Configuring LiveCycle® ES2 Application Server Clusters Using WebLogic®
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>About This Document</strong></td>
<td>6</td>
</tr>
<tr>
<td>Who should read this document?</td>
<td>6</td>
</tr>
<tr>
<td>Conventions used in this document</td>
<td>7</td>
</tr>
<tr>
<td>Additional information</td>
<td>8</td>
</tr>
<tr>
<td><strong>1 Introduction</strong></td>
<td>9</td>
</tr>
<tr>
<td>Preparing your server cluster to install LiveCycle ES2</td>
<td>9</td>
</tr>
<tr>
<td>Installation, configuration, and deployment process</td>
<td>9</td>
</tr>
<tr>
<td>Selecting tasks for configuring and deploying</td>
<td>10</td>
</tr>
<tr>
<td>Upgrading to LiveCycle ES2</td>
<td>11</td>
</tr>
<tr>
<td>LiveCycle ES2 installation, configuration, and deployment lists</td>
<td>11</td>
</tr>
<tr>
<td>Automatic installation and deployment list</td>
<td>11</td>
</tr>
<tr>
<td>Manual installation and deployment list</td>
<td>11</td>
</tr>
<tr>
<td><strong>2 Creating a WebLogic Server Cluster</strong></td>
<td>13</td>
</tr>
<tr>
<td>Preparing to install</td>
<td>13</td>
</tr>
<tr>
<td>Installing WebLogic Server</td>
<td>14</td>
</tr>
<tr>
<td>Creating a WebLogic domain</td>
<td>14</td>
</tr>
<tr>
<td>Creating and configuring the WebLogic Server cluster</td>
<td>16</td>
</tr>
<tr>
<td>Creating the cluster</td>
<td>16</td>
</tr>
<tr>
<td>Adding a new node to an existing cluster</td>
<td>18</td>
</tr>
<tr>
<td>Setting authentication credentials for the servlet container</td>
<td>18</td>
</tr>
<tr>
<td>Configuring the node manager for the cluster</td>
<td>19</td>
</tr>
<tr>
<td>Starting the node manager and managed servers</td>
<td>20</td>
</tr>
<tr>
<td>Testing the WebLogic Server cluster</td>
<td>21</td>
</tr>
<tr>
<td>Next steps</td>
<td>21</td>
</tr>
<tr>
<td><strong>3 Installing the LiveCycle ES2 Modules</strong></td>
<td>22</td>
</tr>
<tr>
<td>Checking the installer</td>
<td>22</td>
</tr>
<tr>
<td>Installing the product files</td>
<td>23</td>
</tr>
<tr>
<td>Installing on a Windows staging platform for Linux or UNIX</td>
<td>24</td>
</tr>
<tr>
<td>Configuring the JAVA_HOME environment variable</td>
<td>24</td>
</tr>
<tr>
<td>Installing LiveCycle ES2</td>
<td>24</td>
</tr>
<tr>
<td>Viewing the error log</td>
<td>26</td>
</tr>
<tr>
<td>Configuring LiveCycle ES2-installed JAR files</td>
<td>26</td>
</tr>
<tr>
<td>Configuring the caching locators (caching using TCP only)</td>
<td>26</td>
</tr>
<tr>
<td>Modifying the TCP locators</td>
<td>27</td>
</tr>
<tr>
<td>Starting the TCP locators</td>
<td>28</td>
</tr>
<tr>
<td>Configuring the font directories</td>
<td>29</td>
</tr>
<tr>
<td>Next steps</td>
<td>29</td>
</tr>
<tr>
<td><strong>4 Configuring LiveCycle ES2 for Deployment</strong></td>
<td>30</td>
</tr>
<tr>
<td>About LiveCycle Configuration Manager</td>
<td>30</td>
</tr>
<tr>
<td>CLI versus GUI versions of LiveCycle Configuration Manager</td>
<td>31</td>
</tr>
<tr>
<td>Location of JDBC drivers</td>
<td>31</td>
</tr>
<tr>
<td>Configuring and deploying LiveCycle ES2</td>
<td>31</td>
</tr>
<tr>
<td>Uninstalling EAR files</td>
<td>41</td>
</tr>
</tbody>
</table>
5 Manually Configuring a WebLogic Server Cluster ................................................. 43
  Configuring WebLogic Server settings.................................................................... 43
  Configuring the time-out settings............................................................................ 43
  Configuring server start arguments......................................................................... 44
  Configuring the class path of the managed servers.................................................. 46
  Creating JMX policies for database initialization......................................................... 46
  Delegating MBean authorization to the realm............................................................... 47
  Creating JMX policies.................................................................................................. 47
  Configure JDBC connectivity...................................................................................... 48
  Creating and configuring the LiveCycle ES2 data source.......................................... 48
  Creating and configuring a Rights Management ES2 data source............................ 49
Next steps.................................................................................................................. 51
6 Manually Deploying to WebLogic Server Cluster ................................................. 52
  About deploying LiveCycle ES2 modules................................................................. 52
  WebLogic Server directory name............................................................................. 52
  Summary of deployable components...................................................................... 52
  Prerequisites for deploying Content Services ES2.................................................... 53
  Deploying to WebLogic Server................................................................................ 53
  Restarting WebLogic Server.................................................................................... 54
Next steps.................................................................................................................. 55
7 Post-Deployment Activities ..................................................................................... 56
  Restart the application server................................................................................... 56
  Set the date, time, and time zone.............................................................................. 56
  Verifying the deployment.......................................................................................... 57
    Accessing LiveCycle Administration Console...................................................... 57
    Change default password...................................................................................... 57
    Viewing the log files............................................................................................... 58
  Installing LiveCycle ES2.5 Solution Accelerators.................................................... 58
  Configuring WebLogic Server server start arguments............................................ 58
  Accessing module web applications........................................................................ 59
  Accessing Rights Management ES2......................................................................... 60
  Accessing User Management.................................................................................. 61
  Configuring LiveCycle PDF Generator ES2 or 3D ES2.......................................... 61
    Setting environment variables.............................................................................. 62
    Setting the Adobe PDF Printer as the default printer............................................ 63
    Configuring Acrobat Professional........................................................................ 63
    Configuring user accounts for multi-threaded file conversions.............................. 64
    Installing East Asian characters in Windows Server 2003................................. 65
    Adding fonts to PDF Generator ES2 or PDF Generator 3D ES2............................ 66
    Configuring HTML to PDF conversions............................................................... 67
    Modifying Microsoft Visio 2007 default macro settings.................................... 69
    Installing the Network Printer Client................................................................... 69
    Setting watched folder performance parameters................................................. 70
  Final setup for LiveCycle Rights Management ES2................................................. 71
  Setup for Content Services ES2............................................................................... 71
  Configuring LiveCycle ES2 to access LDAP............................................................ 71
  Enabling FIPS mode.................................................................................................. 73
  Configuring HTML digital signature...................................................................... 73
Configuring the Document Management service ................................................................. 74
Configuring the Connector for EMC Documentum service .................................................... 74
Creating the XDP MIME format in a Documentum repository .............................................. 77
Configuring the Connector for IBM FileNet service ............................................................. 78
Configuring SharePoint client access ................................................................................... 87
  Obtain and edit the share.war file ....................................................................................... 87
  Deploy the share.war file ........................................................................................................ 88
Enabling CIFS in IPv6 mode ................................................................................................. 88
  Edit the contentservices.war file ......................................................................................... 88
Configuring the Connector for IBM Content Manager ......................................................... 89
Perform a system image backup ............................................................................................ 92
Uninstalling LiveCycle ES2 .................................................................................................... 93

8 Configuring Load Balancing .............................................................................................. 94
  Configuring an Apache server plug-in .................................................................................. 94
  Installing the Apache HTTP server plug-in ........................................................................ 94
  Configuring the Apache HTTP server plug-in ..................................................................... 94
  Testing the Apache HTTP server plug-in ............................................................................. 95

