JDK, download and install the 64-bit patch corresponding to that JDK.

3 Complete the steps of the installation wizard, accepting the default options presented.

4 In the Installation Complete window, deselect **Run Quickstart** and click **Done**.

5 Repeat steps 1 to 4 on each computer in the cluster.

Note: While installing LiveCycle on Windows, you can create a Node Manager Service. To create such service, ensure that you use the same windows account to install the Web Logic Application Server, create the Node Manager Service, install LiveCycle, and run LiveCycle Configuration Manager (LCM). Also ensure that the Windows account has read and write access on all the directories required for configuration.

3.3 Creating a WebLogic domain

You must create your WebLogic domain and also manually configure a time-out setting for the domain. You can optionally create a boot.properties file.

To create a WebLogic domain:

1 Log on to a computer on which you installed WebLogic Server as a user with administrator privileges.

2 From a command prompt, navigate to the directory *[appserver root]*/common/bin and start the WebLogic Configuration Wizard by entering the following command:

- (Windows) `config.cmd`

- (Linux, UNIX) `./config.sh`

3 On the Welcome screen, select **Create a new WebLogic domain** and click **Next**.

4 Select **Generate a domain configured automatically to support the following products** and click **Next**.

5 Enter a domain name.

Note: The domain should be created with the same name on all cluster nodes. All computers in the cluster must use the same domain name. For this document, this defined domain name appears as [domain name].

6 Enter a user name and password, confirm the password by retyping it, and then click **Next**.

7 In the left pane, select **Production Mode**.

8 In the right pane, select **Available JDKs** and the appropriate platform, and then click **Next**:

- (Solaris) **Sun SDK**.

- (All other platforms) **JRockit SDK**.

9 In the Select Optional Configuration Screen, do not select any option.

10 On the Configuration Summary screen, click **Create**.

11 Open a text editor and enter the following lines:

```
username=[username from weblogic install]
password=[password from weblogic install]
```

12 Save the text file as *[WL_HOME]*/user_projects/domains/[domain name]/servers/AdminServer/security/boot.properties.

Note: For more information, go to this site:

13 On the Creating Domain screen, when the configuration creation is 100% complete, click **Done**.

14 Repeat steps 1 to 12 for each additional computer in the cluster.

Configure transaction time-out settings for the cluster

1 Start the Admin server.

Note: You don't need to start Admin server on every node weblogic installed, you may select any node to host Administration server for the cluster.

On the machine hosting the WebLogic Administration Server, open a command window and navigate to*[WL_HOME]*/user_projects/domains/*[domain name]*/bin, and then enter the following command to start WebLogic Administration Server:

- (Windows) `startWebLogic.cmd`

- (Linux, UNIX) `nohup ./startWebLogic.sh&`

2 Start WebLogic Server Administration Console by typing `http://[HostName]:7001/console` in the URL line of a web browser.

3 Log in by entering the user name and password you created when you installed WebLogic Server.

4 Open the WebLogic Server Administration Console on the administration server.

5 Under Domain Structure, click your domain name.

6   Under Change Center, click **Lock & Edit**.

7   Click the **Configuration** tab and then click **JTA**.

8   In the **Abandon Timeout Seconds** box, enter 600.

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

Configuring Admin Server Listen Address

1   In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Servers**

2   Under **Change Center**, click **Lock & Edit**.

3   Under **Servers table**, click **AdminServer**.

4   Provide hostname or IP address in the **Listen Address** box.

5   Click **Save** and **Activate Changes**.

6   Restart the Admin Server.

Note: Provide specific IP address or host name of Admin Server. Do not leave it the Listen Address box blank. Leading the box blank can lead to managed server startup problems and configuration issues.

3.4 Creating and configuring the WebLogic Server cluster

Perform the following tasks to configure your WebLogic Server cluster:

- Create the members of the cluster. (See "3.4.1 Creating the cluster" on page 9.)

- Configure authentication credentials for the servlet container. (See "Setting authentication credentials for the servlet container" on page 12.)

- Configure the node manager for the cluster. (See "3.4.4 Configuring the node manager for the cluster" on page 12.)

- Start the node manager and the nodes of the cluster. (See "3.4.5 Starting the node manager and managed servers" on page 13.)

3.4.1 Creating the cluster

Creating the WebLogic Server cluster requires the following tasks:

- Create the members of the cluster by adding computers (machines), configuring WebLogic Node Manager for each machine, and creating server instances (servers) on the machine. (See, *To create the members of the cluster* section)

- Create the cluster and add the members to the cluster. (See Create the cluster)

To create the members of the cluster:

1   Open the weblogic administration console on the machine where WebLogic Administration Server is running.

2   In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Machines**.

3   Under Change Center, click **Lock & Edit**.

4   Click **New** and enter the computer name in the **Name** box, select the appropriate operating system from the **Machine OS** list, and then click **Next**.

5   In the **Listen Address** box, enter one of these values (where the Node Manager for the machine will listen for incoming connections):

   •   (Recommended) DNS name of the computer on which the Node Manager is installed

   •   Static IP address of the computer on which the Node Manager is installed

   *Note: If Node Manager is listening on a non-default port, enter the port in the **Listen Port** box.*

   click **Finish**.

6   Repeat steps 1 to 4 for each cluster node machine you want to add to the cluster. After you add and configure Node Manager for all the machines of the cluster, proceed to step 6.

7   Under Domain Structure, click **Environment** > **Machines** and, on the Summary of Machines screen click a machine name for one of the machines you just created.

8   Click the **Configuration** tab, click **Servers**, and then click **Add**.

9   Select **Create a new server and associate it with this machine** and click **Next**.

10   In the **Server Name** box, enter your server name (for example, `Server-0`).

11   In the **Server Listen Address** box, enter one of these locations (where the server will listen for incoming connections):

   •   Static IP address of the computer

   •   DNS name of the computer

12   In the **Server Listen Port**, enter a port number for the server, and then click **Finish**.

   Note: Consider the following information when deciding which port number to use:

   •   Do not use the default value 7001 if the managed server is on the same computer as the administration server; the default value 7001 is required by the administration server.

   •   On a horizontal cluster, use any available port on the computer where you are adding the WebLogic Server. Reusing the same port numbers for additional WebLogic Server instances on other computers of the cluster is acceptable and may simplify your cluster administration.

13   Repeat steps 6 to 11 for each machine hosting managed server, and then proceed to step 13.

14   Under Change Center, click **Activate Changes**.

Create the cluster

1   In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Clusters**.

2   Under Change Center, click **Lock & Edit**.

3   In the **Clusters** table, click **New** and configure these options:

   •   In the **Name** box, enter your cluster name (for example, `livecycle_docsvs_cluster`).

   •   In the **Messaging Mode** box, select **Multicast**.

   •   In the **Multicast Address** box, enter an IPv4 multicast address within the range 224.0.0.0 to 239.255.255.255 (for example, type `239.192.0.1`) or, in the case of an IPv6-based cluster, a valid IPv6 address such as `ff01::1`.

   •   In the **Multicast Port** box, enter a port number. Valid values are 1 to 65535. If required, you can change the default value for this box, 7001, to some other valid value.

   Note: The combination of address and port for multicasting must be unique to the LiveCycle cluster (that is, the address and port combination must not be used by any other cluster on the same network)

4   Click **OK** and then click **Activate Changes**.

Assign servers to the cluster

1   In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Clusters**.

2   In the **Cluster** table, select the cluster you created. See create the cluster.

3   Under Change Center, click **Lock & Edit**.

4   On the **Configuration** tab, click **Servers**, and then click **Add**.

5   From the **Select a server** list, select the server name to add, and then click **Finish**.

   Note: Do not add AdminServer to the cluster.

6   Repeat steps 4 to 5 for each server you want to assign to the cluster.

7   Under Change Center, click **Activate Changes**.

3.4.2 Adding a new node to an existing cluster

Do the following to add a new node to an existing cluster:

1   Install the WebLogic Server. See "3.2 Installing WebLogic Server" on page 7for details.

2   Create a WebLogic domain. See "3.3 Creating a WebLogic domain" on page 7for details.

   Important: The Weblogic domain that you create must have the same name as the domain name for the existing cluster to which you want to add a node.

3   Create a new member of the cluster. Do the following:

   •   Add the new node (machine) to the administration server

   •   Configure WebLogic Node Manager for the new node.

   •   Create a server instance on the node.

   See "3.4.1 Creating the cluster" on page 9 for more details.

4   Add the new member to the cluster. See To assign servers to the cluster in "3.4.1 Creating the cluster" on page 9for details.

3.4.3 Setting authentication credentials for the servlet container

You must now set the authentication credentials for the servlet container.

To modify authentication for the servlet container:

1   Ensure that the WebLogic Administration Server is running on the admin server of the cluster.

2   Open a command prompt and run the following script to set the environment and start the WebLogic scripting tool:

   •   (Windows) *[appserver root]*\common\bin\wlst.cmd

   •   (Linux/UNIX) *[appserver root]*/common/bin/wlst.sh

3   Enter the following commands in WLST to update servlet container authentication:

```
connect('[WebLogic username]','[WebLogic password]','[WebLogic URL]')
edit()
startEdit()
cd('SecurityConfiguration')
cd('[domain name]')
set('EnforceValidBasicAuthCredentials','false')
activate()
exit()
```

Note: The WebLogic URL will be in the format t3://hostname:[port], where the default value for [port] is 7001.

4   Restart WebLogic Administration Server.

3.4.4 Configuring the node manager for the cluster

You must configure the node manager for the cluster so that you can use the administration server to start, stop, monitor, and perform other common tasks on the nodes of the cluster from the WebLogic Server Administration Console. Perform these tasks:

- Configure the node manager for the cluster.

- (Horizontal clusters only) Enroll the managed servers with the node manager for the cluster.

- (Horizontal clusters only) Configure the servers of the cluster for mutual access.

Configure the node manager for the cluster

1   In the WebLogic Server Administration Console, under Domain Structure, click your domain name.

2   Click the **Security** tab, on the right pane click **General**, and then click **Advanced** to expand the advanced details.

3   Under Change Center, lick **Lock & Edit**.

4   In the **NodeManager Usernam**e box, change the user name to the value established when creating the domain.

5   In the **NodeManager Password** box, change the password to the value established when creating the domain.

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

Enroll the machine with domain directory.

1   On a managed node machine that is added to the cluster, do one of these tasks:

- (Windows) Navigate to *[appserver root]*\common\bin and enter the command `wlst.cmd`

- (Linux, UNIX) Navigate to *[appserver root]*/common/bin and enter the command `./wlst.sh`

Note: You need to start WebLogic Administration Server only on the node that you wish to designate as the administration server of the cluster.

2   At the **wlst** command prompt, enter the following command to connect to AdminServer:

```
connect('[adminusername]','[adminpassword]','[adminserverURL]')
```

where:

- *[adminusername]* is the user name of the administration server.

- *[adminpassword]* is the password for the administration server user.

- *[adminserverURL]* is the URL to the administration server in the format t3://hostname:*[port]*, where *[port]* is probably 7001.

    Note: For help about this command, type `help('connect')` at the `wlst` command prompt.

3   When connected to the administration server, enter the following command to enroll the secondary computer in the cluster:

```
nmEnroll('[appserver domain]')
```

where *[appserver domain]* is the path to the domain directory on the local computer. For example, on a computer running Windows with WebLogic Server installed in the default directory, the path is C:\Oracle\Middleware\user_projects\domains*[domain name]*.

4 Complete the task by entering the command `exit()`

5 Repeat steps 1 to 4 for each machine of the cluster.

The following procedure applies only to computers in a horizontal cluster.

Note: You must follow these steps every time you restart the WebLogic Administration Server .

Allow mutual access between servers of the cluster

1 Open a text editor and enter the IP address or host name of each computer in the cluster as individual lines, as shown in this example:

```
localhost
127.0.0.1
11.11.11.11
22.22.22.22
```

2 Save the file to each computer in the cluster as nodemanager.hosts in one of these locations:

- (Windows) [appserver root]\common\nodemanager

- (Linux, UNIX) [appserver root]/common/nodemanager

3 In a text editor, open the existing hosts file of any computer in the cluster from one of the following locations:

- (Windows) C:\WINDOWS\system32\drivers\etc

- (Linux, UNIX) /etc

4 Add the IP address and host name of all computers in the cluster.

5 Save the file.

3.4.5 Starting the node manager and managed servers

Use the following procedures to start the node manager and managed servers of the cluster.

To start the node manager:

On each computer of the cluster, open a command window and navigate to the appropriate directory:

- (Windows) *[appserver root]*\server\bin and then enter this command:

  `startNodeManager.cmd`

- (Linux, UNIX) *[appserver root]*/server/bin and then enter this command:

  `nohup ./startNodeManager.sh&`

  Note: `startNodeManager.cmd` should be installed as Windows Services to run silently in the background. (See Using Node Manager.)

  Repeat the previous step for each additional computer in the cluster.

  You can start and stop configured Node Manager using Windows Services. Ensure that the Node Manager Service is running with a user account having administrative privileges.

Start the managed servers

1 In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Clusters**.

2 Click the name of the cluster to start.

3 Click the **Control** tab, select the check box for each server, and then click **Start**.

4 Click **Yes** to confirm that you want to start the servers.

3.5 Testing the WebLogic Server cluster

You can test the WebLogic Server cluster to ensure that all members are active and that the cluster operates according to your design. You should ensure that the WebLogic Server cluster functions correctly before you proceed to install and configure LiveCycle.

To test the WebLogic Server cluster:

1 Ensure that all WebLogic Server instances of the cluster are started.

2 View the server.log file located in *[appserverdomain]*/servers/*[server name]*/logs/*[server name]*.log. Messages such as this one confirm the active members of the cluster:

```
####<Apr 10, 2008 1:58:20 PM CDT> <Info> <Cluster> <hostname> <hostname>
<[ACTIVE] ExecuteThread: '1' for queue: 'weblogic.kernel.Default
(self-tuning)'> <<WLS Kernel>> <> <> <1207853900703> <BEA-000111> <Adding
hostname with ID -5030984338025399S:[hostname]:[7002,7002,-1,-1,-1,-1,-1]:
[domain name]:[servername] to cluster: lc9_cluster view.>
```

3.6 Creating JMX policies for database initialization

You must create JMX policies to ensure that the database for core LiveCycle components initializes correctly.

Complete the following procedures.

3.6.1 Delegating MBean authorization to the realm

Before creating JMX policies, ensure that the security realm is set up to control access to MBeans. For more information, refer to the WebLogic Administration Console documentation.

1 In the WebLogic Administration Console, click **Domain Structure > Security Realms.**

2 Click **myrealm** from the Realms list on the **Summary of Security Realms** page.

3 On the Configuration > General page, ensure that **Use Authorization Providers to Protect JMX Access** is selected. If this option is not selected, perform the following steps:

- Click **Lock & Edit** in the Change Center.

- Select **Use Authorization Providers to Protect JMX Access**.

- Click **Save**.

- In the Change Center, click **Activate Changes**.

- Restart the admin server and the managed server.

3.6.2 Create JMX policies

1 In the WebLogic Administration Console, click **Domain Structure > Security Realms.**

2 On the **Summary of Security Realms** page, click the name of the realm for which you want to modify JMX policies.

3 On the Settings page, click the **Roles and Policies** tab and then click the **Realm Policies** sub tab.

4 In the Name column of the **Policies** table, click **JMX Policy Editor**.

5 On the JMX Policy Editor page, ensure that the **GLOBAL SCOPE** option is selected. Click **Next**.

6 Ensure that the **ALL MBEANS TYPES** option is selected on the next page. Click **Next**.

7 Select the **Attributes: Permission to Write** option and click **Create Policy**.

8 On the Edit JMX Policies page, click **Add Conditions**.

9 Select **Role** from the **Predicate List** drop-down menu and click **Next**.

10 In the **Role Argument Name** box, enter **Anonymous** and click **Add**.

 Note: The Anonymous role is a default WebLogic role for all runtime process users (for example, users required for bootstrapping an application).

11 Click **Finish**.

12 On the Edit JMX Policies page, click **Save**.

13 Repeat steps 1 to 6.

14 On the **JMX Policy Editor - Attributes and Operations** page, select the **Unregister instances of this MBean using MBean server** option and click **Create Policy**.

15 Repeat steps 8 to 12.

3.7 Next steps

You must now install the LiveCycle solution component files. (See Installing the LiveCycle Modules.)