9 Advanced Production Configuration .................................................................................. 96
  Configuring pool size for Output ES2 and Forms ES2 ....................................................... 96
  LiveCycle PDF Generator ES2 ............................................................................................ 96
  Configuring EJB Pool Size .................................................................................................. 96
  Enabling CIFS on Windows ................................................................................................ 97
  Enable NetBIOS over TCP/IP .............................................................................................. 98
  Add additional IP addresses ............................................................................................... 98
  Disable SMB over NetBIOS registry (Windows 2003 only) ................................................. 98
  Disable File and Printer Sharing (Windows 2008 only) ..................................................... 98

10 Troubleshooting ................................................................................................................ 99

A Appendix - Install Command Line Interface ................................................................. 100
  Installing LiveCycle ES2 ..................................................................................................... 100
  Error logs ............................................................................................................................ 102
  Uninstalling LiveCycle ES2 in console mode .................................................................... 102
  Next steps ........................................................................................................................... 103

B Appendix - LCM Command Line Interface ................................................................... 104
  Order of operations ............................................................................................................. 104
  Command Line Interface property file .............................................................................. 105
    Common properties ........................................................................................................... 105
    Configure LiveCycle properties ...................................................................................... 108
    Configure or Validate Application Server properties ...................................................... 111
    Deploy LiveCycle properties .......................................................................................... 114
    Initialize LiveCycle properties ....................................................................................... 114
    Initialize BAM properties ............................................................................................... 114
    Deploy LiveCycle Components properties ..................................................................... 115
  Command Line Interface Usage ....................................................................................... 115
  Examples Usage ................................................................................................................ 118
  Error Logs ......................................................................................................................... 118
  Next steps .......................................................................................................................... 118
About This Document

This document is one of several resources available to help you learn about Adobe® LiveCycle® ES2 (Enterprise Suite) Update 1. LiveCycle ES2 is a flexible, extensible platform that helps automate and accelerate the flow of business-critical information to and from customers, partners, constituents, and employees.

This document provides information about how to install and configure the following modules in a clustered environment on Microsoft® Windows®, Linux®, and Sun™ Solaris™, and how to deploy the modules to BEA WebLogic Server®:

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

Who should read this document?

This document provides information for administrators or developers who are responsible for installing, configuring, administering, or deploying LiveCycle ES2 components in a clustered environment. The information provided assumes that readers are familiar with Java™ 2 Platform, Enterprise Edition (J2EE) application servers; Linux, Windows, or Solaris operating systems; Oracle®, DB2®, or SQL Server database servers; and web environments.
## Conventions used in this document

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>[LiveCycleES2 root]</code></td>
<td>Windows: C:\Adobe\Adobe LiveCycle ES2\</td>
<td>The installation directory that is used for all LiveCycle ES2 modules. The installation directory contains subdirectories for LiveCycle Configuration Manager and the LiveCycle ES2 SDK.</td>
</tr>
<tr>
<td></td>
<td>Linux and UNIX: /opt/adobe/adobe livecycle es2/</td>
<td></td>
</tr>
<tr>
<td><code>[appserver root]</code></td>
<td>Windows: C:\bea\wlserver_10.3\</td>
<td>The home directory of the application server that runs the LiveCycle ES2 services.</td>
</tr>
<tr>
<td></td>
<td>WebLogic Server 10g on Linux and Solaris: /opt/bea/wlserver10.3/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebLogic Server 11g on Windows: C:\Oracle\Middleware\wlserver_10.3\</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebLogic Server 11g on Linux and Solaris: /opt/Oracle/Middleware/wlserver10.3/</td>
<td></td>
</tr>
<tr>
<td><code>[server name]</code></td>
<td>Server-0</td>
<td>The name of the server configured on your application server.</td>
</tr>
<tr>
<td><code>[BEA_HOME]</code></td>
<td>Windows: C:\bea\</td>
<td>The install directory for WebLogic Server as specified for the <code>BEA_HOME</code> environment variable.</td>
</tr>
<tr>
<td></td>
<td>WebLogic Server 10g on Linux and Solaris: /opt/bea/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebLogic Server 11g on Windows: C:\Oracle\Middleware\</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebLogic Server 11g on Linux and Solaris: /opt/Oracle/Middleware/</td>
<td></td>
</tr>
</tbody>
</table>
The resources in this table can help you learn more about LiveCycle ES2.

<table>
<thead>
<tr>
<th>Name</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[appserverdomain]</td>
<td>WebLogic 10g Server on Windows: \C:\bea\user_projects\domains\base_domain\</td>
<td>The domain that you configured on WebLogic Server.</td>
</tr>
<tr>
<td></td>
<td>WebLogic 11g Server on Windows: \C:\Oracle\Middleware\user_projects\domains\base_domain/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebLogic 10g Server on Linux and UNIX: /opt/bea/user_projects/domains/base_domain/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebLogic 11g Server on Linux and UNIX: /opt/Oracle/Middleware/user_projects/domains/base_domain/</td>
<td></td>
</tr>
<tr>
<td>[APACHE_HOME]</td>
<td>The location where Apache is installed. The directory to which the Apache HTTP Server is installed.</td>
<td>Applicable only if you intend to use Apache as a load balancer.</td>
</tr>
<tr>
<td>[dbserver root]</td>
<td>The location where the LiveCycle ES2 database server is installed.</td>
<td>Depends on the database type and your specification during installation.</td>
</tr>
</tbody>
</table>

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

**Additional information**

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

<table>
<thead>
<tr>
<th>For information about</th>
<th>See</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparing to install LiveCycle ES2 on a server cluster</td>
<td>[Preparing to Install LiveCycle ES2 (Server Cluster)]</td>
</tr>
<tr>
<td>Performing administrative tasks for LiveCycle ES2</td>
<td>[LiveCycle Administration Console Help]</td>
</tr>
<tr>
<td>Installing LiveCycle Workbench ES2</td>
<td>[Installing Your Development Environment]</td>
</tr>
<tr>
<td>Other services and products that integrate with LiveCycle ES2</td>
<td>[<a href="http://www.adobe.com">www.adobe.com</a>]</td>
</tr>
<tr>
<td>Patch updates, technical notes, and additional information on this product version</td>
<td>[LiveCycle Technical Support]</td>
</tr>
</tbody>
</table>
1 Introduction

This chapter provides information to help you understand how to prepare your cluster to install LiveCycle ES2, the type of installation and deployment you should perform for LiveCycle ES2, and information that will help you understand the LiveCycle ES2 installation, configuration, and deployment process:

- “Preparing your server cluster to install LiveCycle ES2” on page 9
- “Installation, configuration, and deployment process” on page 9
- “LiveCycle ES2 installation, configuration, and deployment lists” on page 11

For information about preparing your system to create your server cluster and install LiveCycle ES2, including system requirements, preparing the database, and configuring LiveCycle Reader Extensions ES2 credentials, see Preparing to Install LiveCycle ES2 (Server Cluster).

1.1 Preparing your server cluster to install LiveCycle ES2

You must create and configure your server cluster before you install, configure, and deploy LiveCycle ES2. (See “Creating a WebLogic Server Cluster” on page 13.)

1.2 Installation, configuration, and deployment process

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

- **Installing**: Install LiveCycle ES2 by running the installation program. Installing LiveCycle ES2 places all of the required files onto your computer, within one installation directory structure. The default installation directory is C:\Adobe\Adobe LiveCycle ES2 (Windows) or /opt/adobe_livelcycle_es2 (Linux and Solaris); however, you can install the files to a different directory. In this document, the default installation directory is referred to as [LiveCycleES2 root]. (See “Installing the LiveCycle ES2 Modules” on page 25.)