Chapter 4: Installing LiveCycle modules

4.1 Before you begin

4.1.1 Installation overview

Before you install the modules, ensure that your environment includes the software and hardware that is required to run AEM forms on JEE. You should also understand the installation options and have the environment prepared as required. For more information, see the Preparing to Install (Singler Server or Server Cluster) or Preparing to Upgrade guide. The complete AEM forms on JEE documentation is available at
http://www.adobe.com/go/learn_aemforms_tutorials_6_en

AEM forms on JEE also provides a command line interface (CLI) for the installation program. See "Appendix - Install Command Line Interface" on page 83 for instructions on using the CLI. There is also a CLI for Configuration Manager. See "Appendix - Configuration Manager Command Line Interface" on page 86. These CLIs are intended to be used by advanced users of AEM forms on JEE, in server environments that do not support the use of the graphical user interface of the installation program or of Configuration Manager, or for users who wish to implement batch (non-interactive) installation capabilities.

4.1.2 Checking the installer

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

Check the DVD installation media
Ensure that the installation media that you received is not damaged. If you copy the installation media contents to the hard disk of your computer where you are installing AEM forms on JEE, ensure that you copy the entire DVD contents on to the hard disk. To avoid installation errors, do not copy the DVD install image to a directory path that exceeds the Windows maximum path length limit.

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 over the network. Also, do not use special characters in the local path (for example, the character '#').

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

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

Expand the downloaded archive files
If you downloaded the ESD from the Adobe web site, extract the entire lces_server_6_0_0_weblogic_all_win.zip (Windows) or lces_server_6_0_0_weblogic_all_unix.tar.gz (Linux or Solaris) archive file to your computer. For Solaris, use the `gunzip` command to extract the .gz file.

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

4.2 Installation considerations

4.2.1 Installation paths

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

- (Windows) C:\Adobe\Adobe_Experience_Manager_forms

- (Linux or Solaris) /opt/adobe/adobe_experience_manager_forms

Important: When installing AEM forms on JEE, do not use double byte or extended latin characters (such as àâçéèêëïîôùûÄÖßÜ) in the installation path.

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

Note: On a UNIX-like system, when you copy/download files from the source (installation media), install.bin might lose the executable permissions. Ensure that you restore the write-execute permissions after copying/downloading the files.

On Windows, you must have administrator privileges to install AEM forms on JEE.

4.2.2 Temporary directories

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

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

```
WARNING: could not delete temporary file /home/<username>/ismp001/1556006
```

When you complete the installation, you must manually delete the temporary files from the following directories:

- (Windows) TMP or TEMP path as set in the environment variables

- (Linux or Solaris) Logged-in user's home directory

On UNIX-based systems, a non-root user can use the following directory as the temporary directory:

- (Linux) /var/tmp or /usr/tmp

- (Solaris) /var/tmp or /usr/tmp

4.2.3 Installing on a Windows staging platform for Linux or UNIX

AEM forms on JEE can be installed and configured on Windows for deployment on a Linux or UNIX platform. You can use this functionality for installing on a locked-down Linux or UNIX environment. A locked-down environment does not have a graphical user interface installed. For the Linux or UNIX platform, the installation program installs binaries that are used by Configuration Manager to configure the product.

The computer running Windows can then be used as a staging location for the deployable objects, which can be copied to a Linux or UNIX computer for deployment to the application server. The application server on the Windows-based computer, and the Linux or UNIX target computer on which you want to install AEM forms on JEE must be the same.

4.2.4 Configuring the JAVA_HOME environment variable

The JAVA_HOME environment variable must point to the Java SDK for your application server as outlined in the preparing guide. See Preparing to Install AEM forms on JEE (Single Server)or Preparing to Install AEM forms on JEE (Server Cluster)for more information

4.2.5 General installation notes

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

• If you are installing on UNIX-based systems and are not installing directly from a release DVD, set executable permissions on the installation file.

• To avoid permission issues during deployment, ensure that you run the AEM forms on JEE installer and Configuration Manager as the same user who will run the application server.

• If you are installing on UNIX-based computers, the installation directory you specify should not contain any spaces.

• If errors occur during installation, the installation program creates the install.log file, which contains the error messages. This log file is created in the *[aem-forms root]*/log directory.

• Ensure that the JAVA_HOME environment variable points to the directory that contains a compatible JDK. See the supported platform combinationsfor more information.

4.3 Installing AEM forms on JEE

1 Start the installation program:

• (Windows) Navigate to the \server\Disk1\InstData\Windows_64\VM directory on the installation media or folder on your hard disk where you copied the installer. Right-click the install.exe file and select Run as administrator.

• (Non-Windows) Navigate to the appropriate directory, and from a command prompt, type ./install.bin.

  • (Linux) /server/Disk1/InstData/Linux/NoVM

  • (Solaris) /server/Disk1/InstData/Solaris/NoVM

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

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

4 If you have LiveCycle ES4 SP1installed on the computer where you are running the installer, the Preparation for Upgrade screen appears.

Note: If you are performing an out-of-place upgrade on a new machine, this screen is not shown.

• **Prepare to upgrade existing installation to AEM forms on JEE:**

  Do not select this option if you are performing a fresh installation.

• **Install AEM forms on JEE:** Installs AEM forms on JEE afresh.

Select **Next** to continue.

5   On the Choose Install Folder screen, accept the default directory or click **Choose** and navigate to the directory where you intend to install AEM forms on JEE, and then click **Next**. If you type the name of a directory that does not exist, it is created for you.

Click Restore Default Folder to restore the default directory path.

6   **(Windows only)** On the Manual Installation Options screen, select the target deployment option and click **Next**:

   • **Windows (Local):** Select this option if you are installing and deploying AEM forms on JEE on the local server.

   • **Staged (Installed on Windows, targeting remote systems):** Select this option if you plan to use Windows as a staging platform for your deployment and then select the target operating system on the remote server. You can select a UNIX operating system as the target for deployment even if you are installing on Windows. (See "4.2.3 Installing on a Windows staging platform for Linux or UNIX" on page 17.)

   Note: The adobe-livecycle-weblogic.ear fails to deploy on a remote machine if secured datasources are used with WebLogic. For more information, see this Technote.

7   Read the AEM forms on JEE License Agreement, select **I accept** to accept the terms of the license agreement and then click **Next**. If you do not accept the license agreement, you cannot continue.

8   On the Pre-Installation Summary screen, review the details and click **Install**. The installation program displays the progress of the installation.

9   Review the Release Notes information and click **Next**.

10   Review the details on the Install Complete screen.

11   The **Start Configuration Manager** checkbox is selected by default. Click **Done** to run the Configuration Manager.

   Note: (PDF Generator for Windows only) If Acrobat is not installed on all nodes in the cluster, install it now. Then complete the steps in "8.6 Configuring PDF Generator" on page 56.

   *Note: To run Configuration Manager later, deselect the **Start Configuration Manager** option before you click **Done**. You can start Configuration Manager later using the appropriate script in the [aem-forms root]/configurationManager/bin directory. See the Configuring AEM forms on JEE For Deployment chapter in this guide.*

4.4 Configuring the caching locators in clusters (caching using TCP only)

If you implement caching for your LiveCycle cluster by using TCP, configure the TCP locators to find other members of the LiveCycle cluster.

Note: This section does not apply if you implement caching for your LiveCycle cluster by using UDP. (See "6.1.2 Configuring server start arguments" on page 35to configure caching for your LiveCycle cluster using UDP.)

Do the following to enable LiveCycle cluster caching using TCP:

• Ensure that the TCP locators are installed and configured. TCP locators are installed in the *[LiveCycle root]*/lib/caching directory, with a default configuration, when you install LiveCycle. You can change the default configuration. (See Modifying the TCP locators.)

• Configure each node in the LiveCycle cluster to use the locators. (See "6.1.2 Configuring server start arguments" on page 35.)

• Ensure that TCP locators are running.

4.4.1 Modifying TCP locators

The LiveCycle installer creates a default configuration of the TCP locators that is ready to use without modification. You can move the locators to any computer on your network and run them on that computer. The locators do not have to reside on a computer that is a member of the LiveCycle cluster. You can also create additional failover locators to support high availability in your cluster. (See To install the TCP locators:.)

You can also modify the TCP locators to use a port other than the default port (22345). (See To modify the default locator port (Windows): or To modify the default locator port (UNIX):.)

4.4.2 Install TCP locators

1 Log on to the computer where you installed LiveCycle and navigate to the *[LiveCycle root]*/lib/ caching directory.

2 Copy the caching directory and its contents to the computer on which you want to run the locators.

   You can start TCP locator from default location. You should copy the caching directory to another location, only if:

   • You want to run TCP locator on a machine that does not have LiveCycle.

   • You do not want to start TCP locator from default location.

   Note: Do not run TCP locators on all the nodes of the LiveCycle Cluster. It is good practice to run minimum two locators. One TCP locator serves as a primary locator and other TCP locator serves as a secondary locator to handle failover issues. You can add more than two TCP locators as backup locators but it is not mandatory.

4.4.3 Modify the default locator port (Windows)

1 Open the startlocator.bat file in a text editor. The *startlocator* file for a default installation is on the computer where you installed LiveCycle, in the *[LiveCycle root]*/lib/caching directory.

2 Change the default port number (22345) to your preferred port number in the following properties:

   ```
   set port=22345
   ```

   The port number can be any available port between 1025 and 65535.

   Note: Ensure that the port number that is configured here matches the port number that is configured in the JVM argument of each node of the LiveCycle cluster.The port number can be any available port between 1025 and 65535. See Modifying the JBoss run.conf file to complete the configuration.

3 If you are using more than one locator for failover, assign all of such locators to JVM argument `-Dlocators` listed at the end of the startlocator.bat file.

   ```
   -Dlocators=localhost[22345]
   ```

4 (Computers with multiple network cards only) If the computer hosting the locator has multiple network cards, set the following properties in the script:

   ```
   set bindaddr=<bind IP address>
   ```

   Where `<bind IP address>` is the IP address that the locator will listen on. You must specify the `<bind IP address>` for the JVM argument `adobe.cache.cluster-locators` on each node in your LiveCycle cluster.

   Note: If you do not specify the bind address and the bind port in the `startlocator` script, you will be prompted to input these values when you execute the script. However, for IPv6, you must specify the bind address and the bind port in the `startlocator` script itself.

5 Save the edited file.

6 Repeat steps 1 to 4 on any additional locators for your LiveCycle cluster.

4.4.4 Modify the default locator port (UNIX)

1 Open the startlocator.sh file in a text editor. The *startlocator* file for a default installation is located on the computer where you installed LiveCycle, in the *[LiveCycle root]*/lib/caching directory.

2 Change the default port number (22345) to your preferred port number in the following properties:

```
GF_PORT=22345
```

The port number can be any available port between 1025 and 65535.

Important: Ensure that the port number that is configured here matches the port number that is configured in the JVM argument of each node of the LiveCycle cluster.

3 If you are using more than one locator for failover, assign all of such locators to JVM argument `-Dlocators` listed at the end of the startlocator.sh file.

```
-Dlocators=localhost[22345]
```

4 (*Computers with multiple network cards only*) If the computer hosting the locators has multiple network cards, modify the following argument:

```
GF_BIND_ADDRESS="<bind IP address>"
```

Where `<bind IP address>` is the IP address that the locator will listen on. You must specify the `<bind IP address>` for the JVM argument `adobe.cache.cluster-locators` on each node in your LiveCycle cluster.

Note: For IPv6, it is recommended that you specify the bind address and the bind port in the `startlocator` *script itself.*

5 Save the edited file.

6 Repeat steps on any additional locators for your LiveCycle cluster.

4.4.5 Start the TCP locators

To use TCP-based caching for LiveCycle Cluster using TCP locator, you must start the TCP locators before you start your cluster. If the TCP locators are not running when you start the members of the LiveCycle cluster, the LiveCycle cluster will not function.

1 On the computer where the TCP locators are installed, navigate to the caching directory. For a default installation, the TCP locators are installed on the computer where you installed LiveCycle, in the *[LiveCycle root]*/lib/caching directory.

2 (*IPv6 only*) Modify `startlocator.bat` (Windows) or `startlocator.sh` (UNIX) and add the following JVM arguments:

```
-Djava.net.preferIPv6Stack=true
-Djava.net.preferIPv6Addresses=true
```

3 Run the appropriate file:

- (Windows) `startlocator.bat`
- (UNIX) `startlocator.sh`

4 Repeat above steps on any additional locators for your LiveCycle cluster.

Note: (Windows Only)On running startlocator script, you would be prompted to change the default value. You can choose to keep the default values provided in the script or you can provide new values.

4.4.6 Stop TCP locators

1 On the computer where the TCP locators are installed, navigate to the caching directory. For a default installation, the TCP locators are installed on the computer where you installed LiveCycle, in the *[LiveCycle root]*/lib/caching directory.

2 Run the appropriate file:

- (Windows) `stoplocator.bat`

- (UNIX) `stoplocator.sh`

3 Repeat steps 1to 2 on any additional locators for your LiveCycle cluster.

Note: If you are not using the default values in the `startlocator` script and mentioned specific IP address and port values, specify the same values in the `stoplocator` script. Otherwise, the `stoplocator` script may fail to stop the locators.

4.5 Global Document Storage Directory (GDS)

On cluster configurations, create a shared file system for GDS directory accessible to each node on the LiveCycle cluster. This shared file system can be a local storage on a computer or a share on the dedicated network storage system. Ensure that all the nodes of the cluster have read and write permissions on the shared storage. The GDS directory should have low access time, high up time, and should be accessible as UNC style path. For example, \\storagename\shared\GDS.

4.6 Installing the font directories in cluster nodes

You must install the font directories for each node in the cluster, including the LiveCycle fonts that are installed in the *[LiveCycle root]*\fonts directory.

The fonts must exist in the same path on each node, and the directory must have identical contents on all nodes in the cluster. To ensure this, use one of the following options:

- Use a shared directory that all nodes in the cluster can access. Copy fonts from [*LiveCycle root*]\fonts to the shared directory. Using shared fonts directories can slow down the access to the fonts and induces performance issues.

- Copy the *[LiveCycle root]*\fonts directory to each node in the cluster in an identical path.

Record the location where you create these shared directories for later use when you configure LiveCycle using Configuration Manager.

Note: The font directories must be distinct from the GDS directory. However, they may be distinct sibling subdirectories of a single shared parent directory. The requirements and steps mentioned above are applicable to the custom font directories.

4.7 Next steps

You must now configure AEM forms on JEE for deployment. You can also choose to run Configuration Manager later by using the ConfigurationManager.bat or ConfigurationManager.sh file located in *[aem-forms root]*\configurationManager\bin.

Chapter 5: Configuring LiveCycle for deployment

5.1 Considerations when configuring and deploying AEM forms on JEE

5.1.1 General Considerations

- For IPv6, run IPv6 Configuration Manager. For detailed information, see IPv6 support section in prepare to install guide.

- You can override the default font for the Configuration Manager by adding the following JVM argument in `[aem-forms root]\configurationManager\bin\ConfigurationManager.bat` (Windows) or `[aem-forms root]\configurationManager\bin\ConfigurationManager.sh` (Linux, UNIX):

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

  For example:

  `-Dlcm.font.override=SansSerif`

  Restart the Configuration Manager after adding the JVM argument.

- 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.

- During configuration, you must provide the location of the JDBC drivers for your database. The Oracle, SQL Server, and DB2 drivers are in the *[aem-forms root]*/lib/db/*[database]* directory.

- Temporary directory: Do not specify a shared network directory as your temporary directory on cluster configurations. It is recommended to use local directory as a temporary directory. The temporary directory should exist on every node of the cluster and the path of the temporary directory should be same for every node of the cluster.

- Global Document Storage (GDS) directory: Specify the GDS directory that meets the requirements outlined in the Preparing to Install (Single Server or Server Cluster). For latest documentation, see http://www.adobe.com/go/learn_aemforms_tutorials_6_en.

- On cluster environments, several steps need to be performed manually in addition to the automatic configuration that Configuration Manager performs.

5.1.2 CLI versus GUI versions of Configuration Manager

This section describes the GUI version of Configuration Manager. For instructions about using the command line interface (CLI) version of Configuration Manager, see "Appendix - Configuration Manager Command Line Interface" on page 86.

Configuration task	Configuration Manager GUI	Configuration Manager CLI	Manual
Configure AEM forms on JEE	Yes	Yes	No
Configure application server Only WebLogic and WebSphere application servers can be configured using Configuration Manager.	Yes	Yes	Yes
(WebLogic only) Package JDBC Modules into AEM forms on JEE EARs	Yes	No	Yes
Validate application server configuration Only WebLogic and WebSphere application server configurations can be validated using Configuration Manager.	Yes	Yes	Yes
Deploy AEM forms on JEE EARs AEM forms on JEE EARs can be deployed only on WebLogic and WebSphere application servers using Configuration Manager.	Yes	Yes	Yes
Initialize AEM forms on JEE database	Yes	Yes	No
Validate AEM forms on JEE Server connection	Yes	Yes	No
Deploy AEM forms on JEE components	Yes	Yes	No
Validate AEM forms on JEE component deployment	Yes	Yes	Yes
Configure AEM forms on JEE components	Yes	Yes	Yes

5.1.3 Considerations for WebLogic application server

- If you plan to use Configuration Manager to configure the application server or deploy to the application server, the application server must be manually started and running prior to running the Configuration Manager. You can also configure an application server that is installed on a different computer.

- Ensure that you have assigned listen addresses for Administration Server, Node Manager, and Managed Servers, before running Configuration Manager on dual stack machines (IPV6 and IPV4 supported). If you have not already done this, assign listen addresses and restart each of them. For more information, see the *Configuring a WebLogic Server* section in the Preparing to Install AEM forms on JEE guide.

- To secure the data sources, select Package JDBC Modules into AEM forms on JEE EARs (secure datasources).

  Note: Do not select this task if your AEM forms on JEE implementation is required to handle XML Forms. Alternatively, perform the steps in the Technote at http://kb2.adobe.com/cps/844/cpsid_84435.html to secure access to JNDI artifacts on your WebLogic application server.

- Configuration Manager does not support deployment or undeployment of EAR files with custom file names. If your EAR files use a custom file name, you must manually deploy and undeploy them to the application server.

- If you are configuring a remote application server, ensure that an application server is also installed on the same computer as Configuration Manager so that Configuration Manager can use the application server library files.

5.1.4 Considerations while configuring AEM forms on JEE Server Clusters

- You cannot configure settings for IPv6-based clusters using Configuration Manager.

  Note: If your WebLogic cluster is IPv6-based, see "Manually Configuring a WebLogic Server Cluster" on page 34

- It is recommended that you have local server fonts and customer fonts directories at the same path on each node in the cluster. Having shared fonts directories instead of local fonts directories may cause performance issues.

5.1.5 Set the date, time, and time zone

Setting the 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 Reader Extensions function correctly. For example, if a signature appears to have been created in the future, it will not validate.

Servers that require time synchronization are database servers, LDAP servers, HTTP servers and J2EE servers (Application servers).

Note: Ensure that all the machines used in a AEM forms on JEE cluster are time synchronized.

5.2 AEM forms on JEE pre-configuration tasks

*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.*

1 If you did not start Configuration Manager automatically from the installation program, navigate to the *[aem-forms root]*/configurationManager/bin directory and run the ConfigurationManager.bat/ConfigurationManager.sh script.

2 If prompted, select a language for Configuration Manager to use and click **OK.**

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

4 Do not select any option on the Upgrade Task Selection screen and click **Next**.

5 On the Modules screen, select AEM forms on JEE modules you wish to configure and 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.

6 On the Task Selection screen, select all the tasks you want to perform and click **Next**.

5.3 Configuring and deploying AEM forms on JEE

*Note: Press **F1** in Configuration Manager to view Help information for the screen you are viewing.*

Configuring Adobe Experience Manager forms

1 On the Configure Adobe Experience Manager forms(1 of 5) screen, click **Configure** and click **Next** when done.

2 On the Configure Adobe Experience Manager forms (2 of 5) screen, click **Next** to accept the default directory locations, or click **Browse** to navigate to and change the directories that Adobe Experience Manager forms 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.

- 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. To add more directories to the list, click **Add**.

- (Optional) To enable FIPS, ensure that **Enable Federal Information Processing Standards (FIPS) 140-2 cryptography** is selected. Select this option only if you require the Federal Information Processing Standards (FIPS) to be enforced.

3   Click **Browse** on the Configure Adobe Experience Manager forms (3 of 5) screen to specify the **Location of the temporary directory.**

    Note: Ensure that the temporary directory is on the local file system. Adobe Experience Manager forms does not support a temporary directory at a remote location.

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

4   On the Configure Adobe Experience Manager forms(4 of 5) screen, click **Browse** to specify the path for the Global Document Storage (GDS) directory, and click **Next**.

    Note: If you leave the GDS directory field empty, AEM forms on JEE will create the directory in a default location in the application server directory tree. After you finish the configuration steps, you can access the location from Administration Console > Settings > Core System Settings > Configurations.

    Note: You must point to the existing GDS directory or copy its contents to the newly specified location.

    Note: Ensure that GDS directory is accessible from all the nodes of the cluster. For Cluster, do not leave the directory field empty.

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

- **Use GDS**: Use the file system-based GDS for all persistent document storage. This option provides the best performance, and a single location for GDS.

- **Use database**: Use the AEM forms on JEE database for storing the persistent documents and long-lived artifacts. However, the file-system based GDS is also required. Using the database simplifies backup and restore procedures.

    Click **Configure** to configure the AEM forms on JEE EARs with this directory information and, after the configuration is complete, click **Next**.

Configure CRX

❖ The CRX Configuration screen allows you to configure the CRX repository and install it into the AEM forms on JEE Core EAR file.

    On this screen:

1   Specify the path to the repository. The default location is *[aem-forms root]*/crx-repository.

2   Select the repository type, as appropriate. If selecting CRX3 Mongo DB, specify the Mongo database name and URL to the database.

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

4 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.*

Click **Next** to continue.

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) .

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.

(Remote host only) CRX Configuration Summary

❖ For a remote deployment, copy the content from the [*aem-forms root*]/configurationManager/export/crx-quickstart/ directory to the location on the remote host you specified on the CRX Configuration screen.

Note: In case of clustered deployment, you must copy the content from the [aem-forms root]/configurationManager/export/crx-quickstart/ directory to the specified location on all cluster node hosts.

Configuring Acrobat for PDF Generator

❖ On the Configure Acrobat for PDF Generator screen, click **Configure** to run the script that will configure Adobe Acrobat and required environment settings. Click **Next** when complete.

Note: This screen will perform the desired configuration only when Configuration Manager is running locally. You must have Adobe Acrobat XI Pro already installed or this step will fail.

Note: You should manually configure Acrobat for PDF generator on all the other nodes of the cluster. See "8.6 Configuring PDF Generator" on page 56 in the Post Deployment chapter.

Configuration Summary

❖ On the Configure Adobe Experience Manager forms Summary screen, click **Next**. Configured archives are placed in the *[aem-forms root]*/configurationManager/export directory.

Configuring your application server and database

1 On the Application Server Configuration Details screen, provide the information for the fields (all fields are mandatory) and then click **Verify Server Connection**. When the verification has completed successfully, click **Next**.

Note: The Administration and Managed Servers' listen addresses must match the values specified in the WebLogic Administration Console.

Note: You must enter a fully qualified hostname as the Server Instance Name of the WebLogic application server. The hostname is case-sensitive. The default value of `localhost` *will not work.*

Note: For WebLogic Cluster, provide Hostname of Admin Server and the Port Number.

2 On the Application Server Configuration Selection screen, select the tasks for Configuration Manager to perform, and click **Next**.

If you prefer to configure the application server manually, ensure that all the tasks are deselected, then click **Next**.

3 On the Server Settings Configuration screen *(appears only if Configure Server Settings was selected)*, provide the information for the fields, and then click **Next**.

Note: On a WebLogic cluster, the paths for pop3.jar and the JDK must be same on all nodes.

Note: : If you are using UDP then multicast port can be any available port between 1025 and 65535. The multicast port must be unique to the Adobe Experience Manager forms cluster (that is, the port must not be used by any other cluster on the same network, any attempt to use the same port by any other cluster on the same network would result in bootstrap failure).

Note: LCM does not configure `-Dadobe.cache.multicast-address` and `-Dadobe.cache.bind-address` jvm arguments. You may need to configure these arguments manually. See "6.1.2 Configuring server start arguments" on page 35 section for more details.

4 On the Configure Datasource JDBC Driver Classpath screen *(appears if Configure Datasource option with Packaged JDBC Modules is selected)*, provide the path for JDBC driver and click **Next**.

5 On the Datasource Configuration screen *(appears only if Configure Datasource option with globally scoped datasources is selected)*, provide the information for the fields and then click **Test Database Connection**. When the connection is tested successfully, click **Next**. Press F1 for details about the required information.

You can choose to manually configure data sources rather than allowing Configuration Manager to configure them for you. To override automatic data source configuration, select **Manually configure data source now before continuing**, at the bottom of the screen.

Without exiting Configuration Manager, go to the application server administration console, and configure data sources as described in Configuring database connectivity in Installing and Deploying Adobe Experience Manager forms for WebLogic guide.

6 On the Application Server Configuration screen, click **Configure**. When the process is completed, click **Next**.

7 On the Package JDBC modules into Adobe Experience Manager forms EARs (1 of 2) screen *(appears if Configure Datasource with Packaged JDBC modules option was selected)*, provide JDBC configuration details and click **Test Database Connection**. When complete, click **Next**.

8 On the Package JDBC modules into Adobe Experience Manager forms EARs (2 of 2) screen *(appears only if Configure Datasource with Packaged JDBC modules options was selected)*, provide details to generate an encrypted database password for WebLogic . Use one of the following options:

Use an existing WebLogic encrypted password Select this option if you already have an encrypted password for the database. You can use the WebLogic encryption utility to encrypt the password that you entered in the previous screen for database connection test.

Generate WebLogic encrypted password Select this option to generate an encrypted password for your database and provide the required details. The plain text password that you entered in the previous screen for database connection test is automatically populated in the Password field. Click **Encrypt Password** to generate the encrypted database password.

Important: This is the database password encrypted by WebLogic application server, and not the application server password.

Click **Configure** to package the JDBC modules into Adobe Experience Manager forms EARs, and when complete, click **Next**.

9 Restart the Node Manager.

10 On the Application Server Configuration Validation screen, select the tasks for validating and then click **Validate**. When the process is completed, click **Next**.

Note: If you have packaged JDBC modules into Adobe Experience Manager forms EAR files, Configuration Manager will report failed datasource validation during application server configuration validation. You can ignore this message.

Note: Datasource validation may fail if you are using globally-scoped datasource. In this case, restart your WebLogic server and re-validate the datasource.

Choose installation verification sample (IVS) EAR files

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

The ear files appear only if you have selected respective modules on the Modules screen.

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

Copy CRX Content

Copy all the content of the [*aem-forms root*]/configurationManager/export/crx-quickstart/ directory to the location specified on the CRX Configuration screen on all the cluster nodes.

Deploying AEM forms on JEE EARs

1 **(Applicable if using MongoDB as a repository)** You must deploy the EAR only on the master node and keep other nodes in the shutdown status.

   In the Weblogic administration console, stop all managed servers running on slave nodes and keep only the managed server of the master node running.

   Note: After you have completed all configurations and have quit the Configuration Manager, ensure that you run one of the stopped managed servers, wait for it to start completely, and then run other stopped managed servers, one by one.

2 On the Deploy Adobe Experience Manager forms EARs screen, select the EAR files to deploy and then click **Deploy**. This operation may take several minutes to complete. When the deployment has completed successfully, click **Next**.

   Note: After this step, ensure that you stop the managed server, node manager, and admin server, and then start them in the reverse order. Ensure that a directory named adobe is created in [appserverdomain] after the restart. This is required so that the [appserverdomain]/null directory does not get created, which can lead to the run time issues. Delete the [appserverdomain]/null directory if it gets created.

Initializing Adobe Experience Manager forms database

1 On the Adobe Experience Manager forms Database Initialization screen, verify that the hostname and port number provided for your application server is correct and then click **Initialize**. The database initialization task creates tables in the database, adds default data to the tables, and creates basic roles in the database. When the initialization has completed successfully, click **Next**. Restart the application server manually when you are prompted to do so.

   Note: Initialize the database only on one node of the cluster. Subsequent steps are performed only on initialized server.

2 On the Adobe Experience Manager forms Information screen, enter **Adobe Experience Manager forms User ID** and **Password** whose default values are *administrator* and *password* respectively.

   Click **Verify Server Connection**, and when complete, click **Next**.

   Note: The server information that appears on this screen represents default values for the deployment.

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

Deploying Central Migration Bridge Service

❖ On the Central Migration Bridge Service Deployment Configuration screen, if applicable, select the **Include Central Migration Bridge Service in deployment** option and then click **Next**.

Deploying Adobe Experience Manager forms components

1   On the Adobe Experience Manager forms Component Deployment screen, click **Deploy**. The components that are deployed at this time are Java archive files that plug into the service container that is part of AEM forms on JEE for purposes of deploying, orchestrating, and executing services. Click **View Progress Log** to view the deployment progress and, when the deployment has completed successfully, click **Next**.

2   On the Adobe Experience Manager forms Component Deployment Validation screen, click **Validate**. Click **View Progress Log** to view the validation progress and, when the validation has completed successfully, click **Next**.

Configuring Adobe Experience Manager forms components

❖ On the Configure Adobe Experience Manager forms Components screen, select the tasks to run with Configuration Manager, and click **Next**.

Adobe Experience Manager forms Server JNDI information

❖ On the Adobe Experience Manager forms Server JNDI Information screen, enter the host name and port number for the JNDI server. Click **Verify Server Connection** to ensure that Configuration Manager can connect to the JNDI server. Click **Next** to continue.

Configure Connector for EMC® Documentum®

Note: In case of a remote AEM forms on JEE deployment, you cannot configure the Connector for EMC Documentum using Configuration Manager.

1   On the Specify Client for EMC Documentum screen, select **Configure Connector for EMC Documentum Content Server**, and specify the following settings. Enter the details, click **Verify**, and when complete, click **Next** to continue.

   •   **Choose EMC Documentum Client Version:** Select the client version to use with the EMC Documentum Content Server.

   •   **EMC Documentum Client Installation Directory Path:** Click **Browse** to select the directory path.

2   On the Specify EMC Documentum Content Server Settings screen, enter the EMC Documentum Server details, and then click **Next**. Press F1 for information about the details you need to enter.

3   On the Configure Connector for EMC Documentum screen, click **Configure Documentum Connector**. When completed, click **Next**.

4   On the Required Manual Configurations for Connector for EMC Documentum screen, review and perform the manual steps listed and then click **Next**.

Configure Connector for IBM® Content Manager

Note: In case of a remote AEM forms on JEE deployment, you cannot configure the Connector for IBM Content Manager using Configuration Manager.

1   On the Specify Client for IBM Content Manager screen, select **Configure Connector for IBM Content Manager**, and enter a value for the IBM Content Manager Client Installation Directory Path. Click **Verify** and when complete, click **Next** to continue.

2   On the Specify IBM Content Manager Server Settings screen, enter the details of the IBM Content Manager Server, and click **Next**.

3 On the Configure Connector for IBM Content Manager screen, click **Configure IBM Content Manager Connector**. When complete, click **Next**.

4 On the Required Manual Configurations for Connector for IBM Content Manager screen, review and perform the manual steps listed and then click **Next**.

Configure Connector for IBM® Filenet

Note: In case of a remote AEM forms on JEE deployment, you cannot configure the Connector for IBM FileNet using Configuration Manager.

1 On the Specify Client for IBM FileNet screen, select **Configure Client for IBM FileNet Content Manager**, and specify the following settings.

   • **Choose IBM FileNet Client Version:** Select the client version that you want to use with the IBM FileNet Content Server.

   • **IBM FileNet Client Installation Directory Path:** Click **Browse** to select the directory path.

      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.

   Click **Verify**, and when complete, click **Next** to continue.

2 On the Specify IBM FileNet Content Server Settings screen, enter the required details, and click **Next**. Press F1 for more information.

3 On the Specify Client for IBM FileNet Process Engine screen, enter the required details, and click **Verify**. When complete, click **Next**.

4 On the Specify IBM FileNet Process Engine Server Settings screen, enter the required details and click **Next**.. Press F1 for more information.

5 On the Configure Connector for IBM FileNet screen, click **Configure FileNet Connector**. When complete, click **Next**.

6 On the Required Manual Configurations for Connector for IBM FileNet screen, review and perform the manual steps listed and then click **Next**.

Note: The server fails to start if the path to the jass.conf.WSI file contains any space. In this case, copy the file to another location to ensure there are no spaces in the path.

Configure Connector for Microsoft® SharePoint®

Note: In case of a remote AEM forms on JEE deployment, you cannot configure the Connector for Microsoft SharePoint using Configuration Manager.

On the Configure Adobe Experience Manager forms Connector for Microsoft SharePoint screen, do one of the following tasks:

   • Deselect the **Configure Adobe Experience Manager forms Connector for Microsoft SharePoint** option to manually configure Microsoft Sharepoint later, and then click **Next**.

   • Leave the **Configure Adobe Experience Manager forms Connector for Microsoft SharePoint** option selected. Enter the required values, and then click Configure SharePoint Connector. When complete, click **Next**.