- **Configuring and assembling**: Configuring LiveCycle ES2 modifies various settings that determine how LiveCycle ES2 works. Assembling the product places all of the installed components into several deployable EAR and JAR files, according to your configuration instructions. Configure and assemble the components for deployment by running LiveCycle Configuration Manager. (See “Configuring LiveCycle ES2 for Deployment” on page 39.) You can configure and assemble multiple LiveCycle ES2 modules at the same time.

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

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

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

- Configure LiveCycle ES2 modules in an EAR file for deploying to the application server cluster
- Configure application server properties across all servers of the cluster to support LiveCycle ES2
- Package JDBC modules into LiveCycle ES2 EARs (secure datasources)
- Validate application server cluster configuration
- Package JDBC modules into LiveCycle ES2 EAR files (secure datasources)
- Deploy LiveCycle ES2 EAR files
- Initialize LiveCycle ES2 database
- Deploy LiveCycle ES2 components
- Validate LiveCycle ES2 component deployment
- Import LiveCycle ES2 Samples into LiveCycle ES2 (optional)

**Note:** In addition to the LiveCycle ES2 samples that you can import, you can access more samples from the Adobe web site.

- Configure LiveCycle ES2 components

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

If you want to install Business Activity Monitoring, see the “Configuring LiveCycle Business Activity Monitoring ES2” section in the single server install guide for WebLogic after you install all other LiveCycle ES2 components.

Although you can use LiveCycle Configuration Manager to configure the application server cluster and set up data sources to the database, you may prefer to complete these steps manually.

You may want to configure your application server cluster manually for these reasons:

- You have other applications running on the application server 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 LiveCycle Configuration Manager to configure LiveCycle ES2 components with the required font, temp, and GDS directories
- Manually configure the application server cluster, configure data sources, and deploy LiveCycle ES2 EAR files
- Run LiveCycle Configuration Manager to initialize the database
- Run LiveCycle Configuration Manager to deploy LiveCycle ES2 components and validate the LiveCycle ES2 component deployment.
- Configure LiveCycle ES2 components.
1.4 Upgrading to LiveCycle ES2

If you are upgrading from LiveCycle 7.x, review the Upgrading from LiveCycle 7.x to LiveCycle ES2 guide.

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

1.5 LiveCycle ES2 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 LiveCycle Configuration Manager to configure and deploy LiveCycle ES2 EAR files, configure the application server cluster, initialize the database, and deploy the modules to the server cluster. Use the automatic method if you want to have limited input into the installation, configuration, and deployment of LiveCycle ES2.

**Manual method:** Refers to using LiveCycle Configuration Manager only to configure LiveCycle ES2 EAR files, initialize the database, and deploy the modules to the server cluster. Configuring the application server cluster, connecting to the database, and deploying LiveCycle ES2 EAR files to the server cluster 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 LiveCycle ES2. For example, this method may be used in a locked-down server environment.

1.5.1 Automatic installation and deployment list

The following list includes the steps that are required for installing LiveCycle ES2 modules by using the automatic method. The WebLogic Server cluster must be installed before you perform the installation:

- Ensure that you have the required software installed in the target environment. (See Preparing to Install LiveCycle ES2 and “Creating a WebLogic Server Cluster” on page 13).
- Run the installation program. (See “Installing the LiveCycle ES2 Modules” on page 25."
- Run LiveCycle Configuration Manager and select all the tasks on the Task Selection screen. This step configures and assembles the LiveCycle ES2 EAR files, configures application server settings, deploys the EAR files and other components to the application server cluster, initializes the LiveCycle ES2 database, and verifies the deployment. (See “Configuring LiveCycle ES2 for Deployment” on page 39."
- Access the LiveCycle Administration Console and User Management. (See “Accessing LiveCycle Administration Console” on page 31.)
- (Optional) Configure LDAP access. (See “Configuring LiveCycle ES2 to access LDAP” on page 44.)

1.5.2 Manual installation and deployment list

The following list includes the steps that are required for installing LiveCycle ES2 by using the manual method. Your application server 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. (See Preparing to Install LiveCycle ES2 (Server Cluster)."
Ensure that you created and configured the application server cluster in the target environment. (See “Creating a WebLogic Server Cluster” on page 13.)

Run the installation program. (See “Installing the LiveCycle ES2 Modules” on page 25.)

Run LiveCycle Configuration Manager and select the Configure LiveCycle ES2 EARs task. This task configures and assembles LiveCycle ES2. (See “Configuring LiveCycle ES2 for Deployment” on page 39.)

Manually configure the WebLogic Application Server. “Manually Configuring a WebLogic Server Cluster” on page 43.

Deploy the EAR files to the application server cluster. You can do this manually or use LiveCycle Configuration Manager. (See “Manually Configuring a WebLogic Server Cluster” on page 43.)

Run LiveCycle Configuration Manager to deploy LiveCycle ES2 component files, initialize the LiveCycle ES2 database, and (optionally) deploy product samples. (See “Configuring LiveCycle ES2 for Deployment” on page 39.)

Access LiveCycle Administration Console and User Management. (See “Accessing LiveCycle Administration Console” on page 31.)

(Optional) Configure LDAP access. (See “Configuring LiveCycle ES2 to access LDAP” on page 44.)
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. For details about installing WebLogic Server, go to these websites:

- (WebLogic Server 10gR3) Go to this documentation page.

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 “Preparing to install” on page 13.)
- Install the WebLogic Server software. (See “Installing WebLogic Server” on page 14.)
- Create the WebLogic domain. (See “Creating a WebLogic domain” on page 14.)
- Configure the WebLogic Server cluster. (See “Creating and configuring the WebLogic Server cluster” on page 16.)
- Test the WebLogic Server cluster. (See “Testing the WebLogic Server cluster” on page 21.)

2.1 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 ES2 (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 ES2 (Server Cluster).)
2.2 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. (See “To install WebLogic Server software:” on page 14.)
- Create the WebLogic domain. (See “To create a WebLogic domain:” on page 14.)
- (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 the admin server of the cluster and not on the other 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 10gR3 on 32-bit Windows) server103_win32.exe
   - (WebLogic Server 10gR3 on 64-bit Windows, Linux, or Solaris) server103_generic.jar

**Note:** The 64-bit version of WebLogic 10 requires that you download and install the 64-bit JDK (JRockit Java 6). The 64-bit JDK files for WebLogic 10 are available at [http://www.oracle.com/bea/index.html?CNT=index.htm&FP=/content/products/weblogic/jrockit/](http://www.oracle.com/bea/index.html?CNT=index.htm&FP=/content/products/weblogic/jrockit/). For the Solaris 64-bit JDK, first install the 32-bit JDK (Sun Java 6) from [Sun Java SE Downloads](http://www.oracle.com/technetwork/java/javase/downloads/index.html). 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.

2.3 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 Create or Extend a Configuration screen, select **Create a new WebLogic domain** and click **Next**.

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

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

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

7. In the right pane, select **BEA Supplied SDKs** and the appropriate platform, and then click **Next**:
   - (Solaris) **Sun SDK**.
   - (All other platforms) **JRockit SDK**.

8. In Customize Environment and Services Settings, select **No** and click **Next**.

9. Enter a domain name and click **Create**.
   
   **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]`.

10. Open a text editor and enter the following lines:
    ```
    username=[username from weblogic install]
    password=[password from weblogic install]
    ```

11. Save the text file as `[BEA_HOME]/user_projects/domains/[domain name]/boot.properties.

   **Note:** For more information, go to the following site:
   - (WebLogic Server 10gR3) Managing Server Startup and Shutdown

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

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

**To configure transaction time-out settings for the cluster:**

1. On the computer hosting the WebLogic Administration Server, open a command window and navigate to `[BEA_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 Administration Console by typing `http://[Computer1]: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 Administration Console on the administration server.

5. Under Domain Structure, click your domain name as defined in “Creating a WebLogic domain” on page 14.

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.