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

Configuring Adobe Experience Manager forms Server for native file conversions

❖ **(PDF Generator only)** On the **Admin user credentials for native PDF conversions** screen, enter the user name and password of a user with administrative privileges on the server computer, and then click **Add user.**

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

System readiness test for PDF Generator

❖ On the **Document Services PDF Generator System Readiness Test** screen, click **Start** to validate if the system has been appropriately configured for PDF Generator. Review the System Readiness Tool Report and click **Next.** Note that the system readiness test fails if Adobe Experience Manager forms is deployed on a remote machine.

Configuring Reader Extensions

❖ On the Adobe Experience Manager forms Reader 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 Administration Console**. You can configure the Reader 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**.

Summary, and Next Steps

❖ Review the Configuration Manager task summary list and choose the appropriate options:

• Select Launch Next Steps to view information about AEM forms on JEE users and administrative interfaces to launch an html page containing step-by-step instructions to start and use AEM forms on JEE.

Click **Finish** to exit the Configuration Manager

Chapter 6: Manually Configuring a WebLogic Server Cluster

This chapter describes how to manually configure a WebLogic Server cluster to prepare for the manual deployment of LiveCycle in the clustered environment. This chapter applies only if you chose **not** to configure your WebLogic Server cluster automatically. For information about how to automatically configure your application server, see Configuring and deploying LiveCycle.

At this point in the installation process, you have already installed LiveCycle files and run Configuration Manager to configure the LiveCycle deployable archives. Now you must perform the following tasks manually:

- Configure WebLogic Server settings. (See "6.1 Configuring WebLogic Server settings" on page 34.)
- Configure JDBC connectivity. (See "6.2 Configure JDBC connectivity" on page 37.)

6.1 Configuring WebLogic Server settings

Configure the following areas for your WebLogic Server cluster:

- WebLogic Server time-out settings. (See "Manually Configuring a WebLogic Server Cluster" on page 34.)
- WebLogic Server server start arguments. (See "6.1.2 Configuring server start arguments" on page 35.)
- The class path of each managed WebLogic Server (See "6.1.3 Configuring the class path of the managed servers" on page 37.)

6.1.1 Configuring the time-out settings

Depending on your deployment, LiveCycle EAR files can get large. You must increase the WebLogic Server time-out settings to avoid time-outs when deploying your EAR files.

To configure transaction time-out settings for the cluster:

1 In the WebLogic Server Administration Console, under Domain Structure, click your domain name as defined in "3.3 Creating a WebLogic domain" on page 7.

2 Under Change Center, click **Lock & Edit**.

3 Click the **Configuration** tab and then click **JTA**.

4 In the **Timeout Seconds** box, enter 300.

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

To configure stuck thread time-out settings for the cluster:

1 In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Servers**.

2 In the **Servers** table, click the name of a server in the cluster.

3 Under Change Center, click **Lock & Edit**.

4 Click the **Configuration** tab > **Tuning**.

5 In the **Stuck Thread Max Time** box, enter 1200.

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

7 Repeat steps 2 to 6 for each server in the cluster.

6.1.2 Configuring server start arguments

You must configure the server start arguments on each WebLogic Server instance of the LiveCycle cluster to add LiveCycle options.

Before you start this procedure, you must know if your cluster uses a 32-bit or 64-bit JVM. See Preparing to Install LiveCycle (Server Cluster)to determine the JVM that is required for your cluster configuration.

Before you start this procedure, determine how your LiveCycle cluster implements cluster caching so that you can correctly configure a server start argument for it. You can implement cluster caching by using UDP or TCP but not both. Choose the implementation appropriate for your cluster:

* UDP can be used only if your cluster is IPv4-based.

* Use TCP if your cluster is either IPv4-based or IPv6-based. On an IPv6-based cluster, use TCP to be IPv6-compliant.

  If you implement cluster caching by using TCP, ensure that you configure the TCP locators correctly. (See "Configuring the caching locators (caching using TCP only)").

It is recommended to use TCP instead of UDP multicasting for production systems because of the inherent reliability of the TCP protocol.

To configure the server start arguments:

1 In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Servers** and, in the right pane, click the name of a server in the LiveCycle cluster.

2 Click the **Configuration** tab > **Server Start**.

3 Under Change Center, click **Lock & Edit**.

4 In the **Arguments** box, add one of the following sets of JVM arguments:

  * (32-bit JVM only) Add `-XX:MaxPermSize=256m -Xms256m -Xmx1024m`

  * (64 -bit JVM only) Add `-XX:MaxPermSize=512m -Xms256m -Xmx2048m`

  Note: Copy the appropriate text block above to a text editor, and ensure that all line breaks are removed:

5 *(IPv4 only)* In the **Arguments** box, add the following JVM arguments:

  `-Dadobeidp.RootDirectory=<appserver domain> -Djava.net.preferIPv4Stack=true -Dfile.encoding=utf8`

  `-Djava.security.policy=<appserver root>/server/lib/`weblogic.policy

6 *(IPv6 only)* In the **Arguments** box, add the following JVM arguments:

  `-Dadobeidp.RootDirectory=<appserver domain> -Djava.net.preferIPv6Stack=true -Djava.net.preferIPv6Addresses=true -Dfile.encoding=utf8`

  `-Djava.security.policy=<appserver root>/server/lib/weblogic.policy`

  Note: If you're using a 64-bit UNIX platform, add the following JVM argument:

  `-d64`

  Note: The `adobeidp.RootDirectory` must be created in exactly the same location on all nodes of the cluster.

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💡 *Copy the above text block to a text editor, ensure that all line breaks are removed, and replace all of these occurrences:*

- `<appserver domain>` with your application server domain path

- `<appserver root>` with the application server root directory

7 Configure a JVM argument for cluster caching. In the JAVA_OPTS line, add or change one of the following arguments:

Caching using UDP discovery

- Configure the multicast port argument in the following format:

  ```
  -Dadobe.cache.multicast-port=<port number>
  ```

  Note: *The value for* `<port number>` *can be any available port between 1025 and 65535. The multicast port must be unique to the LiveCycle cluster (that is, the port must not be used by any other cluster on the same network, any attempt to use the same port by any other cluster on the same network would result in bootstrap failure). It is recommended that you configure the same* `<port number>` *on all nodes in the LiveCycle cluster, as in this example:*

  ```
  -Dadobe.cache.multicast-port=33456
  ```

- Setting multicast address argument is optional. Default muticast addresses for IPv4 and IPv6 are as following:

  ```
  IPv6 - FF38::1234
  IPv4 - 239.192.81.1
  ```

  If you have restriction on multicast addresses in your network, use following argument to set multicast addresses:

  ```
  -Dadobe.cache.multicast-address=<ip address>
  ```

  The value for `<ip address>` is the IP address used for multicast networking. The IP address is ignored if `adobe.cache.multicast-port` is zero.

  The multicast address must be unique to the LiveCycle cluster and must not be used by any other cluster on the same network. It is recommended that you configure the same `<ip address>` on all nodes in the LiveCycle cluster. For example:

  ```
  -Dadobe.cache.multicast-address=239.192.81.1
  ```

- For machines with multiple Network Interfaces

  Some machines may be connected to multiple networks via multiple Network Interface Cards (NICs). For such machines, set the JVM property `-Dadobe.cache.bind-address` to the IP address of the network interface card that you are using for LiveCycle Server.

  ```
  -Dadobe.cache.bind-address=<IP Address>
  ```

  Note: *It is recommended to set JVM property -Dadobe.cache.bind-address for machines with one Network Interface Card, also.*

Caching using TCP only

- For IPv4, configure the cluster locators argument in the following format:

  ```
  -Dadobe.cache.cluster-locators=<IPaddress>[<port number>],<IPaddress> [<port number>]
  ```

  For IPv6, configure the cluster locators argument in the following format:

  ```
  -Dadobe.cache.cluster-locators=<hostname>@<IPv6 address>[<port
  number>],<hostname>@<IPv6 address>[<port number>]
  ```

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Note: Configure, as a comma-separated list, the locators for all nodes of the cluster. The value for `<IPaddress>` is the IP address of the computer that is running the locator. The value for `<port number>` is any unused port between 1025 and 65535. It is recommended that you configure the same `<port number>` on all nodes in the LiveCycle cluster, as in this example:

```
-Dadobe.cache.cluster-locators=10.20.30.5[22345],10.20.30.6[22345]
```

Note: Do not run TCP locators on all the nodes of the LiveCycle Cluster. It is good practice to run minimum two locators. One TCP locator serves as a primary locator and other TCP locator serves as a secondary locator to handle failover issues. You can add more than two TCP locators as backup locators but it is not mandatory. For information on configuring TCP locators, see "4.4 Configuring the caching locators in clusters (caching using TCP only)" on page 19.

8 To prevent application server from Denial of Service attacks configure the following JVM argument:

```
-DentityExpansionLimit=10000
```

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

10 Repeat steps 2 to 8 for each server in your cluster.

6.1.3 Configuring the class path of the managed servers

Configure the class path of each managed WebLogic Server in the cluster to include JAR files that were installed by LiveCycle.

To modify the class path of a managed server:

1 Ensure that each managed WebLogic Server in the cluster is started. Use Node Manager to start any managed servers that are stopped.

2 In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Servers**.

3 Under change center, click **Lock & Edit**, and then click the name of your server.

4 Click the **Configuration** tab > **Server Start**.

5 In the **Class Path** box, enter the class path, and then add the location and file name for the pop3.jar file (*[appserverdomain]*/idplib/pop3.jar), weblogic.jar file (*[appserver root]*/server/lib/weblogic.jar), tools.jar (*[JAVA_HOME]*/lib/tools.jar) file, and the JDBC driver (*[appserverdomain]*/idplib/*[.jar file for JDBC driver]*) to the class path.

Note: Ensure that the pop3.jar file is listed before the weblogic.jar file classes and that the various JAR files are separated with a colon (:) (Linux/UNIX) or a semicolon (;) (Windows).

6 Click **Save**.

7 Repeat steps 2 to 7 for all servers in the cluster.

8 Under Change Center, click **Activate Changes**.

6.2 Configure JDBC connectivity

All members in the cluster share the JDBC data sources for the LiveCycle database. Perform the following tasks to create and configure the shared JDBC data source:

- Configure connectivity to the LiveCycle database. (See "6.2.1 Creating and configuring the LiveCycle data source" on page 38.)

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- (Adobe® LiveCycle® Rights Management 11 only) Configure connectivity to the database used for Rights Management. (See "6.2.2 Creating and configuring a Rights Management data source" on page 39.)

6.2.1 Creating and configuring the LiveCycle data source

Create the data source for your cluster. Perform the following tasks to create and configure the shared JDBC data source:

- Create a data source.

- Assign the data source to the cluster.

- Configure the maximum pool capacity of the data source.

6.2.1.1 Creating the LiveCycle data source

Within the WebLogic Server cluster, first create a JDBC data source that will link to the LiveCycle database.

To create the LiveCycle data source:

1 In the WebLogic Server Administration Console, under Domain Structure, click **Services** > **JDBC** > **Data Sources**.

2 Under Change Center, click **Lock & Edit**, and then click **New**.

3 (Optional) In the **Name** box, enter the name for the data source (for example, type IDP_DS).

4 In the **JNDI Name** box, enter IDP_DS as the name of the data source.

5 In the **Database** list, select the database type that matches your database, and then click **Next**.

6 In the **Database Driver** list, select the appropriate database driver for your database, and then click **Next**.

7 Select **Supports Global Transactions,** select **Emulate Two-Phase Commit**, and then click **Next**.

8 In the **Database Nam**e box, enter the name of the database.

9 In the **Host Name** box, enter the IP address of the computer hosting the database.

10 In the **Port** box, enter the port number of the computer hosting the database.

11 In the **Database User Name** box, enter the user name for the database.

12 In the **Password** box, enter the password for the database and then enter it again in the **ConfirmPassword** box.

13 Click **Next** and then click **Test Configuration**. A confirmation response is displayed, confirming that the database configuration is correct.

14 When the test succeeds, click **Finish**.

15 Under Change Center, click **Activate Changes**.

6.2.1.2 Assigning the data source to the cluster

You must assign the data source to the cluster.

To assign the LiveCycle data source to the cluster:

1 In the WebLogic Server Administration Console, under Domain Structure, click **Services** > **JDBC** > **Data Sources**.

2 Under Change Center, click **Lock & Edit**.

3 Click the name of the data source to assign to the cluster.

4 Click the **Targets** tab and, in the Clusters area, select the cluster name and select **All servers in the cluster**.

5 Click **Save** and thenclick **Activate Changes**.

6.2.1.3 Configuring the maximum pool capacity of the data source

You must configure a maximum pool capacity for the data source.

To set the maximum pool capacity:

1   In the WebLogic Server Administration Console, under Domain Structure, click **Services** > **JDBC** > **Data Sources**.

2   Under Change Center, click **Lock & Edit**.

3   Click the name of the data source to configure.

4   Click the **Configuration** tab > **Connection Pool**.

5   (Oracle only) In the **Initial Capacity** box, enter 1.

6   In the **Maximum Capacity** box, enter 30.

7   Click **Save** and thenclick **Activate Changes**.

6.2.2 Creating and configuring a Rights Management data source

If your LiveCycle deployment uses Rights Management, create and configure a separate data source in your cluster for Rights Management. Perform the same tasks that you did for the LiveCycle data source, but use the settings specified below:

• Create a data source.

• Assign the data source to the cluster.

• Configure the maximum pool capacity of the data source.

6.2.2.1 Creating the data source

Within the WebLogic Server cluster, first create a JDBC data source that will link to the Rights Management database.

To create a Rights Management data source:

1   In the WebLogic Server Administration Console, under Domain Structure, click **Services** > **JDBC > Data Sources**.

2   Under Change Center, click **Lock & Edit**.

3   Click **New** and, in the **Name** box, enter RM_DS as the name for the data source.

4   In the **JNDI Name** box, enter EDC_DS as the name of the data source.

5   In the **Database** list, select the database type that matches your database.

6   In the **Database Driver** list, select the appropriate database driver for your database and then click **Next**.

7   Select **Supports Global Transactions**, select **One-Phase Commit**, and then click **Next**.

8   In the **Database Nam**e box, enter the name of the database.

9   In the **Host Name** box, enter the IP address of the computer hosting the database.

10 In the **Port** box, enter the port number of the computer hosting the database.

11 In the **Database User Name** box, enter the user name for the database.

12 In the **Password** box, enter the password for the database and then enter it again in the **ConfirmPassword** box.

13 Click **Next** and then click **Test Configuration**. A confirmation response is displayed, confirming the database configuration is correct.

14 When the test succeeds, click **Finish**.

15 Under Change Center, click **Activate Changes**.

6.2.2.2 Assigning the data source to the cluster

You must assign the data source to the cluster.

To assign a data source to the cluster:

1 In the WebLogic Server Administration Console, under Domain Structure, click **Services** > **JDBC** > **Data Sources**.

2 Under Change Center, click **Lock & Edit**.

3 Click the name of the data source to assign to the cluster.

4 Click the **Targets** tab and, in the Clusters area, select the cluster name and select **All servers in the cluster**.

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

6.2.2.3 Configuring the maximum pool capacity of the data source

You must configure a maximum pool capacity for the Rights Management data source.

To set the maximum pool capacity:

1 In the WebLogic Server Administration Console, under Domain Structure, click **Services** > **JDBC** > **Data Sources**.

2 Under Change Center, click **Lock & Edit**.

3 Click the name of the data source to configure.

4 Click the **Configuration** tab > **Connection Pool**.

5 Enter the provided values in the following boxes:

Initial Capacity: 5

Maximum Capacity: 20

Minimum Capacity: 5.

Statement Cache Size: 100.

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

6.3 Next steps

After you configure your WebLogic Server cluster, perform these tasks:

• Configure the LiveCycle EAR files by using Configuration Manager. (See Configuring and deploying LiveCycle.)

• Choose one of these ways to deploy the LiveCycle EAR files to your WebLogic Server cluster:

   • **Automatically:** Use Configuration Manager. (See Automatically configuring LiveCycle in Configuring and deploying LiveCycle.)

   • **Manually:** See Manually deploying to LiveCycle in Configuring and deploying LiveCycle.

Chapter 7: Manually Deploying to WebLogic

This chapter describes how to manually deploy AEM forms on JEE modules to WebLogic. This chapter applies only if you chose not to deploy AEM forms on JEE to WebLogic automatically. For information about how to automatically deploy AEM forms on JEE to your application server, see "5.3 Configuring and deploying AEM forms on JEE" on page 26.

At this point in the installation process, you have already installed AEM forms on JEE files, run Configuration Manager to configure the AEM forms on JEE deployable archives, and manually configured WebLogic. Now, you must manually deploy the AEM forms on JEE deployable archives.