2.4 Creating and configuring the WebLogic Server cluster

Perform the following tasks to configure your WebLogic Server cluster:

- Create the members of the cluster. (See “Creating the cluster” on page 16.)
- Configure authentication credentials for the servlet container. (See “Setting authentication credentials for the servlet container” on page 18.)
- Configure the node manager for the cluster. (See “Configuring the node manager for the cluster” on page 19.)
- Start the node manager and the nodes of the cluster. (See “Starting the node manager and managed servers” on page 20.)

2.4.1 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 computer, and creating server instances (servers) on the machine. (See “To create the members of the cluster” on page 16.)
- Create the cluster and add the members to the cluster. (See “To create the cluster” on page 17.)

➤ To create the members of the cluster:

1. In the WebLogic Administration Console, under Domain Structure, click Environment > Machines.

2. Under Change Center, click Lock & Edit.

3. Click New and enter the computer name in the Name box, select the appropriate operating system from the Machine OS list, and then click OK. The Summary of Machines screen appears.

4. Click the name of the machine you created, then click on the Node Manager tab.

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 and click Save.

6. Under Domain Structure, click Environment > Machines and repeat steps 6 to 8 for each cluster node you want to add to the cluster. After you add and configure Node Manager for all the machines of the cluster, proceed to step 10.

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.
   - On a vertical cluster, use unique port numbers for each vertically clustered WebLogic Server instance on a computer of the cluster (for example, port number 8001 for the first instance, 9001 for the second instance, and so on).

13. Repeat steps 11 to 15 for each server node you want to add to the cluster, and then proceed to step 17.

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

**➤ To create the cluster:**

1. In the WebLogic 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, **lc9_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 ES2 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**.

**➤ To assign servers to the cluster:**

1. In the WebLogic Administration Console, under Domain Structure, click **Environment > Clusters**.
2. In the **Cluster** table, select the cluster you created in “To create the cluster:” on page 17.

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**.

### 2.4.2 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 “*Installing WebLogic Server*” on page 14 for details.

2. Create a WebLogic domain. See “*Creating a WebLogic domain*” on page 14 for details.

   **Caution:** 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 “To create the members of the cluster:” on page 16 for more details.

4. Add the new member to the cluster. See “To assign servers to the cluster:” on page 17 for details.

### 2.4.3 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.bat`
   - (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.

2.4.4 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 Administration Console. Perform these tasks:

- Configure the node manager for the cluster. (See “To configure the node manager for the cluster:” on page 19.)
- (Horizontal clusters only) Enroll the managed servers with the node manager for the cluster. (See “To enroll the managed servers with the administration server:” on page 19.)
- (Horizontal clusters only) Configure the servers of the cluster for mutual access. (See “To allow mutual access between servers of the cluster:” on page 20.)

➤ To configure the node manager for the cluster:

1. In the WebLogic Administration Console, under Domain Structure, click your domain name as defined in “To create a WebLogic domain:” on page 14.
2. Click the Security tab, click General, and then click Advanced to expand the advanced details.
3. Under Change Center, lick Lock & Edit.
4. In the NodeManager Username 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.

➤ To enroll the managed servers with the administration server:

1. On a managed node that is to be 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.
• \[\text{adminpassword}\] is the password for the administration server user.

• \[\text{adminserverURL}\] is the URL to the administration server in the format \text{t3://hostname:[port]}, where [port] is probably 7001.

\textbf{Note:} For help about this command, type \texttt{help('connect')} at the \texttt{wlst} command prompt.

3. When connected to the administration server, enter the following command to enroll the secondary computer in the cluster:
   \[
   \text{nmEnroll('} [\text{appserver domain}]' \])
   \]
   where \[\text{appserver domain}\] 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 \text{C:/bea/user_projects/domains/[domain name]}.

4. Complete the task by entering the command \texttt{exit()}

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

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

➤ \textbf{To 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:
   \[
   \text{localhost} \\
   127.0.0.1 \\
   11.11.11.11 \\
   22.22.22.22
   \]

2. Save the file to each computer in the cluster as \texttt{nodemanager.hosts} in one of these locations:
   • (Windows) \texttt{[appserver root]\common\nodemanager}
   • (Linux, UNIX) \texttt{[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) \texttt{C:\WINDOWS\system32\drivers\etc}
   • (Linux, UNIX) \texttt{/etc}

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

5. Save the edited file to each computer in the cluster in one of the following locations:
   • (Windows) \texttt{C:\WINDOWS\system32\drivers\etc}
   • (Linux, UNIX) \texttt{/etc}

2.4.5 \textbf{Starting the node manager and managed servers}

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

➤ \textbf{To start the node manager:}

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

1. In the WebLogic 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.

2.5 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 ES2.

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 -50309843380253995:hostname:[7002,7002,-1,-1,-1,-1,-1]: [domain name]:hostname to cluster: lc9_cluster view. >
```

2.6 Next steps

You must now install the LiveCycle ES2 solution component files. (See “Installing the LiveCycle ES2 Modules” on page 25.)
This section describes the first phase of setting up a LiveCycle ES2 system that is running the LiveCycle ES2 installation program on Windows, Linux, and Solaris. A subsequent phase will include running LiveCycle Configuration Manager to configure and deploy LiveCycle ES2.

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

LiveCycle ES2 also provides a command line interface (CLI) for the installation program. See “Appendix - Install Command Line Interface” on page 110 for instructions on using the CLI. There is also a CLI for LiveCycle Configuration Manager. See “Appendix - LCM Command Line Interface” on page 114. These CLIs are intended to be used by advanced users of LiveCycle ES2 or in server environments that do not support the use of the graphical user interface of the installation program or of LiveCycle Configuration Manager.

This chapter covers the following topics:

- “Checking the installer” on page 25
- “Installing the product files” on page 26
- “Viewing the error log” on page 29
- “Configuring LiveCycle ES2-installed JAR files” on page 26
- “Configuring the caching locators (caching using TCP only)” on page 29
- “Configuring the font directories” on page 32

### 3.1 Checking the installer

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

➤ **Check the DVD installation media:**

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

➤ **Check the downloaded files:**

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

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

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

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

3.2 Installing the product files

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

- (Windows) C:\Adobe\Adobe LiveCycle ES2\n- (Linux or Solaris) /opt/adobe/adobe_livecycle_es2/

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

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

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.

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

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

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

- (Solaris) /var/tmp

When you are installing the modules on UNIX-like systems, you must be logged in as the root user to successfully install the modules to the default location, which is /opt/adobe/adobe_livecycle_es2. If you are logged in as a non-root user, change the installation directory to one that you have permissions (read-write-execute privileges) for. For example, you can change the directory to /home//username)/adobe_livecycle_es2.

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

Temporary files are generated in the system default temp directory or in the directory that you specified. In certain instances, the generated temporary files may remain after the installer is closed. You can remove these files manually.
On Windows, improve the speed of installation by disabling any on-access virus scanning software during installation.

### 3.2.1 Installing on a Windows staging platform for Linux or UNIX

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

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

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

### 3.2.2 Configuring the JAVA_HOME environment variable

The JAVA_HOME environment variable must point to the Java SDK for your application server as outlined in the Supported Software table in *Preparing to Install LiveCycle ES2 (Server Cluster)*.

### 3.2.3 Installing LiveCycle ES2

This section covers the initial installation of LiveCycle ES2 product files. For information about configuration and deployment, see “Configuring LiveCycle ES2 for Deployment” on page 39.

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

➤ **Install LiveCycle ES2:**

1. Ensure that the JAVA_HOME environment variable is set to the directory where Sun Java (Solaris) or JRockit (Linux/UNIX) JDK is installed.

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

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

5. If you have a previous version of LiveCycle ES (8.x) installed on the computer where you are running the installer, the Preparation for Upgrade screen appears. You can choose to prepare for an upgrade to LiveCycle ES2 or perform a new installation of LiveCycle ES2. Select **Next** to continue installing LiveCycle ES2.

   - **Prepare to upgrade existing installation to LiveCycle ES2 v9.0**: Installation program prepares the data from your existing LiveCycle ES (8.x) installation for an upgrade to LiveCycle ES2. If you select this option, update your module license in LiveCycle Administration Console after the installation.

6. **Install LiveCycle ES2 v9.0**: Installation program installs LiveCycle ES2. On the Choose Installation Folder screen, accept the default directory as listed or click **Choose** and navigate to the directory where you intend to install LiveCycle ES2, and then click **Next**.

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

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

7. **(Windows only and when Manual installation is selected)** On the Manual Installation Options screen, select the target deployment option and click **Next**:

   - **Windows (Local)**: Select this option if you are installing and deploying LiveCycle ES2 on the local server.

   - **Staged (Installed on Windows targeting remote systems)**: Select this option if you plan to use Windows as a staging platform for your deployment and then select the target operating system on the remote server. You can select a UNIX operating system as the target for deployment even if you are installing on Windows. (See "Installing on a Windows staging platform for Linux or UNIX" on page 27.)

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

8. Read the LiveCycle ES2 Server License Agreement, select **I Accept** to accept the terms of the license agreement and then click **Next**. If you do not accept the license agreement, you cannot continue.

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

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


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

   **Note**: To run LiveCycle Configuration Manager later, deselect the **Start LiveCycle Configuration Manager** option before you click **Done**. You can start LiveCycle Configuration Manager later using the appropriate script in the [LiveCycleES2 root]/configurationManager/bin directory. See “Configuring LiveCycle ES2 for Deployment” on page 39.
3.3 Viewing the error log

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

3.4 Configuring LiveCycle ES2-installed JAR files

You must copy the following JAR files that LiveCycle ES2 installs to specific directories on your WebLogic Servers:

- pop3.jar file: Copy this file to the same location on all nodes in the cluster.
- database driver JAR file: Copy the database driver file specific to your LiveCycle ES2 database.

➤ Copy the pop3.jar file:

1. Create a directory named idplib in [appserver domain].
2. Copy the pop3.jar file from [LiveCycleES2 root]/lib/weblogic to [appserver domain]/idplib on the WebLogic node.

➤ Copy the necessary database drivers:

1. Locate the database drivers at [LiveCycleES2 root]/lib/db.
2. Copy the appropriate database JAR file to [appserver domain]/idplib on the WebLogic node.

3.5 Configuring the caching locators (caching using TCP only)

If you implement caching for your LiveCycle ES2 cluster by using TCP, configure the TCP locators to find other members of the LiveCycle ES2 cluster.

Note: This section does not apply if you implement caching for your LiveCycle ES2 cluster by using UDP. (See “Configuring server start arguments” on page 44 to configure caching for your LiveCycle ES2 cluster using UDP.)

Do the following to enable LiveCycle ES2 cluster caching using TCP:

- Ensure that the TCP locators are installed and configured. TCP locators are installed in the [LiveCycle ES2 root]/lib/caching directory, with a default configuration, when you install LiveCycle ES2. You can change the default configuration. (See “Modifying the TCP locators” on page 29.)
- Configure each node in the LiveCycle ES2 cluster to use the locators. (See “Configuring server start arguments” on page 44.)
- Ensure that the TCP locators are running. (See “Starting the TCP locators” on page 31.)
3.5.1 Modifying the TCP locators

The LiveCycle ES2 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 ES2 cluster. You can also create additional failover locators to support high availability in your cluster.

You can also modify the TCP locators to use a port other than the default port (22345).

➤ To install the TCP locators:

1. Log on to the computer where you installed LiveCycle ES2 and navigate to the \[LiveCycle ES2 root\]/lib/caching directory.
2. Copy the caching directory and its contents to the computer on which you want to run the locators.

➤ To 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 ES2, in the \[LiveCycle ES2 root\]/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 1 and 65535.
   
   **Caution:** 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 ES2 cluster. (See “Configuring server start arguments” on page 44.)

3. (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 ES2 cluster.
   
   See “Configuring server start arguments” on page 44.

   **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.

4. Save the edited file.

5. Repeat steps 1 to 4 on any additional locators for your LiveCycle ES2 cluster.

➤ To 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 ES2, in the \[LiveCycle ES2 root\]/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 1 and 65535.

Caution: 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 ES2 cluster.

See “Configuring server start arguments” on page 44.

3. (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 ES2 cluster.

   See “Configuring server start arguments” on page 44.

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

4. Save the edited file.

5. Repeat steps 1 to 4 on any additional locators for your LiveCycle ES2 cluster.

3.5.2 Starting the TCP locators

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 ES2 cluster, caching will not function.

To start the 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 ES2, in the \[LiveCycle ES2 root\]/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 steps 1 to 3 on any additional locators for your LiveCycle ES2 cluster.
To stop the 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 ES2, in the 
   \[\text{LiveCycle ES2 root}/lib/caching\] directory.

2. Run the appropriate file:
   - (Windows) `stoplocator.bat`
   - (UNIX) `stoplocator.sh`

3. Repeat steps 1 to 3 on any additional locators for your LiveCycle ES2 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.

### 3.6 Configuring the font directories

You must configure the font directories for each node in the cluster, including the LiveCycle ES2 fonts that are installed in the \[\text{LiveCycleES2 root}/fonts\] 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 the \[\text{LiveCycle ES2 root}/fonts\] 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 ES2 using LiveCycle Configuration Manager.

**Caution:** The font directories must be distinct from the GDS directory. However, they may be distinct sibling subdirectories of a single shared parent directory.

### 3.7 Next steps

*New for 9.5*

You must now configure LiveCycle ES2 for deployment. (See “Configuring LiveCycle ES2 for Deployment” on page 39.) You may choose to configure LiveCycle ES2 later if you plan to install LiveCycle ES2.5 Solution Accelerators. In that case, you are required to first apply LiveCycle ES2 service pack 2 or later and install LiveCycle ES2.5 Solution Accelerators.

For more information about installing Solution Accelerators, see *Installing and Deploying LiveCycle ES2.5 Solution Accelerators*. 
This chapter describes how to perform the following tasks:

- Configure LiveCycle ES2 modules in EAR files for deploying to the application server
- Configure application server properties to support LiveCycle ES2
- Validate application server configuration
- Package JDBC modules into LiveCycle ES2 EAR files (secure datasources)
- Deploy LiveCycle ES2 EAR files
- Initialize the LiveCycle ES2 database
- Deploy LiveCycle ES2 components
- Configure LiveCycle ES2 components
- Validate the LiveCycle ES2 component deployment
- (Optional) Configure the LiveCycle ES2 Connectors for ECM, Reader Extensions ES2, PDF Generator ES2, and PDF Generator 3D ES2 modules

**Note:** (Optional) LiveCycle Configuration Manager does not support configuration, deployment and database initialization for LiveCycle Business Activity Monitoring ES2 on manual installation option. See “Configuring LiveCycle Business Activity Monitoring ES2” in the single server install guide for your application server if you want to install BAM.

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

### 4.1 About LiveCycle Configuration Manager

LiveCycle Configuration Manager is a wizard-like tool used to configure, deploy, and validate LiveCycle ES2 components for deployment to the application server. You can optionally use LiveCycle Configuration Manager to configure the application server and deploy the product EAR files to the application server.

LiveCycle Configuration Manager is installed with the module files when you run the LiveCycle ES2 installation program. When you run LiveCycle Configuration Manager, you specify the LiveCycle ES2 modules you are configuring, and the tasks that you want LiveCycle Configuration Manager to perform.

You can start LiveCycle Configuration Manager from the installation program or any time after the installation. If you plan to use LiveCycle Configuration Manager to configure the application server or deploy to the application server, the application server must be started.

You can configure an application server that is installed on a different computer. However, an application server must also be installed (but does not have to be running) on the computer that is running LiveCycle Configuration Manager so that LiveCycle Configuration Manager can use the application server library files.
4.2.1 CLI versus GUI versions of LiveCycle Configuration Manager

This section describes the GUI version of LiveCycle Configuration Manager. For instructions about using
the command line interface (CLI) version of LiveCycle Configuration Manager, see "Appendix - LCM
Command Line Interface" on page 95.

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

<table>
<thead>
<tr>
<th>LiveCycle ES2 configuration task</th>
<th>LCM GUI</th>
<th>LCM CLI</th>
<th>Manual (Non-LCM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure LiveCycle ES2</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Configure application server</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Validate application server configuration</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Package JDBC Modules into LiveCycle ES2 EARs</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Deploy LiveCycle ES2 EARs</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Initialize LiveCycle ES2 database</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Initialize Business Activity Monitoring ES2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Validate LiveCycle ES2 server connection</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Deploy LiveCycle ES2 components</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Validate LiveCycle ES2 component deployment</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Configure LiveCycle components (Includes the following tasks)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>● Configure ECM connectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Configure PDF Generator ES2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Configure Reader Extensions ES2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Import Samples</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

4.3 Location of JDBC drivers

During configuration, you must provide the location of the JDBC drivers for your database. The Oracle, SQL
Server, and DB2 drivers are in the [LiveCycle ES2 root]/lib/db/[database] directory.

4.4 Configuring and deploying LiveCycle ES2

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

Caution: Ensure that you have assigned listen addresses for Administration Server, Node Manager, and
Managed Servers, before running LiveCycle ES2 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.
**Note:** Using LiveCycle Configuration Manager to deploy LiveCycle ES2 modules to remote servers is supported only for node-managed application servers, not for stand-alone application servers.

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

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

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

- `adobe-livecycle-native-weblogic-<OS>.ear`
- `adobe-livecycle-weblogic.ear`
- `adobe-workspace-client.ear` (if you installed LiveCycle Process Management ES2)
- `adobe-contentservices.ear` (if you installed LiveCycle Content Services ES2)

If you use LiveCycle Configuration Manager to deploy the EAR files, LiveCycle Configuration Manager accesses these files and deploys them to the application server. When you manually deploy the LiveCycle ES2 EAR files, you can access the files in this directory and deploy them to the application server.

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

LiveCycle 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 (for example, when you deploy the initial custom-named EAR files, and when applying any later changes such as service packs or patches).

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

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