7.1 About deploying AEM forms on JEE modules

Before you deploy AEM forms on JEE, ensure that you completed these tasks:

- Installed the required software and files, and know the location of the directories you will be working with. If you did not complete this task, see Preparing to Install AEM forms on JEE (Single Server).

- Run Configuration Manager to configure and assemble AEM forms on JEE modules according to your system and application server requirements. To add a module to your deployment, you can run Configuration Manager to make the changes and then redeploy the updated EAR file.

  If you are deploying AEM forms on JEE for the first time, initialize the database by using Configuration Manager after you deploy the product.

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

7.1.1 Summary of deployable components

During the deployment process, deploy the following EAR files:

- adobe-livecycle-native-weblogic-*[OS]*.ear

- adobe-livecycle-weblogic.ear

- adobe-workspace-client.ear

After AEM forms on JEE is configured using Configuration Manager, these files are located in the *[aem-forms]*/configurationManager/export directory.

7.2 Deploying to WebLogic Server

Deploy AEM forms on JEE components to WebLogic Server by deploying the component EAR files to the application server by using WebLogic Server Administration Console.

Before deploying to WebLogic Server, start the application server. After you deploy the required components, stop and restart the application server before you start any services.

To deploy the EAR files:

1   To access the WebLogic Server Administration Console, type `http://<hostname>:7001/console` in the URL line of a web browser.

2   Type the user name and password that was used when creating to WebLogic Server configuration and click **Log In**.

3   Under Change Center, click **Lock & Edit**.

4   Under Domain Structure, click **Deployments** and then, in the right pane, click **Install**.

5   On the Install Application Assistant pane, navigate to the location of the EAR files to install.

6   Select the EAR file and click **Next**.

7   Select **Install this deployment as an application** and click **Next**.

8   For your deployment targets, select your cluster and then select **All servers in the cluster**.

9   Click **Next**, accept the default settings, and then click **Finish**.

10 Under Change Center, click **Activate Changes**.

11 In the right pane, select the check box for the application you just installed.

12 Click **Start** and, in the menu, select **Servicing all requests**.

13 In the right pane, click **Yes** and, under Change Center, click **Lock & Edit**.

14 Repeat steps 5 to12 for each of the EAR files listed in ".

15 When the deployment is complete, restart WebLogic. See ".

7.3 Restarting WebLogic Server

After you make all your configuration changes, restart WebLogic for the changes to take effect. The WebLogic Managed Server and the WebLogic Administration Server also need to be restarted. The Node Manager does not need to be restarted.

7.3.1 Stop WebLogic Managed Server

You can verify that the Managed Server has shut down by viewing the table at the bottom of the Control tab. The table displays a list of all the servers and indicates their current state.

1   In the WebLogic Server Administration Console, under Domain Structure, click the domain name.

2   Click the **Control** tab and select the check box beside the server you want to stop.

3   Click **Shutdown** and select one of these options:

   When work completes: Initiates a graceful shutdown of the selected server, causing the Managed Server to notify its subsystems to complete all in-work requests. A graceful shutdown gives the WebLogic Server subsystems time to complete certain application processing that is currently in progress.

   Force Shutdown Now: Initiates a forced shutdown, which causes the Managed Server to instruct subsystems to immediately drop in-work requests.

4   At the WebLogic Server Administration Console prompt, click **Yes** to confirm the command.

7.3.2 Stop WebLogic Administration Server

1   From a command prompt, navigate to *[appserverdomain]\bin*

2 Type the following command:

- (Windows) `stopWebLogic.cmd`

- (Linux, UNIX) `./stopWebLogic.sh`

3 Enter the WebLogic user name and password (if you enabled security when installing WebLogic).

7.3.3 Start WebLogic Administration Server

1 From a command prompt, navigate to *[appserverdomain]\bin*

2 Type the following command:

- (Windows) `startWebLogic.cmd`

- (Linux, UNIX) `./startWebLogic.sh`

3 Enter the WebLogic user name and password (if you enabled security when installing WebLogic).

7.3.4 Start WebLogic Managed Server

1 Go to `http://localhost:7001/`console and log in using the user name and password that was used when configuring the WebLogic server.

2 Under Change Center, click **Lock & Edit**.

3 Under Domain Structure, click **Environment** > **Servers** and, in the right pane, click the managed server.

4 On the next screen, click the **Control** tab and select the check box beside the managed server you want to start.

5 Click **Start** and then click **Yes**.

7.4 Next steps

You must run Configuration Manager to initialize the database, and deploy the components and AEM forms on JEE archive files. You can also choose to validate the component and archive file deployment. See "5.3 Configuring and deploying AEM forms on JEE" on page 26.

Chapter 8: Post-deployment tasks

8.1 General tasks

8.1.1 Configure Allowed Referers

When you run Configuration Manager, the default host, IPv4 address, IPv6 address, loopback address, and localhost address are added to the Allowed Referer list. These addresses are added only for the machine where LCM is executed. For a AEM forms on JEE cluster, manually add all the other cluster nodes to the list:

1 In Administration Console, click **Settings** > **User Management** > **Configuration** > **Configure Allowed Referer URL's**. The Allowed Referer list appears at the bottom of the page.

2 To add an allowed referer:

   a Type a host name or IP address in the Allowed Referers box. To add more than one allowed referer at a time, type each host name or IP address on a new line. Provide hostName and IP address of all the cluster nodes/load balancer.

   b In the HTTP Port and HTTPS Ports boxes, specify which ports to allow for HTTP, HTTPS, or both. If you leave those boxes empty, the default ports (port 80 for HTTP and port 443 for HTTPS) are used. If you enter `0` (zero) in the boxes, all ports on that server are enabled. You can also enter a specific port number to enable only that port.

   c Click Add.

3 Click **Save**.

   If the Allowed Referer List is empty, the CSRF feature stops working and the system becomes insecure.

4 After changing the Allowed Referer list, restart the AEM forms on JEE cluster.

8.1.2 Perform 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 of the servers on which AEM forms on JEE is implemented. Also take backup of CRX repository.

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 Backup and Recovery topic in Administration Help.

8.1.3 Restart the application server

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

Note: You may skip to restart the AEM forms on JEE server, if you have restarted the server after configuring CRX clustering or after updating Allowed Referer list

8.1.4 Verify the deployment

You can verify the deployment by logging in to Administration Console. If you log in successfully, then AEM forms on JEE is running on the application server and the default user is created in the database. To verify the CRX repository deployment, access the CRX welcome page.

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

8.1.4.1 Accessing Administration Console

 Administration Console is the web-based portal for accessing a variety of configuration pages where you can set run-time properties that control the way AEM forms on JEE operates. When you log in to Administration Console, you can access User Management, Watched Folder, and Email client configuration, and 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 is *administrator* and *password*. After you log in the first time, access User Management and change the password.

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

For information about using Administration Console, see Administration Help.

1 Type the following URL in a web browser:

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

   For example: `http://localhost:8001/adminui`

   Note: The default port number for WebLogic Server is 7001. When you created a new managed server, you may have set a different port. Managed server uses a default port of 8001.

2 If you have upgraded to AEM forms on JEE, enter the same administrator user name and password as that of your previous LiveCycle installation. In case of a fresh installation, enter the default user name and password.

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

8.1.4.2 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.

Also, it is recommended to change the default password for CRX Administrator.

For detailed information, see Change the default administrator password.

8.1.4.3 Accessing CQ Welcome Page

CQ welcome page is the web-based portal for accessing various CQ components, administration, deployment and development tools. The default user name and password for logging in is administrator and password (same as AEM forms on JEE Administrator).

Access the welcome page using the following steps:

1 Type the following URL in a web browser:

```
http://[hostname]:[port]/lc/welcome
```

2 Enter the same administrator user name and password as mentioned above.

3 After you log in, you can access various components, administration, deployment and development UIs.

8.1.4.4 Accessing OSGi Management Console

In CQ, components are in form of OSGi bundles which are deployed to Apache Felix OSGi container. OSGi console provides a way to manage OSGi bundles and services configurations. The default user name and password for logging in is admin and admin (same as CRX Administrator).

Access the OSGi Management console using the following steps:

1 Type the following URL in a web browser:

```
http://[hostname]:[port]/lc/system/console
```

2 Enter the same administrator username and password as mentioned above.

3 After you log in, you can access various components, services, bundles and other configurations.

8.1.4.5 Change CQ Administrator default password

CQ embedded within AEM forms on JEE has two administrator users as mentioned below.

- **Super Administrator (administrator)**: The Super Administrator user can access various CQ/CRX UIs and perform admin operations. The default username and password are same as AEM forms on JEE Administrator, **administrator/password**. This user doesn't have access to OSGi Management Console. The default password of this user can be changed using Administrator console only as mentioned in section **Change default AEM forms password**. The changed password will be applicable for both AEM forms on JEE and CQ.

- Administrator (admin): This user can access to OSGi console in addition to CQ/CRX UIs and has administrator privileges. The default username and password for the user are **admin/admin**. To change the default password follow the below mentioned steps:

  1 Type the following URL in a web browser.

  ```
  http://[hostname]:[port]/lc/libs/granite/security/content/admin.html
  ```

  2 Login using following credential:

  Username: admin

  Password: admin.

  3 Search for user **Administrator**.

  4 Click on the user in left pane, the user details is displayed in the right pane.

  5 Click on **Edit** icon in the right pane.

  6 On the edit page in the right pane, provide new password in the **New Password** field and current password in **Your Password** field.

  7 Click **Save** icon in the right pane.

  8 Re-login using the changed password to verify.

8.1.4.6 View the log files

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

Log files are located at *[appserverdomain]*/servers/*[managed server name]*/logs directory:

* - *[managed server name]*.log

* - *[managed server name]*.out

Following CRX log files are located at [*CRX_home*]/

* error.log

* audit.log

* access.log

* request.log

* update.log

8.2 Verify the LiveCycle cluster

1   Ensure that all application server instances of the cluster are started.

2   View the Gemfire.log file, located in the directory appropriate to your application server:

* WebLogic: *[lc_temp_dir]*/adobewl_<*hostname*>/Caching

3   Messages such as the following confirm that the cache is connected to all servers of the cluster:

```
[info 2008/01/22 14:24:31.109 EST GemfireCacheAdapter <UDP mcast
receiver> nid=0x5b611c24] Membership: received new view
[server-0:2916|1] [server-0:2916/2913, server-1:3168/3165]
[info 2008/01/22 14:24:31.125 EST GemfireCacheAdapter <View Message
Processor> nid=0x7574d1dc] DMMembership: admitting member
<server-1:3168/3165>; now there are 2 non-admin member(s)
```

Note: Ensure that the number of non-admin members (two in the example log entry above) matches the number of members in your cluster. A discrepancy indicates that some members of the cluster are not connected to the cache.

8.3 Verify the CRX Cluster

1   Go to http://<authorHost>:<authorPort>/lc/system/console. Login with OSGi Management Console user credentials. The default credential is admin/admin

2   Navigate to Main>JMX, locate the row with domain: com.adobe.granite and type: Repository.

3   Click Repository and locate Attribute Name: ClusterNodes.

The ClusterNodes attribute contains a table. Each row in the table represents a node in the cluster. Each row contains Operating System, hostname, id, and repositoryHome of a cluster node.

On all the slave node, value of **crx.cluster.master** is `false` and on the master node vale of **crx.cluster.master** is `true`.

8.4 Accessing module web applications

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

- Reader Extensions

- Workspace

- HTML Workspace

- User management

- Correspondance management

- PDF Generator web application

- PDF Generator

- Rights Management

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.)

8.4.1 Access the Reader Extensions web application

Note: You must apply a Reader Extensions credential and apply the user roles for a new user. (See "Configuring credentials for use with Reader Extensions" in Administration Help.)

1 Open a web browser and enter this URL:

    `http://[`*hostname*`]:[`*port*`]/ReaderExtensions`

    Note: For WebLogic, [port] is the port assigned to the Managed WebLogic Server.

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 Reader Extensions Web Application role.

8.4.2 Access Workspace

1 Open a web browser and enter this URL:

    `http://[`*hostname*`]:[`*port*`]/workspace`

    Note: For WebLogic, [port] is the port assigned to the Managed WebLogic Server.

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

8.4.3 Access HTML Workspace

1 Open a web browser and enter this URL:

    `http://[`*hostname*`]:[`*port*`]/lc/ws`

    Note: For WebLogic, [port] is the port assigned to the Managed WebLogic Server.

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

8.4.4 Access Forms Manager

1 Open a web browser and enter this URL:

    http://[*hostname*]:[*port*]/lc/fm

    Note: For WebLogic, [port] is the port assigned to the Managed WebLogic Server.

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

8.4.5 Access PDF Generator Web Application

1 Open a web browser and enter this URL:

    http://[*hostname*]:[*port*]/pdfgui

    Note: For WebLogic, [port] is the port assigned to the Managed WebLogic Server.

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

8.4.6 Access Rights Management

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

Note: The default administrator user cannot access the Rights Management 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 Rights Management end-user web application

❖ Open a web browser and enter this URL:

    http://[*hostname*]:[*port*]/edc

    Note: For WebLogic, [port] is the port assigned to the Managed WebLogic Server.

Access the Rights Management administration web application

1 Open a web browser and enter this URL:

    http://[*hostname*]:[*port*]/adminui

    Note: For WebLogic, [port] is the port assigned to the Managed WebLogic Server.

2 Click **Services** > **LiveCycle Rights Management 11**.

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

Assign the Rights Management End User role

1 Log in to Administration Console. (See ")

2 Click **Settings** > **User Management** > **Users and Groups**.

3 In the **Find** box, type all and, in the **In** list, select **Groups**.

4 Click **Find** and, for the required domains, click **All Principals** in the list that appears.

5 Click the **Role Assignments** tab and click **Find Roles**.

6 In the list of roles, select the check box next to **Rights Management End User**.

7 Click **OK** and then click **Save**.

8.4.7 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 Reader Extensions, Workspace, Rights Management, Process Management, 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.*

8.4.8 Access Correspondence Management Solution template

You can verify the Correspondence Management Solution deployment by visiting http://[*hostname*]:[*port*]/lc/cm and logging in using AEM forms on JEE administrator credentials. Solution template is a reference implementation of Correspondence Management Solution.

*Note: In a non-turnkey deployment, if you encounter an error while accessing the solution template, you must integrate AEM forms on JEE with Correspondence Management Solution. For more information, see the **Configure Publish nodes to Integrate with AEM forms on JEE** section of this document.*

8.5 Configure Correspondence Management Solution

Perform the following tasks to configure Correspondence Management Solution.

For a recommended setup for the Correspondence Management Solution, see Correspondence Management Solution Topology.

8.5.1 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 server.

8.5.2 Configure the Publish instance

You must run separate Author and Publish instances for Correspondence Management Solution. However, you can configure the two instances on the same or on different machines. An author instance is embedded in the AEM forms on JEE Core application and runs on the AEM forms on JEE server. For publish instance, LCM configures a publish ear (`adobe-livecycle-cq-publish.ear`). Deploy the publish ear on a separate server instance.

*Note: Before configuring the Publish instance, ensure that your author instance is configured and deployed. You can verify by successfully logging in to the solution template for Correspondence management Solution. For more information, see the **Access Correspondence Management Solution template** section of this document.*

1   Create a server instance in a different Weblogic domain.

2   Copy the [*aem-forms root*]/crx-repository directory from the author instance to the publish instance machine.

3   From the crx-repository directory on the publish instance machine, open the `crx-repository/install` folder.
    Keep the following packages and delete all other packages from the install folder:

    - dataservices-pkg.zip

    - platform-common-pkg.zip

    - platform-content-pkg.zip

    - platform-security-pkg.zip

    - solution-correspondencemanagement-pkg.zip

4   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.

    For details on how to configure generic JVM arguments for WebSphere and WebLogic, see the **Configuring the
    JVM arguments** section for WebSphere and WebLogic.

5   Deploy `adobe-livecycle-cq-publish.ear` to the server.

*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.

8.5.3 Configure Publish nodes to Integrate with AEM forms on JEE

Perform these steps on all publish instances. To enable communication between publish instance and AEM forms on
JEE Server:

1   Go to http://[*publishhost*]:[*publishport*]/lc/system/console/configMgr and Login with OSGi Management Console
    user credentials. The default credential are admin/admin.

2   Search and click **Edit** next to the **Adobe LiveCycle Client SDK Configuration** setting.

3   In the Server Url field, ensure that http://[*lchost*]:[*lcport*] is specified.

    *Important: Ensure that the AEM forms on JEE server is listening on the specified host and port combination. The
    following three scenarios are possible in the case of a AEM forms on JEE server cluster:*

    - All AEM forms on JEE server instances are running on *localhost* and the same port. In this case use
      localhost:[port].