```
-Dlcm.font.override=<FONT_FAMILY_NAME>
```

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

➤ **Configure using LiveCycle Configuration Manager:**

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

**Tip:** If you are running LiveCycle Configuration Manager again after an earlier run, parameters that are already configured are shown as non-editable. Click **Edit configurations** to make these fields editable and make changes.
Note: You cannot configure settings for IPv6-based clusters using LiveCycle Configuration Manager.

If your WebLogic cluster is IPv6-based, see “Manually Configuring a WebLogic Server Cluster” on page 43.

1. If you did not start LiveCycle Configuration Manager automatically from the installation program, navigate to the [LiveCycleES2 root]/configurationManager/bin directory and enter the appropriate command:
   ● (Windows) ConfigurationManager.bat
   ● (Non-Windows)/ConfigurationManager.sh

2. If prompted, select a language and click OK.

3. On the Welcome screen, click Next.

4. On the Upgrade task selection screen, ensure that no options are selected, then click Next to continue.

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

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

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

   Note: To secure the data sources, select Package JDBC Modules into LiveCycle ES2 EARs (secure datasources). However, do not select this task if your LiveCycle ES2 implementation is required to handle XML Forms. Alternatively, perform the steps in this Technote to secure access to JNDI artifacts on your WebLogic application server.

   If you do not plan to configure the application server and deploy LiveCycle ES2 automatically by using LiveCycle Configuration Manager, do not select the Configure application server, Validate application server configuration, and Deploy LiveCycle ES2 EARs tasks. However, you must manually configure the application server by completing the steps provided in “Manually Configuring a WebLogic Server Cluster” on page 43.

Caution: Do not select the Configure application server option if you previously configured your application server cluster manually. Selecting this option for a manually configured application server cluster can cause LiveCycle ES2 errors or failure.

7. On the Configure LiveCycle ES2 (1 of 5) screen, click Configure. Click Next when done.

8. On the Configure LiveCycle ES2 (2 of 5) screen, click Next to accept the default directory locations, or customize the directories that LiveCycle ES2 will use to access fonts, and then click Next.
   ● (Optional) To change the default location of the Adobe server fonts directory, type the path or browse to the directory.
   ● (Optional) Specify a directory for the Customer fonts directory. The directory contains any additional fonts that you have licensed and installed.

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

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

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

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

For more information about creating a temporary directory in cluster environment, see *Preparing to Install LiveCycle ES2 (Server Cluster)*.

**Caution:** Future upgrades might fail if you specify a shared network directory as the temporary directory.

10. On the Configure LiveCycle ES2 (4 of 5) screen, add the location of the GDS directory path by typing the specific location of the GDS directory or clicking **Browse** to navigate to the location of the GDS directory.

For clusters, specify a shared GDS directory path accessible to all nodes in the cluster. You can map a shared network location to a Windows drive. You can then use the mapped drive as a root directory for GDS.

If you leave the GDS directory field empty, LiveCycle ES2 will create the directory in a default location in the application server directory tree. The location will be viewable after configuration by clicking LiveCycle Administration Console > Core settings.

**Note:** You must specify the location of the global document storage directory you established previously (see the *Preparing to Install to LiveCycle ES2 (Server Cluster)* guide).

**Caution:** Component deployment will fail on Windows if the GDS directory is at the drive root (for example, D:\). For GDS, you must make sure that the directory is not located at the root of the drive but is located in a subdirectory. For example, the directory should be D:\GDS and not simply D:\.

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

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

- **Use database:** Use the LiveCycle ES2 database for storing the persistent documents and long-lived artifacts. However, the file-system based GDS is also required for storing short-lived artifacts.

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

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

13. **(Content Services ES2 only)** On the LiveCycle Content Services ES2 Configuration screen, set the following parameters that Content Services ES2 will use, and click **Next**.
● **Deploy Type:** Select **Single Server** or **Cluster**.

● **Index Root Directory:** Specify the indexes directory that is used by Content Services ES2. This directory is unique for each cluster node and must have the same name and location on all nodes.

● **Content storage root directory:** Specify the root directory that is used by Content Services ES2. The content storage root directory should be a location shared by all instances in the cluster.

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

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

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

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

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

    **Windows Native (DLL Based):** Click **Browse** to select the path (usually, C:\Windows\system32) to where LiveCycle Configuration Manager will copy the DLL files. This step should be performed manually for the cluster nodes on which you do not plan to run LiveCycle Configuration Manager.

    The path where DLL files will be copied must be specified in the system PATH environment variable. For example, for Windows Server 2003 and 2008, the system PATH must include C:\Windows\system32.

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

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

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

**Windows only**

CIFS is not supported on Windows when the application server is running in pure IPv6 mode. You may have to update your DNS entries with CIFS server name and the virtual IP address assigned so that Windows clients can access the CIFS server by name.

**UNIX only**

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

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

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

14. (Content Services ES2 only) On the LiveCycle Content Services ES2 Module Configuration screen, do the following tasks, and then click Configure to configure the LiveCycle ES2 EAR files with the Content Services ES2 settings. After the configuration is complete, click Next. See Alfresco documentation for more information.

- Select the Alfresco Module Packages (AMP) that you want to include in Content Services ES2. By default, all AMPs that are dependent on the selected LiveCycle ES2 modules are included.
- (Optional) To include your own AMPs, select the Do you want to package your own AMPs in Content Services box, and click Browse to select the directory where the custom AMPs are available. All AMPs in the selected directory are packaged.

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

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

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

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

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

**Note:** To use OpenOffice.org on Linux or Solaris, set the Openoffice_PATH environment variable. Refer to “Setting environment variables” on page 35.

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

17. 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. Press F1 for details about the required information.

**Note:** On the Application Server Configuration Details screen in Adobe LiveCycle Configuration Manager, the format to use for the host name of the application server depends on the value in the Listen Address box in WebLogic Administration Console. If the Listen Address box is empty, you must leave the default 'localhost' as the host name. If the Listen Address box contains an IP address, you must use the same IP address for the host name.
**Note:** If you are using LiveCycle Configuration Manager to configure your application server and you enter the host name as an IP address, you must continue to use the IP address for any related access to the application server.

The Server Instance Name of the application server is case-sensitive.

LiveCycle Configuration Manager requires you to enter the qualified hostname of the server running the application server. The default value of localhost will not work.

**Caution:** Ensure that you select **Cluster** in the Deploy Type box.

18. On the Application Server Configuration Selection screen, select the tasks for LiveCycle Configuration Manager to perform, and click **Next**. Press **F1** for details about the required information. You can select one or more of the following tasks. Both tasks are selected by default.

- **Configure Server Settings**
- **Configure Datasource:** Select one of the following options to configure the datasource:
  - Package JDBC Modules (secure datasources)
  - Globally scoped datasources

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

You must perform the manual configuration tasks described in “Manually Configuring a WebLogic Server Cluster” on page 43.

19. **(If Configure Server Settings is selected)** On the Server Settings Configuration screen, provide the information for the fields, and then click **Next**. Press **F1** for details about the required information.

If you are configuring your server settings manually, without exiting LiveCycle Configuration Manager, perform the tasks that are described in the section “Configuring WebLogic Server settings” on page 43.

**Note:** The paths for pop3.jar and the JDK must be same on all nodes in the cluster.

20. **(If Configure Datasource option with Packaged JDBC Modules is selected)** On the Configure Datasource JDBC Driver Classpath screen, provide the path for JDBC driver.

21. **(If Configure Datasource option with globally scoped datasources is selected)** On the Datasource Configuration screen, 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.

If you are configuring your data source manually, without exiting LiveCycle Configuration Manager, perform the tasks describe in the section “Configure JDBC connectivity” on page 48.

**Note:** If you’re installing LiveCycle ES2 on WebLogic 11g R1 (version 10.3.3), ensure that you complete the procedures in “Creating JMX policies for database initialization” on page 46 before proceeding to the next step.

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

23. **(Configure Datasource with Packaged JDBC modules)** On the Package JDBC modules into LiveCycle ES2 EARs (1 of 2) screen, provide JDBC configuration details and click **Test Database Connection**. Press **F1** for detailed information about datasource configuration parameters.
24. **(Configure Datasource with Packaged JDBC modules)** On the Package JDBC modules into LiveCycle ES2 EARs (2 of 2) screen, provide details to generate an encrypted database password for WebLogic datasource configuration. Use one of the following options:

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

- **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.

25. Click **Configure** to package the JDBC modules into LiveCycle ES2 EARs, and when complete, click **Next**.

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

**Note:** **(WebLogic Only)** If you have packaged JDBC modules into LiveCycle ES2 EAR files, LiveCycle Configuration Manager will report failed datasource validation during application server configuration validation. You can ignore this message.

27. On the LiveCycle ES2 IVS EARs Inclusion Confirmation screen, if applicable, select the option to include the Installation Verification Sample (IVS) EAR files in the deployment set.

28. On the Deploy LiveCycle ES2 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, check if a directory named `null` has been created in `[appserverdomain]/null`. If yes, stop the managed server, node manager, and the admin server and then start them in the reverse order. Ensure that a directory named `adobe` is created in `[appserverdomain]` after the restart. Now, delete the `[appserverdomain]/null` directory.

29. On the LiveCycle ES2 Database Initialization screen, verify that the host and port information and then click **Initialize**. The database initialization task creates tables in the database, adds default data to the tables, and creates basic roles in the database. When the initialization has completed successfully, click **Next**.

**Note:** The port on this screen refers to the managed server instead of the admin server port.

**Note:** You need to initialize the database against only one server of the cluster. Subsequent steps need to be performed on only this server as well.

30. On the LiveCycle ES2 Server Information screen, in the **Password** box, type **password**. (This password is the default administrator password; it is recommended that you change the password later.)

31. 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.
32. 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.

33. On the LiveCycle Component Deployment screen, click Deploy. The components that are deployed at this time are Java archive files that plug into the LiveCycle ES2 service container for purposes of deploying, orchestrating, and executing services. Click View Progress Log to view the deployment progress and, when the deployment has completed successfully, click Next.

34. On the LiveCycle Component Deployment Validation screen, click Validate. LiveCycle Configuration Manager validates that the LiveCycle components (Java archive files) are deployed to and running on the LiveCycle ES2 server. Click View Progress Log to view the validation progress and, when the validation has completed successfully, click Next.

35. On the Configure LiveCycle Components screen, select the tasks to run with LiveCycle Configuration Manager, and click Next. Press F1 for more information.

36. (If EMC Documentum, IBM FileNet or IBM Content Manager is selected for configuration) On the LiveCycle Server JNDI Information screen, enter the host name and port number for the JNDI server. Press F1 for more information.

37. (Optional - EMC Documentum only) On the Specify Client for EMC Documentum screen, select Configure Connector for EMC Documentum Content Server, and specify the following settings. Enter the details, click Verify, and when complete, click Next to continue.
   - Choose EMC Documentum Client Version: Select the client version to use with the EMC Documentum Content Server.
   - EMC Documentum Client Installation Directory Path: Click Browse to select the directory path.

38. (Optional - EMC Documentum only) On the Specify EMC Documentum Content Server Settings screen, enter the details of the EMC Documentum Server, and then click Next. Press F1 for more information about the details you need to enter.


40. (Optional - IBM Content Manager only) On the Specify Client for IBM Content Manager screen, select Configure Client for IBM Content Manager, and enter a value for the IBM Content Manager Client Installation Directory Path. Click Verify and when complete, click Next to continue.

41. (Optional - IBM Content Manager only) On the Specify IBM Content Manager Server Settings screen, enter the details of the IBM Content Manager Server, and click Next. Press F1 for more information.

42. (Optional - IBM Content Manager only) On the Configure Adobe LiveCycle ES2 Connector for IBM Content Manager screen, click Configure IBM Content Manager Connector. When complete, click Next.

43. (Optional - IBM FileNet only) On the Specify Client for IBM FileNet screen, select Configure Client for IBM FileNet Content Manager, and specify the following settings. Enter the details, click Verify, and when complete, click Next to continue.
   - Choose IBM FileNet Client Version: Select the client version that you want to use with the EMC Documentum Content Server.
   - IBM FileNet Client Installation Directory Path: Click Browse to select the directory path.
44. **(Optional - IBM FileNet only)** On the Specify IBM FileNet Content Server Settings screen, enter the required details, and click **Next**. Press F1 for more information.

45. **(Optional - IBM FileNet only)** On the Specify Client for IBM FileNet Process Engine screen, enter the required details, and click **Verify**. When complete, click **Next**. Press F1 for more information.

46. **(Optional - IBM FileNet only)** On the Specify IBM FileNet Process Engine Server Settings screen, enter the required details and click **Next**. Press F1 for more information.

47. **(Optional - IBM FileNet only)** On the Specify Adobe LiveCycle ES2 Connector for IBM FileNet screen, click **Configure FileNet Connector**. When complete, click **Next**. Press F1 for more information.

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

   **Note:** You can skip this step if you want to configure the SharePoint Connector later using LiveCycle Administration Console.
   
   - **User Name and Password:** Enter the user account details that will be used to connect to the SharePoint server.
   - **Host Name:** Enter the host name of the SharePoint server in the format `<hostname>:<port>`. The port number must be of the web application on the SharePoint server.
   - **Domain Name:** Enter the domain in which the SharePoint server is present.

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

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

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

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

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

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

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

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

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

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

Click Configure and then click Next.

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

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

54. On the Summary page, review the tasks performed, and click Next.

55. The Next steps screen displays the URL and login information. Click Finish to exit LiveCycle Configuration Manager.

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

56. Restart each application server instance in your cluster

4.5 Uninstalling EAR files

Perform the following procedure if you need to undeploy LiveCycle ES2 modules.

➤ Uninstall the EAR files:

1. Start the Administration Server and the Managed Server.


4. Under Change Center, click Lock and Edit.

5. Select the LiveCycle application box and select the LiveCycle applications, such as adobe-livecycle-native-weblogic-[OS], adobe-livecycle-weblogic, adobe-workspace-client, or adobe-contentservices.

6. On the Deploy tab, click Stop.

7. Click Lock and Edit, select the application that has been stopped and then click Delete.
8. Repeat steps 5 to 7 for the other deployed LiveCycle ES2 modules.

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

10. Stop and start the Administration Server and the Managed Server.

11.

### 4.6 Next steps

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

- Verify the deployment. (See “Verifying the deployment” on page 31.)
- Access LiveCycle Administration Console. (See “Accessing LiveCycle Administration Console” on page 31.)
- Configure PDF Generator ES2 or PDF Generator 3D ES2. (See “Configuring LiveCycle PDF Generator ES2 or 3D ES2” on page 34.)
- Perform the final setup for Rights Management ES2. (See “Setting watched folder performance parameters” on page 43.)
- Configure LiveCycle ES2 modules to access LDAP. (See “Configuring LiveCycle ES2 to access LDAP” on page 44.)
- Perform watched folder performance-tuning for PDF Generator ES2. (See “Setting watched folder performance parameters” on page 43.)
- Enable FIPS mode. (See “Enabling FIPS mode” on page 45.)
- Enable HTML digital signatures. (See “Configuring HTML digital signature” on page 46.)
- Configuring Connector for EMC Documentum, Connector for IBM Content Manager, or Connector for IBM FileNet. (See “Configuring the Connector for EMC Documentum service” on page 46, “Configuring the Connector for IBM FileNet service” on page 50, or “Configuring the Connector for IBM Content Manager” on page 57.)
- Set environment variables for PDF Generator ES2. (See “Setting environment variables” on page 35.)
- Install and deploy LiveCycle Business Activity Monitoring ES2. See the Installing and Deploying LiveCycle ES2 guide for your application server.
- Uninstall LiveCycle ES2. (See “Uninstalling LiveCycle ES2” on page 61.)
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 ES2 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 LiveCycle ES2 for Deployment” on page 39.

At this point in the installation process, you have already installed LiveCycle ES2 files and run LiveCycle Configuration Manager to configure the LiveCycle ES2 deployable archives. Now you must perform the following tasks manually:

- Configure WebLogic Server settings. (See “Configuring WebLogic Server settings” on page 43.)
- Create JMX policies for database initialization (See “Creating JMX policies for database initialization” on page 47.)
- Configure JDBC connectivity. (See “Configure JDBC connectivity” on page 48.)

5.1 Configuring WebLogic Server settings

Configure the following areas for your WebLogic Server cluster:

- WebLogic Server time-out settings. (See “Configuring the time-out settings” on page 43.)
- WebLogic Server server start arguments. (See “Configuring server start arguments” on page 44.)
- The class path of each managed WebLogic Server (See “Configuring the class path of the managed servers” on page 46.)

5.2.1 Configuring the time-out settings

Depending on your deployment, LiveCycle ES2 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 “Creating a WebLogic domain” on page 14.
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.

### 5.3.2 Configuring server start arguments

You must configure the server start arguments on each WebLogic Server instance of the LiveCycle ES2 cluster to add LiveCycle ES2 options.

Before you start this procedure, you must know if your cluster uses a 32-bit or 6-bit JVM. See *Preparing to Install LiveCycle ES2 (Server Cluster)* to determine the JVM that is required for your cluster configuration.

Before you start this procedure, determine how your LiveCycle ES2 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:

- Use UDP 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)” on page 26).

**Tip:** 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 ES2 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:
   - (64-bit JVM only) Add `-XX:MaxPermSize=512m -Xms256m -Xmx1792m
   - (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`
   - (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.

**Tip:** 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. In the **Arguments** box, add the following caching arguments depending on the configured cluster cache mechanism (UDP or TCP):

- (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 ES2 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 ES2 cluster, as in this example:

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

- (Caching using UDP discovery) Setting multicast address argument is optional. Default multicast addresses for IPv4 and IPv6 are as following:
  - IPv6 - FF38::1234
  - IPv4 - 239.192.81.1

  If you have restriction (like firewall, restricted network access) 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.

**Note:** The multicast address must be unique to the Document Services 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 Document Services cluster. For example

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

- (Caching using TCP discovery) 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>]
```
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 running the locator, and 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 ES2 cluster, as in this example:
-Dadobe.cache.cluster-locators=10.20.30.5[22345],10.20.30.6[22345]
-Dadobe.cache.cluster-locators=node1@
2001:1890:110b:7131:7996:3596:2921:364e [22345],node2@