    - All AEM forms on JEE server instances are running on *localhost* but on different ports. In this case, use a load
      balancer host name and port combination—*[loadbalancer_host]:[loadbalancer_port].*

    - All AEM forms on JEE server instances are running on a particular host name (not *localhost*) and different/same
      ports. In this case, use a load balancer host name and port—*[loadbalancer_host]:[loadbalancer_port].*

    *If you need to use a load balancer URL to access the AEM forms on JEE server cluster (as mentioned above), ensure
    that the required communication ports between Author instances and the load balancer are open.*

4   Specify AEM forms on JEE administrator credentials in the Username as Password fields.

5   Click **Save**.

8.5.4 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.

8.5.4.1 Configure Replication Agents (Define publish instance URL)

On the Author instance, you need to configure replication agents for each Publish instance. These agents replicate content from the Author instances to all the Publish instances.

1   Log in to Tools UI at **http://<authorHost>:<authorPort>/lc/miscadmin**

2   Select **Replication**, then **Agents on author** in the left panel.

    On the right panel, you see various agents configured for the Author instance.

3   On the right panel, Select **New**.... and click **New Page**.

    The **Create Page** dialog displays.

4   Set the **Title** and **Name**, then select **Replication Agent**.

5   Click **Create** to create new agent.

6   Double-click the new agent item to open the configuration panel.

7   Click **Edit** - the **Agent Settings** dialog displays.

    a   In the **Settings** tab:

        •   Enter a **Description**.

        •   Check **Enabled**.

        •   Select **Serialization Type as Default**.

        •   Set the **Retry Delay** to **60000**.

        •   Set the **Log Level** as **Info**.

    b   In the **Transport** tab:

        •   Enter the required URI for the Publish instance
            `http://<publishHost>:<publishPort>/lc/bin/receive?sling:authRequestLogin=1`

        •   Set **User** and **Password**. The default credential are admin/admin.

8   Click **OK** to save the settings.

9   On the agent configuration panel, click **Test Connection**.

    Successful connection ensures that the configuration is done correctly.

Note: : In case, you have only one Publish instance you can use the default Replication Agent named as publish. You need to edit it for specifying Publish URI in the Transport tab as mentioned in the step b(i). In this case, you do not need to create a new replication agent.

Note: : In case, you have a publish farm(multiple non-clustered publish instances), you need to create a replication agent for each Publish instance as mentioned in Steps 1-9. For each such replication agent, Title and Name should be significant and unique, so the identification of the corresponding Publish instance can be simpler. Each such replication agent has a different URI in the Transport tab pointing to a particular Publish instance. For multiple publish instances, you can also create replication agents by copying the default agent publish and then editing Name and URI in transport tab of the created agent. If you are not using the default Replication Agent, disable it, so an unnecessary replication attempt can be avoided.

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

8.5.4.2 Define Publish instance URL for ActivationManagerImpl

1   Go to http://<*authorHost*>:<*authorPort*>/lc/system/console/configMgr. Login with OSGi Management Console user credentials. The default credential is admin/admin.

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 accessing the Publish instance ActivationManager. You can provide the following URLs.

   a   L**oad Balancer URL (Recommended)**: Provide load balancer URL, If you have a webserver acting as load balancer in front of publish farm (multiple non-clustered publish instances).

   b   **Publish instance URL**: Provide any publish instance URL, If you have a single publish instance or the webserver fronting the publish farm is not accessible from the author environment due to any restrictions. In case, the specified publish instance is down, there is a fallback mechanism to deal with on the author side.

   URL string: http://<hostname>:<port>/lc/bin/remoting/lc.content.remote.activate.activationManager

4   Click **Save**.

8.5.4.3 Configure reverse replication queue

On the Author instance, you need to configure reverse replication agents for each Publish instance. These agents replicate content from the Publish instance to the Author instance.

1   Log in to Tools UI at `http://<authorHost>:<authorPort>/lc/miscadmin`

2   Select **Replication**, then **Agents on author** in the left panel.

   On the right panel, you see various agents configured for the Author instance.

3   On the right panel, Select **New**, and click **New Page**.

   The **Create Page** dialog appears.

4   Set the **Title** and **Name**, then select **Reverse Replication Agent**.

5   Click **Create** to create new agent.

6   Double-click the new agent item to open the configuration panel.

7   Click **Edit** - the **Agent Settings** dialog displays.

   a   In the **Settings** tab:

   •   Enter a **Description**

   •   Check **Enabled**.

   •   Set the **Retry Delay** to **60000**.

   •   Set the **Log Level** as **Info**.

   b   In the Transport tab:

   •   Enter the required URI for the Publish instance -
       http://<publishHost>:<publishPort>/lc/bin/receive?sling:authRequestLogin=1

   •   Set **User** and **Password** - admin/admin

   c   In the Extended tab: Set HTTP Method as GET

8   Click **OK** to save the settings.

9   On the agent configuration panel, click **Test Connection**.

Successful connection ensures that the configuration is done correctly.

Note: : *In case, you have only one Publish instance you can use the default Reverse Replication Agent named as* **publish_reverse**. *You need to edit it for specifying Publish URI in the* **Transport** *tab as mentioned in the step b(i). In this case, you do not need to create a new reverse replication agent.*

Note: In case, you have a publish farm(multiple non-clustered publish instances), you need to create a reverse replication agent for each Publish instance as mentioned in Steps 1-9. For each such replication agent, **Title** *and Name should be significant and unique, so the identification of the corresponding Publish instance can be simpler. Each such replication agent has a different URI in the* **Transport** *tab pointing to a particular Publish instance. For multiple publish agents, you can also create reverse replication agents by copying the default agent* **publish_reverse** *and then editing* **Name** *and* **URI** *in transport tab of the created agent. If you are not using the default Reverse Replication Agent, disable it, so an unnecessary replication attempt can be avoided.*

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

8.5.4.4 Define author instance URL for VersionRestoreManagerImpl

1 Go to `http://<publishHost>:<publishPort>/lc/system/console/configMgr`. Login with OSGi Management Console user credentials. The defaults credential are admin/admin.

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 of the author instance VersionRestoreManager.

URL string: http://<hostname>:<port>/lc/bin/remoting/lc.content.remote.activate.versionRestoreManager

Note: If there are multiple author instances(Clustered) fronted by a Load Balancer, specify the URL to the load balancer in the VersionRestoreManager Author URL field.

4 Click **Save**.

8.5.4.5 Disable launcher workflows

Note: Perform this step only if you are running the Publish instance in a cluster with MongoDB as a shared repository.

Launcher workflows are used to replicate to all publish instances what it receives from the reverse replication queue. That means they are used to keep two publish instances in sync. However, a cluster created with MongoDB as the CRX repository, the publish instances are already in sync as all of them are connected to the same Mongo instance. Therefore, workflows are not required and you need to disable them.

1 Go to the miscellaneous admin of your AEM server at http://<host>:<port>/miscadmin.

2 On the left rail, double-click **Workflows**. A new browser tab will open .

3 Click the **Launcher** tab in top rail .

4 Double-click the following launchers and check the **Disable** radio button.

- Launcher with the description **CM Letter Instance Create Auto Activation**
- Launcher with the description **CM Audit Log Create Auto Activation**
- Launcher with the description **CM Letter Instance Edit Auto Activation**

5 Verify that for all the three launchers, the entry in the Enabled column is blank.

8.5.5 Install sample users and assets

You can install sample users with predefined user permissions to further explore the solution template, which you can customize to build your own solution.

1 Go to http://<*authorHost*>:<*authorPort*>/lc/crx/explorer/index.jsp.

2 Log in using administrator credentials and click **Package Manager**.

3 In **Package Manager**, upload the samples-correspondencemanagement-pkg-<*version*>.zip package from <*LC_HOME*>/deploy/crx.

4 Click **Install** once the package uploads successfully.

5 Click **Install** on the confirmation dialog to install the sample users and assets.

Correspondence Management Sample Users

Correspondence Management Solution Accelerator contains the following sample users. These user are expected to participate in the activities leading to generation of interactive customer communication.

The following roles mentioned are automatically assigned to the users during package Installation:

User name	Assigned role	Responsibilities
Todd Goldman	Correspondence Management Administrator	This user is the general system administrator. This role enables the user to modify all assets. This role also lets define the categories.
Heather Douglas	Correspondence Management Subject Matter Expert	This persona has the role enabling him to CRUD texts and images.
Caleb Lopez	Correspondence Management Application Specialist	This user defines the letter template by judicious usage of the text, picture, condition, list objects. With this role, the user can CRUD the letter templates, layouts, lists, conditions, texts and images.
Gloria Rios	Correspondence Management Claim Adjustor	An agent user would use the letter template defined by the business user to produce the letter communication to deliver to the customer.
Jocelyn Robinson	Correspondence Management Form Designer	This user has the skills to design form layouts using LiveCycle Designer. Having equipped with the necessary know-how to design form layouts for use in correspondence management, this user will use LiveCycle Designer and design the XDP templates, which would serve as the boilerplate for the letter.
Frank Kricfalusi	Correspondence Management Developer	This user has the knowledge about XSD schema and data modelling concepts and is responsible for creation and maintenance of Data Dictionaries.

For more information about the sample users and guidelines to implement a solution using the solution template, see Correspondence Management Solution Guide.

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

8.5.6 Configure IPv6 implementation

Note: Perform these steps only if Correspondence Management Solution is running on a machine that uses 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 Correspondence Management Solution.

8.5.7 Install Japanese fonts for Adobe Reader

If your Correspondence Management assets 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.

8.6 Configuring PDF Generator

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

8.6.1 Environment variables

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

Note: Ensure that the required applications are installed on all nodes in the cluster.

Note: All environment variables and respective paths are case-sensitive.

Application	Environment variable	Example
Adobe Acrobat	`Acrobat_PATH`	`C:\Program Files (x86)\Adobe\Acrobat 11.0\Acrobat\Acrobat.exe`
Adobe FrameMaker®	`FrameMaker_PATH`	`C:\Program Files (x86)\Adobe\FrameMaker8.0\FrameMaker.exe`
Notepad	`Notepad_PATH`	`C:\WINDOWS\notepad.exe` You can leave the `Notepad_PATH` variable blank.
OpenOffice	`OpenOffice_PATH`	`C:\Program Files (x86)\OpenOffice.org 3.3`
Adobe PageMaker®	`PageMaker_PATH`	`C:\Program Files (x86)\Adobe\PageMaker 7.0.2\PageMaker.exe`
WordPerfect	`WordPerfect_PATH`	`C:\Program Files (x86)\WordPerfect Office 12\Programs\wpwin12.exe`
Adobe Photoshop®	`Photoshop_PATH`	`C:\Program Files (x86)\Adobe\Adobe Photoshop CS4\Photoshop.exe`

Note: These environment variables must be set for all nodes in the cluster.

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

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

Create a new Windows environment variable

1 Select **Start** > **Control Panel** > **System**.

2 Click the **Advanced** tab and click **Environment Variables**.

3 In the System variables section, click **New.**

4 Enter the environment variable name you need to set (for example, enter `Photoshop_PATH`). This folder is the one that contains the executable file. For example, type the following path:

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

Set the PATH variables on Linux or UNIX (OpenOffice only)
Execute the following command:

```
export OpenOffice_PATH=/opt/openoffice.org3.3
```

8.6.2 Configuring the application server to use HTTP proxy server

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

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

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

1 Stop WebLogic if it is running.

2 From command line, edit the startWebLogic script in the *[WL_HOME]*\user_projects\[appserverdomain]\bin directory:

   • (Windows) startWebLogic.cmd

   • (Linux, UNIX) startWebLogic.sh

3 Add the following text to the script file:

   • (Windows)

   ```
   set PROXY_SETTINGS=-Dhttp.proxyHost=<hostname> -Dhttp.proxyPort=[port]
   ```

   • (Linux, UNIX)

   ```
   PROXY_SETTINGS=-Dhttp.proxyHost=<hostname> -Dhttp.proxyPort=[port]
   ```

4 Save and close the file and restart WebLogic.

8.6.3 Setting the Adobe PDF Printer as the default printer

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

For clusters, you must set Adobe PDF Printer as the default printer on all nodes.

Set the default printer

1   Select **Start** > **Printers and Faxes**.

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

8.6.4 Configuring Acrobat Professional (Windows-based Computers Only)

Note: This procedure is required only if you upgraded to or installed Acrobat after you completed the AEM forms on JEE installation. Upgrading Acrobat can be completed after you run Configuration Manager and deploy AEM forms on JEE to the application server. Acrobat Professional root directory is designated as [Acrobat root]. Typically, the root directory is C:\Program Files\Adobe\Acrobat 11.0\Acrobat.

Configure Acrobat for use with PDF Generator

1   If an earlier version of Acrobat is installed, uninstall it by using Add or Remove Programs in the Windows Control Panel.

2   Install Acrobat XI Pro by running the installer.

3   Navigate to the additional\scripts folder on the AEM forms on JEE installation media.

4   Run the following batch file.

    Acrobat_for_PDFG_Configuration.bat *[LiveCycle root]/pdfg_config*

    Note: On clusters, you must run the command on the cluster node where AEM forms on JEE is installed.

5   On other cluster nodes on which you do not run AEM forms on JEE Configuration Manager,do the following:

    •   Add a new registry DWORD entry named SplWOW64TimeOut at HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print. Set its value to 60000.

    •   Copy PDFGen.api from the [*aem-forms root*]/plugins/x86_win32 directory on the node where AEM forms on JEE is installed to the [*Acrobat root*]/plug_ins directory on the node being currently configured.

6   Open Acrobat and select **Help** > **Check for updates** > **Preferences**.

7   Deselect **Automatically check for Adobe updates**.

Validate the Acrobat installation

1   Navigate to a PDF file on your system and double-click it to open it in Acrobat. If the PDF file opens successfully, Acrobat is installed correctly.

2   If the PDF file does not open correctly, uninstall Acrobat and reinstall it.

Note: Ensure that you dismiss all the Acrobat dialog boxes that are displayed after the Acrobat installation is completed and disable the automatic updates for Acrobat. Set the Acrobat_PATH environment variable to point to Acrobat.exe (For example, C:\Program Files\Adobe\Acrobat 11.0\Acrobat\Acrobat.exe).

Configure native application support

1   Install and validate Acrobat as described in the previous procedure.

2   Set Adobe PDF printer as the default printer.

Add temporary directories to trusted directories list in Acrobat

The OptimizePDF service uses Adobe Acrobat and mandates that AEM forms on JEE temporary directory and PDF Generator temporary directory are listed in the trusted directories list of Acrobat.

If AEM forms on JEE temporary directory and PDF Generator temporary directory are not listed in the trusted directories list, the `OptimizePDF` service fails to run. Perform the following steps to add directories to the temporary directory list:

1   Open Acrobat, Choose Edit > Preferences.

2   From the Categories on the left, select Security (Enhanced), and then select the Enable Enhanced Security option.

3   To add AEM forms on JEE temporary directory and PDF Generator temporary directory to the trusted directories list, click **Add Folder Path**, select directories and click **OK.**

8.6.5 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.

Note: Restart the application server after adding new fonts to the specified fonts folder.

8.6.5.1 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 Visio
- Microsoft Office Publisher
- AutoDesk AutoCAD
- Corel WordPerfect
- Adobe Photoshop CS
- Adobe FrameMaker
- Adobe PageMaker
- Adobe Acrobat Professional

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.

8.6.5.2 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.

8.6.5.3 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.

8.6.6 Configuring HTML to PDF conversions

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

8.6.6.1 Configure the HTML-to-PDF conversion

1   Install and validate Acrobat as described in ".

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.

8.6.6.2 Enable 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

      [Windows root]\Windows\fonts

      [Windows root]\WINNT\fonts

   • UNIX

      /usr/lib/X11/fonts/TrueType

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

      /usr/share/fonts/default/TrueType

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

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

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

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

/Users/cfqauser/Library/Fonts

/System/Library/Fonts

/Library/Fonts

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

System.getProperty(JAVA_HOME) + /lib/fonts

/usr/share/fonts (Solaris)

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

2   Modify the font-name mapping in the cffont.properties file located in the *[aem-forms root]*/deploy/adobe-generatepdf-dsc.jar file:

   •   Extract this archive, and locate the cffont.properties file and open it in an editor.

   •   In the comma-separated list of Java font names, add a map to your Unicode system font for each font type. In the example below, kochi mincho is the name of your Unicode system font.

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

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

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

💡 *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`).

8.6.7 Modify Microsoft Visio default macro settings

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

❖   In Visio, click **Tools** > **Trust Center** > **Macro Settings** and select either of the following options and then click **OK**:

   •   Disable all macros without notification

   •   Enable all macros

8.6.8 Installing the 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 or if you want to install the printer on UNIX or Linux platforms, use the operating system's native Add Printer utility and configure it as described in "8.6.8.2 Configure PDFG Network Printer on Windows using the native Add Printer wizard" on page 62

8.6.8.1 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 > 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** option, 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 apply to all users on the client computer, select **Use the same security options for all users**, and then click **OK**.

   Note: If the user's 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 is successfully installed.

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

8.6.8.2 Configure PDFG Network Printer on Windows using the native Add Printer wizard

1 Click **Start > Printers and Faxes** and double-click **Add Printer**.

2 Click **Next**, select **A network printer, or a printer attached to another computer**, and then click **Next**.

3 Select **Connect to a printer on the internet or on a home or office network** and type the following URL for the PDFG printer, where *[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 credentials.

5 In the **Printer Driver Select** box, choose any standard PostScript-based printer driver (for example, HP Color LaserJet PS).

6 Complete the installation by choosing appropriate options (for example, setting this printer as default).

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

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

8.6.8.3 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 (because 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.

8.6.9 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.

8.6.10 Watched folder performance parameters

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

Set performance parameters for PDF Generator

1 Log in to Administration Console and click **Services** > **Applications and Services** > **Service Management**.

2 In the list of services, navigate to and click **PDFGConfigService**, and then set the following values:

   • **PDFG Cleanup Scan Seconds**: 1800

   • **Job Expiration Seconds**: 6000

   • **Server Conversion Timeout**: Change the default of 270 to a higher value, such as 450.

3 Click **Save** and restart the server.

8.6.11 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**.

8.7 Final setup for Rights Management

Rights Management requires the application server to be configured to use SSL. (See Administration Help.)

8.8 Configuring LDAP access

8.8.1 Configure User Management (Local Domain)

1 Open a web browser, navigate to http://*[host]*:*[port]*/adminui, and log in. (See "8.1.4.1 Accessing Administration Console" on page 45 .)

2 Click **Settings** > **User Management** > **Domain Management**, and then click **New Local Domain**.

3 In the appropriate boxes, enter the domain ID and name. (See "Adding local domains" in Administration help.)

4 (Optional) Disable account locking by deselecting the **Enable Account Locking** option.

5 Click **OK**.

8.8.2 Configure User Management with LDAP (Enterprise Domain)

1 Open a web browser, navigate to http://*[host]*:*[port]*/adminui and log in. (See "8.1.4.1 Accessing Administration Console" on page 45.)

2 Click **Settings** > **User Management** > **Domain Management**, and then click **New Enterprise Domain**.

3 In the **ID** box, type a unique identifier for the domain and, in the **Name** box, type a descriptive name for the domain.

   Note: When using DB2 for your AEM forms on JEE database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See "Adding enterprise domains" in Administration Help.)

4 Click **Add Authentication** and, in the **Authentication Provider** list, select **LDAP**.

5 Click **OK**.

6 Click **Add Directory** and, in the **Profile Name** box, type a name for your LDAP profile.

7 Click **Next**.

8 Specify values in the **Server**, **Port**, **SSL**, and **Binding** boxes, and in the **Populate Page with** box, select a directory settings option such as **Default Sun ONE values**. Also, specify values in the **Name** and **Password** box that would be used to connect to the LDAP database when anonymous access is not enabled. (See "Directory settings" in Administration Help.)

9 (Optional) Test your configuration:

   • Click **Test**. The screen displays a message indicating either a successful server test or any configuration errors that exist.

10 Click **Next** and configure the **User Settings** as required. (See "Directory settings" in Administration Help.)

11 (Optional) Test your configuration:

   • Click **Test**.

   • In the Search Filter box, verify the search filter or specify a new search filter, and then click **Submit**. The screen displays a list of entries that match the search criteria.

- Click **Close** to return to the User Settings screen.

12 Click **Next** configure the **Group Settings** as required. (See "Directory settings" in Administration Help.)

13 (Optional) Test your configuration:

- Click **Test**.

- In the Search Filter box, verify the search filter or specify a new search filter, and then click **Submit**. The screen displays a list of entries that match the search criteria.

- Click **Close** to return to the Group Settings screen.

14 Click **Finish** to exit the New Directory page and then click **OK** to exit.

8.9 Enabling FIPS mode

AEM forms on JEE 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 on JEE 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.

Turn FIPS mode on or off

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 on JEE 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).

8.10 Configuring HTML digital signature

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** > **LiveCycle Forms ES4**.

3 Select **HTML Digital Signature Enabled** and then click **Save**.

8.11 Configuring Connector for EMC Documentum

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

Note: Ensure that installing client for the connectors, copying of JAR's file and configuration changes tasks are performed on all the nodes of the cluster.

If you installed Connector for EMC Documentum as part of your AEM forms on JEE, 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 *[appserverdomain]* folder (if the file does not exist, create it).

2 Add a new system property that provides the following Documentum Foundation Classes JAR files:

- dfc.jar
- aspectjrt.jar
- log4j.jar
- jaxb-api.jar
- 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 copy and paste this text, you must remove the formatting characters.

3 Repeat previous steps on each application server instance of the cluster.

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   Navigate to **Services** > **LiveCycle 11 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.

7   (Optional) Navigate to **Services** > **LiveCycle 11 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.)

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

9   Open a web browser and enter this URL.

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

10   Log in using the default user name and password:

User name: administrator

Password: password

11   Navigate to **Services** > **Applications and Services** > **Service Management** and select these services:

- EMCDocumentumAuthProviderService

- EMCDocumentumContentRepositoryConnector

- EMCDocumentumRepositoryProvider

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

13   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.

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: (WebLogic and WebSphere only) When using DB2 for your AEM forms on JEE database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See "Adding enterprise domains" in 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 *AEM forms on JEE Administration Help* for information about configuring Workbench with your Documentum repository.

8.11.1 Creating the XDP MIME format in a Documentum repository

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

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

- Configure the Connector for EMC Documentum service to use a Documentum Administrator account when accessing the Documentum repository. In this case, the Connector for EMC Documentum service uses the XDP format whenever it is required.

Create the XDP format on Documentum Content Server using Documentum Administrator

1 Log in to Documentum Administrator.

2 Click **Formats** and then select **File** > **New** > **Format**.

3 Type the following information in the corresponding fields:

Name:xdp

Default File Extension:xdp

Mime Type: application/xdp

4 Repeat steps 1 to 3 for all other Documentum repositories where users will store XDP files.

Configure the Connector for EMC Documentum service to use a Documentum Administrator

1 Open a web browser and enter this URL:

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

2 Log in using the default user name and password:

User name: administrator

Password: password

3 Click **Services** > **LiveCycle 11 Connector for EMC Documentum** > **Configuration Settings**.

4 Under Documentum Principal Credentials Information, update the following information and then click **Save**:

User Name: *[Documentum Administrator user name]*

Password: *[Documentum Administrator password]*

5 Click **Repository Credentials Settings**, select a repository from the list or, if none exist, click **Add**.

6 Provide the appropriate information in the corresponding fields and then click **Save**:

Repository Name: *[Repository Name]*

Repository Credentials User Name:*[Documentum Administrator user name]*

Repository Credentials Password:*[Documentum Administrator password]*

7 Repeat steps 5 and 6 for all repositories where users will store XDP files.

8.11.2 Add support for multiple connection brokers

AEM forms on JEE Configuration Manager supports configuring only one connection broker. Use AEM forms on JEE Administrator Console to add support for multiple connection brokers:

1 Open AEM forms on JEE Administrator Console.

2 Navigate to Home > Services > LiveCycle 11 Connector for EMC Documentum > Configuration Settings.

3 In the **Connection broker Host Name or IP Address,** enter comma seperated list of hostnames of different connection brokers. For example, host1, host2, host3.

4 In the **Port Number of Connection broker**, enter comma seperated list of the ports of corresponding connection brokers. For example, 1489, 1491, 1489.

5 Click **Save**.

8.12 Configuring the Connector for IBM Content Manager

Note: AEM forms supports IBM Content Manager. See the Supported Platform Combinations document and make sure your ECM is upgraded to the supported version.

Note: Ensure that installing client for the connectors, copying of JAR's file and configuration changes tasks are performed on all the nodes of the cluster.

If you installed the Connector for IBM Content Manager as part of your LiveCycle, 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 *[appserverdomain]* 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
- icmrm81.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/icmrm81.jar,
C:/Program Files/IBM/db2cmv8/lib/db2jcc.jar,
C:/Program Files/IBM/db2cmv8/lib/db2jcc_license_cu.jar,
C:/Program Files/IBM/db2cmv8/lib/db2jcc_license_cisuz.jar,
C:/Program Files/IBM/db2cmv8/lib/xerces.jar,
C:/Program Files/IBM/db2cmv8/lib/cmblog4j81.jar,
C:/Program Files/IBM/db2cmv8/lib/log4j-1.2.8.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbsdk81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbwas81.jar
```

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

You can now connect to the IBM Content Manager 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** > **LiveCycle 11 Connector for IBM Content Manager**

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 IBMCMAuthProvider 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 LiveCycle 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 LiveCycle super administrator credentials (by default, *administrator* and *password*). You have now completed the required steps for this procedure. The System Credentials that are provided in step 4 use the default LiveCycle 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: When using DB2 for your LiveCycle database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See "Adding enterprise domains" in LiveCycle Administration Help.)

8   Add a custom authentication provider:

   • Click **Add Authentication**.

   • In the **Authentication Provider** list, select **Custom**, and then select **IBMCMAuthProviderService** and click **OK**.

9   Add an LDAP authentication provider:

   • Click **Add Authentication**.

   • In the **Authentication Provider** list, select **LDAP** and then click **OK**.

10 Add an LDAP directory:

   • Click **Add Directory**.

   • In the **Profile Name** box, type a unique name, and then click **Next**.

   • Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields. (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required. When finished, click **Next**.

   • Configure the user settings, click **Next**, configure group settings as required, and then click **Next**.

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

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

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

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

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

15 Search for users that were synchronized from LDAP and do these tasks:

- Select one or more users and click **Assign Role**.

- Select one or more LiveCycle 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.**

8.13 Configuring the Connector for IBM FileNet

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

Note: LiveCycle supports FileNet 5.2 Content Engine; FileNet 5.2 Process Engine is not supported. Moreover, the LiveCycle Configuration Manager (LCM) does not support/configure FileNet 5.2, perform manual configuration for FileNet 5.2.

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

Note: Ensure that installing client for the connectors, copying of JAR's file and configuration changes tasks are performed on all the nodes of the cluster.

Choose one of the following procedures to configure Connector for IBM FileNet:

- To configure Connector for IBM FileNet using FileNet 5.0, FileNet 5.2, and CEWS transport:

- To configure Connector for IBM FileNet using FileNet 5.0, FileNet 5.2, and EJB transport:

Configure Connector for IBM FileNet using FileNet 5.0, FileNet 5.2, and CEWS transport

1 Locate the *[appserverdomain]*/config/config.xml file and make a backup copy of it.

2 In the WebLogic Server Administration Console, under Domain Structure, click **Environment** > **Servers** and, in the right pane, click the name of your server.

3 Click the **Configuration** tab and then click **Server Start**.

4 Under Change Center, click **Lock & Edit**.

5 Locate the adobe-component-ext.properties file in the *[appserverdomain]* folder (if the file does not exist, create it).

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

For FileNet 5.x add following JAR files

- Jace.jar

- javaapi.jar

- log4j.jar

- pe.jar

- stax-api.jar

- xlxpScanner.jar

- xlxpScannerUtils.jar

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

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

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

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

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

7 (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.

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

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

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

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

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

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

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

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

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

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

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

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

10 Open the config.xml file and locate the <credential-encrypted> value for the managed server's User domain. If there is no value for this element, open the backup copy of the config.xml file you create in step 1 and copy the <credential-encrypted> value.

11 Paste the value to the new config.xml file, then save and close it.

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

13 Open a web browser and enter this URL:

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

14 Log in using the default user name and password:

User name: administrator

Password: password

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

16 Provide the Content Engine URL. For example,
```
cemp:http://ContentEngineHostNameorIP:port/wsi/FNCEWS40MTOM?jaasConfigurationName=FileNetP8WSI
```

17 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.

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

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

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

If any of the services do not start correctly, verify the Process Engine settings.

20 Do one of the following tasks:

- To use the FileNet Authorization service (IBMFileNetAuthProviderService) to display content from a FileNet object store in the Resources view of Workbench, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle authorization and must be configured to log in to Workbench by using FileNet credentials.

- To use the LiveCycle repository, log in to Workbench by using the LiveCycle super administrator credentials (by default, *administrator* and *password*). The credentials provided in step 16 use the default LiveCycle authorization service for accessing the default repository in this case.

21 Restart your application server.

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

23 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.

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

24 Add a custom authentication provider:

- Click **Add Authentication**.

- In the **Authentication Provider** list, select **Custom**.

- Select **IBMFileNetAuthProviderService** and then click **OK**.

25 Add an LDAP authentication provider:

- Click **Add Authentication**.

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

26 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.

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

28 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.

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

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

- Select one or more users and click **Assign Role**.

- Select one or more LiveCycle 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.

31 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.

32 (Optional) If you intend to install the LiveCycle 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 LiveCycle Administration Help for information about configuring Workbench functions properly with your FileNet repository.

8.14 Enable messaging on standalone JBoss

To enable messaging on a standalone JBoss 6.2 server for AEM forms on JEE:

1 Enable the messaging module on the JBOSS 6.2 if it is not enabled yet.

Copy the following tags from the `standalone_full.xml` file to the specified location in the `lc_turnkey.xml` file. Both the files are located in the *<aem-forms root>*/jboss/standalone/configuration directory.

- Copy the entire tag with its content `<extension module="org.jboss.as.messaging">....</extension>` from the `standalone_full.xml` file and put it after the <extensions> tag in the `lc_turnkey.xml` file

- Copy the entire tag with its content `<subsystem xmlns="urn:jboss:domain:messaging:1.4">....</subsystem>` from the `standalone_full.xml` file and put it after the <profile> tag in the `lc_turnkey.xml` file

2 Run the `add-user.bat` script located at *<aem-forms root>*/jboss/bin to create an application user and add the user to the **guest** group. The JMS DSC component on AEM forms on JEE expects a Connection User Name and Password to be specified. This user must have permission to use JMS Queue/Topic for performing the Send/Receive operation.

Note: In the lc_turnkey.xml file, a user with a guest role is already defined under the <security-setting match="#">..... </security-settings> tag. The default user has the privilege to send-receive messages via JMS. However, you must create an application user on the JBoss 6.2 server with the above role to send-receive JMS messages. While creating a user using the add-user.bat script, you can assign it the guest group.

3 Change the JMS DSC Configuration with the user created in step 2.

   a Log in to the administration console for AEM forms on JEE.

   b Navigate to **Services** > **Application and Services** > **Service Management**.

   c Search JMS service.

   d In the configuration tab, change the JMS configuration.

Chapter 9: Configuring Load Balancing

You can configure your WebLogic Server cluster to provide load balancing.

With the domain configuration complete, using the administration server and clustered managed servers, you need a method to proxy to forward to different managed servers for load balancing. You can implement a proxy server for WebLogic by using one of these mechanisms:

- An instance of WebLogic Server and HttpClusterServlet. (See Using Web Server Plug-Ins with WebLogic Server.)
- A third-party proxy server, such as Apache, Microsoft IIS, or Netscape IPlanet, with a WebLogic proxy plug-in. (See Using Web Server Plug-Ins with WebLogic Server.)
- A hardware-based load balancer such as F5's BigIP (see BIG-IP® Product Family) or other products (see Choosing a Hardware Load-Balancing Device).

Note: LiveCycle in a cluster environment supports only sticky sessions for load balancing. The WebLogic plug-in for Apache supports sticky sessions by default.

For complete instructions about setting up WebLogic for load balancing, see
http://download.oracle.com/docs/cd/E13222_01/wls/docs81/cluster/load_balancing.html.

9.1 Configuring an Apache server plug-in

You can install and configure an Apache HTTP server plug-in to provide load balancing in your cluster. The Apache HTTP server plug-in forwards requests received by an Apache server to a WebLogic Server instance of the cluster.

Perform the following tasks:

- Install the Apache HTTP server plug-in. (See "9.1.1 Installing the Apache HTTP server plug-in" on page 78.)
- Configure the Apache HTTP server plug-in. (See "9.1.2 Configuring the Apache HTTP server plug-in" on page 78.)
- Test the Apache HTTP server plug-in. (See "9.1.3 Testing the Apache HTTP server plug-in" on page 79.)

9.1.1 Installing the Apache HTTP server plug-in

The Apache HTTP server plug-in is distributed as a shared object (.so) for the Solaris, Linux, AIX, Windows, and HPUX11 platforms. The WebLogic 11g installation does not include the Apache HTTP server plug-ins. You can download these plug-ins as a separate .zip file from the Oracle download and support sites. For information on how to install the plug-in, refer to Installing the Apache HTTP Server Plug-In as a Dynamic Shared Object.

Note: The mod_wl28_20.so file is used for 128-bit encryption. To install the plug-in, copy the mod_wl_20.so (or mod_wl28.so) file to the [APACHE_HOME]\modules directory.

9.1.2 Configuring the Apache HTTP server plug-in

To configure the Apache HTTP server plug-in, modify the configuration file.

To configure the Apache HTTP server plug-in:

1 Using a text editor, open *[APACHE_HOME]*\conf\httpd.conf and add the following line:

```
LoadModule weblogic_module modules\mod_wl_20.so
```

2 Add an `IfModule` block as follows:

```
<IfModule mod_weblogic.c>
WebLogicCluster <Server1>:8001,<Server2>:8001
MatchExpression *
</IfModule>
```

Note: If computer names do not work, use the IP addresses. Add any additional computer names to the list, separating each using a comma.

3 Start/restart Apache HTTP server.

Note: If your cluster implements SSL, see Using Web Server Plug-ins withWebLogic Server for information about configuring the Apache plug-in using SSL.

9.1.3 Testing the Apache HTTP server plug-in

You can use LiveCycle to test the Apache HTTP server plug-in.

To test the Apache HTTP server plug-in:

1 Open a browser and enter the URL *[URL of the Apache server]*/adminui.

2 Log in to LiveCycle and check the log files of the managed servers in the cluster for a response success message to determine which server of the cluster serviced the request.

3 Using a new browser window and a different server of your cluster, repeat steps 1 to 2 to verify that requests are forwarded in round-robin manner to different servers of the cluster.

The response success messages confirm that you accessed the various servers in the cluster.

Chapter 10: Advanced Production Configuration

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

10.1 Configuring pool size for Output and Forms

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

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

Modify the existing PoolMax value

1 Using a text editor, edit the WebLogic startup script.

2 Add the following properties for `ConvertPdf`:

- `com.adobe.convertpdf.bmc.POOL_MAX=[new value]`

- `com.adobe.convertpdf.bmc.MAXIMUM_REUSE_COUNT=5000`

- `com.adobe.convertpdf.bmc.REPORT_TIMING_INFORMATION=true`

- `com.adobe.convertpdf.bmc.CT_ALLOW_SYSTEM_FONTS=true`

3 Add the following properties for `XMLFM`:

- `com.adobe.xmlform.bmc.POOL_MAX=[new value]`

- `com.adobe.xmlform.bmc.MAXIMUM_REUSE_COUNT=5000`

- `com.adobe.xmlform.bmc.REPORT_TIMING_INFORMATION=true`

- `com.adobe.xmlform.bmc.CT_ALLOW_SYSTEM_FONTS=true`

10.2 PDF Generator

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

10.2.1 Configuring EJB Pool Size

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

- Adobe PostScript® and Encapsulated PostScript (EPS) files

- Image files, such as BMP, TIFF, PNG, and JPEG files

- OpenOffice files

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

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

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

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

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

The text that follows assumes that the following two AEM forms on JEE application EARs are deployed on the application server:

- adobe-livecycle-weblogic.ear
- adobe-livecycle-native-weblogic-*[platform]*.ear

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

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

Configure the pool size for PS2PDF and Image2PDF
Refer to Distiller service settings and Generate PDF service settings under "Managing services" in the Administration Help.

10.3 Enabling CIFS on Windows

You will need to manually configure the Windows Server machine that host AEM forms on JEE.

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

On Windows machines, you need to do the following:

10.3.1 Enable NetBIOS over TCP/IP

You need to enable NetBIOS over TCP/IP so that clients connecting to the AEM forms on JEE Server can have their requests revolved for the server host name.

1 In the **Local Area Connection Properties** dialog box, on the **General** tab, select **Internet Protocol**, and then click **Properties**.

2 In the **General** tab of the **Internet Protocol (TCP/IP) Properties** dialog box, ensure that the server has a static IP address. Click **Advanced**.

3 In the **Advanced TCP/IP Settings** dialog box, select the **WINS** tab and select **Enable NetBIOS over TCP/IP**.

10.3.2 Add additional IP addresses

1 In the **Local Area Connection Properties** dialog box, on the **General** tab, select **Internet Protocol**, and then click **Properties**.

2 In the **General** tab of the **Internet Protocol (TCP/IP) Properties** dialog box, ensure that the server has a static IP address. Click **Advanced**.

3 In the **Advanced TCP/IP Settings** dialog box, select the **IP Settings** tab and click **Add**.

4 Specify a static IP address and click **Add.**

10.3.3 Disable File and Printer Sharing (Windows Server 2008 only)

• Go to **Network Settings**, deselect **File and Printer Sharing for Microsoft Clients,** and c lick **Apply**.

Chapter 11: Appendix - Install Command Line Interface

11.1 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_lc_documentation_11.

For an overview of the installation process, see "4.1 Before you begin" on page 16.

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`.

11.2 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 **Enter**. The options are Deutsch, English, and Français. English is the default language.
Choose Install Folder	On the Destination screen, press **Enter** to accept the default directory or type the new installation directory location. Default install folders are: (Windows): C:\Adobe\Adobe_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 **Enter** to read through the pages of the license agreement. If you agree to the agreement, type Y and press **Enter**.
Pre-Installation Summary	Review the installation choices you have made and press **Enter** to continue installation with the choices you have made. Type back to go back to previous steps and change any of the settings.
Ready To Install	Installer displays the installation directory. Press **Enter** to start the installation process.
Installing	During the installation process, the progress bar advances to indicate the progress of installation.
Configuration Manager	Press **Enter** 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 **Enter** to exit the installer.

11.3 Error logs

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

- (Windows) *[aem-forms root]*\log
- (Linux, Solaris) *[aem-forms root]*/log

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

11.4 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 **Enter** to continue uninstallation. Enter **quit** 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 12: 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.

12.1 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 Configure AEM forms on JEE.

2 Configure CRX

3 Validate application server topology.

4 Validate the database connectivity.

5 Configure the application server.

6 Validate the application server configurations.

7 Deploy AEM forms on JEE.

8 Initialize AEM forms on JEE.

9 Validate AEM forms on JEE.

10 Deploy the AEM forms on JEE modules.

11 Validate the AEM forms on JEE module deployment.

12 Check system readiness for PDF Generator.

13 Add administrator user for PDF Generator.

14 Configure Connector for IBM Content Manager.

15 Configure Connector for IBM FileNet.

16 Configure Connector for EMC Documentum.

17 Configure Connector for SharePoint.

Important: You must restart each of your cluster nodes after you complete Configuration Manager CLI operations.

12.2 Command Line Interface property file

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.

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- Use the property file cli_propertyFile_template.txt file 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

12.3 General configuration properties

12.3.1 Common properties

Common properties are:

WebLogic and WebSphere specific properties: Required for the Configure Application Server, Deploy AEM forms on JEE, Validate Application Server Topology and Validate Application Server Configurations operations.

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
targetServer.topologyType	server or cluster	The type of application server topology for which you are deploying AEM forms on JEE.
targetServer.name	String	The name assigned to the application server/admin server node or cluster.
targetServer.adminHost	String Default is *localhost*	The hostname of the server where the Admin server is installed.
targetServer.adminPort	Integer	The port number the admin server uses to listen for SOAP requests.

Property	Values	Description
targetServer.adminUserID	String	The administrative user ID to use when accessing the application server.
targetServer.adminPassword	String	The password associated with the WebLogic administrative user ID.
localServer.appServerRootDir	(Windows) WebLogic 12.1.1 C:\Oracle\Middleware\wlserver_12.1 (Linux, Solaris) WebLogic 12.1.1 /opt/Oracle/Middleware/wlserver_12.1	The root directory of the application server instance that you are configuring locally (on which you plan to deploy AEM forms on JEE or that you will use to communicate with a remote server on which you plan to deploy AEM forms on JEE).
targetServer.appServerRootDir	Default: (Windows) WebLogic 12.1.1 C:\Oracle\Middleware\wlserver_12.1 (Linux, Solaris) WebLogic 12.1.1 /opt/Oracle/Middleware/wlserver_12.1	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).
AEM forms on JEE Server specific properties		
LCHost	String	The hostname of the server where AEM forms on JEE will be deployed. For cluster deployments, hostname of any one of the cluster nodes where the application server is running.
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 servcie	The property to include or exclude Central Migration Bridge Service.

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Property	Values	Description
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.
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

12.3.2 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 all cluster nodes being deployed to.
customerFontsDir	String	Location of the customer fonts directory. This path must be accessible from all cluster nodes being deployed to.
systemFontsDir	String	Location of the system fonts directory. This path must be accessible from all cluster nodes being deployed to.
LCTempDir	String	Location of the temporary directory. This path must be accessible from all cluster nodes 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 all cluster nodes 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.

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12.3.3 Configure or validate application server properties

12.3.3.1 Configure or Validate WebLogic properties

The Configuration Manager can configure or validate your WebLogic application server as required by AEM forms on JEE.

These properties apply to the following operations:

- Configure Application Server
- Validate Application Server Topology
- Validate Application Server Configurations
- Validate Database Connectivity

12.3.3.2 Application server properties

Property	Values	Description
You must configure the application server-specific properties section. For more information see Common properties		
jvm.initialHeapSize	Default: 256	The initial heap size, in MB, for the JVM.
jvm.maxHeapSize	Default: 2048	The maximum heap size, in MB, for the JVM.
WebLogic and WebSphere Cluster only		
cache.useUDP	true	Set the value to `true` if AEM forms on JEE uses UDP to implement caching. Set to `false` if AEM forms on JEE uses TCP to implement caching.
cache.udp.port	Default: 33456	The port number that the primary computer uses for UDP-based caching communication. Configure only if cache.useUDP=true.
cache.tcpip.primaryhost	String	The host name of the computer where the primary application server is installed. Configure only if cache.useUDP!=true.
cache.tcpip.primaryport	Default: 22345	The port number that the primary application server computer uses for TCP-based caching communication. Configure only if cache.useUDP!=true.
cache.tcpip.secondaryhost	String	The host name of the computer where the secondary application server is installed. Configure only if cache.useUDP!=true.
cache.tcpip.secondaryport	Default: 22345	The port number that the secondary application server computer uses for TCP-based caching communication. Configure only if cache.useUDP!=true.

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Property	Values	Description
WebLogic server core classpath configuration		
classpath.targetServer.javaHome	String	Configuration of target application server requires the location of the Java Home that is used to run the target application server. This path must be accessible from all the cluster nodes being configured.
classpath.targetServer.pop3JarPath	String	Path to the Pop3 JAR file that is accessible to the target application server. This path must be accessible from the server being configured.
Datasource configuration		
datasource.dbType	Choose: • oracle • db2 • sqlserver	The type of database configured to use with AEM forms on JEE.
datasource.dbName	String	The name of the database.
datasource.dbHost	String	The host name or IP address of the server where the database is located.
datasource.dbPort	Integer	The database port AEM forms on JEE will use when communicating with the database.
datasource.dbUser	String	The user ID AEM forms on JEE will use when accessing the database.
datasource.dbPassword	String	The password associated with the database user ID.
datasource.target.driverPath	String	JDBC driver in the application server lib directory. This path must be valid and accessible from all cluster nodes being configured.
datasource.local.driverPath	String	Local JDBC driver. This value is used for testing direct database connection.

12.3.4 Deploy AEM forms on JEE properties

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

Property	Values	Description
For more information, see "12.3.1 Common properties" on page 87		
deployment.includeIVS	false	Specifies whether IVS EAR files are included in the deployment. It is recommended not to include IVS EAR files in a production environment.

12.3.5 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 "*12.3.1 Common properties*" on page 87*		

12.3.6 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 Common properties		
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.

12.3.7 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

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12.3.8 Configure Connector for IBM Content Manager

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
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).

12.3.9 Configure Connector for IBM FileNet

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.

Property	Values	Description
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.
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 seperator.
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

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Property	Values	Description
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

12.3.10 Configure Connector for EMC Documentum

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)
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

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12.3.11 Configure Connector for Microsoft SharePoint

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)
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

12.3.12 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>.`

12.3.12.1 Configure AEM forms on JEE CLI Usage

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

configureLiveCycle -f *<propertyFile>*

Where:

- -f *<propertyFile>*: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

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12.3.12.2 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 Command Line Interface property file.

12.3.12.3 Validate Application Server Topology CLI Usage

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

validateApplicationServerTopology -f *<propertyFile> -targetServer_AdminPassword <password>*

Where:

- -f *<propertyFile>:* A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

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

12.3.12.4 Validate database connectivity CLI Usage

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

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

Where:

- -f *<propertyFile>:* A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

- -datasource_dbPassword <password>: Allows you to set the database user password on the command line. If this argument is present, it will override the datasource.dbPassword property in the property file.

12.3.12.5 Configure the Application Server CLI Usage

The Configure Application Server operation requires the following syntax:

configureApplicationServer *-targetServer_AdminPassword <password> -f <propertyFile>* [-skip *<configurationsToSkipList>*]

Where:

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

- -f *<propertyFile>*: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

- -skip *<configurationsToSkipList>*: This is an optional parameter which allows you to list the application server components you do not want to configure. Specify the excluded components in a comma separated list. Valid options are Datasource or Core.

12.3.12.6 Validate Application Server Configurations CLI Usage

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

validateApplicationServerConfigurations -f *<propertyFile> -targetServer_AdminPassword <password>*

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Where:

- -f *<propertyFile>:* A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

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

12.3.12.7 (WebSphere and Weblogic Only) Deploy AEM forms on JEE CLI Usage

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

deployLiveCycle -f *<propertyFile>*

Where:

- -f *<propertyFile>:* A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

  Important: You must restart your application server after you complete Deploy AEM forms on JEE operation.

12.3.12.8 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 Command Line Interface property file.

12.3.12.9 Validate AEM forms on JEE Server CLI Usage

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

validateLiveCycleServer -f *<propertyFile> -LCAdminPassword <password>*

Where:

- -f *<propertyFile>:* A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

- -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.

12.3.12.10 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 Command Line Interface property file.

- -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.

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12.3.12.11 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 Command Line Interface property file.

- -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.

12.3.12.12 Check system readiness for PDF Generator

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

pdfg-checkSystemReadiness

12.3.12.13 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 Command Line Interface property file.

12.3.12.14 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 Command Line Interface property file.

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

1 Copy the *adobe-component-ext.properties* file from *[aem-forms root]*/configurationManager/configure-ecm/weblogic to the following [appserver root]/users_projects/domain/[appserverdomain] directory.

2 Restart the Application Server.

3 Start the following services from Administration Console

   - IBMCMAuthProviderService

   - IBMCMConnectorService

12.3.12.15 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 Command Line Interface property file.

   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   Copy the *adobe-component-ext.properties* file from *[aem-forms root]*/configurationManager/configure-ecm/weblogic to the following [appserver root]/users_projects/domain/[appserverdomain] directory.

2   If your deployment uses a custom JAAS file, locate the custom JAAS file and add to it contents of jaas.conf.WSI file available in *[aem-forms root]*/configurationManager/configure-ecm/weblogic directory. Otherwise, add the location of the file jaas.conf.WSI as the following Java option in the WebLogic Server start command

   `-Djava.security.auth.login.config=[aem-forms root]/configurationManager/configure-ecm/weblogic/jaas.conf.WSI.`

3   Restart the Application Server.

4   Start the following services from Administration Console

   - IBMFileNetAuthProviderService

   - IBMFileNetContentRepositoryConnector

   - IBMFileNetRepositoryProvider

   - IBMFileNetProcessEngineConnector(If configured)

12.3.12.16 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 Command Line Interface property file.

   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   Copy the adobe-component-ext.properties file from *[aem-forms root]/configurationManager/configure-ecm/weblogic* to the following [appserver root]/users_projects/domain/[appserverdomain] directory.

2   Restart the Application Server.

3   Start the following services from Administration Console

   - EMCDocumentumAuthProviderService

   - EMCDocumentumRepositoryProvider

   - EMCDocumentumContentRepositoryConnector

12.3.12.17 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 Command Line Interface property file.

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

12.4 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.

12.5 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.

12.6 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 "8.1.4 Verify the deployment" on page 45.)
- Access Administration Console. (See "8.1.4.1 Accessing Administration Console" on page 45.)
- Configure AEM forms on JEE modules to access LDAP. (See "8.8 Configuring LDAP access" on page 64.)