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 Document 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

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

-DentityExpansionLimit=10000

8. Click Save and then click Activate Changes.

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

5.4.3 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 ES2.

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 6 for all servers in the cluster.
5.5 Creating JMX policies for database initialization

*New for 9.0.0.2*

(WebLogic 11g R1 only) If you're installing LiveCycle ES2 on WebLogic 11g (version 10.3.3), you must create JMX policies to ensure that the database for core LiveCycle ES2 components initializes correctly.

Complete the following procedures.

5.5.1 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 Server Administration Console documentation.

Follow these steps:

1. In the WebLogic Server 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.

5.5.2 Creating JMX policies

1. In the WebLogic Server 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.
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.
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.

### 5.6 Configure JDBC connectivity

All members in the cluster share the JDBC data sources for the LiveCycle ES2 database. Perform the following tasks to create and configure the shared JDBC data source:

- Configure connectivity to the LiveCycle ES2 database. (See "Creating and configuring the LiveCycle ES2 data source" on page 48.)
- (LiveCycle Rights Management ES2 only) Configure connectivity to the database used for LiveCycle Rights Management ES2. (See "Creating and configuring a Rights Management ES2 data source" on page 50.)

### 5.7.1 Creating and configuring the LiveCycle ES2 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. (See "Creating the LiveCycle ES2 data source" on page 48.)
- Assign the data source to the cluster. (See "Assigning the data source to the cluster" on page 51.)
- Configure the maximum pool capacity of the data source. (See "Configuring the maximum pool capacity of the data source" on page 51.)

### 5.8.2.1 Creating the LiveCycle ES2 data source

Within the WebLogic Server cluster, first create a JDBC data source that will link to the LiveCycle ES2 database.

➤ **To create the LiveCycle ES2 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.
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 Name** 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 **Confirm Password** 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**.

### 5.9.3.2 Assigning the data source to the cluster

You must assign the data source to the cluster.

➤ **To assign the LiveCycle ES2 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**.

### 5.10.4.3 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 then click **Activate Changes**.

### 5.11.5 Creating and configuring a Rights Management ES2 data source

If your LiveCycle ES2 deployment uses Rights Management ES2, create and configure a separate data source in your cluster for Rights Management ES2. Perform the same tasks that you did for the LiveCycle ES2 data source, but use the settings specified below:

- Create a data source. ([See “Creating the data source” on page 50.](#))
- Assign the data source to the cluster. ([See “Assigning the data source to the cluster” on page 51.](#))
- Configure the maximum pool capacity of the data source. ([See “Configuring the maximum pool capacity of the data source” on page 51.](#))

### 5.12.6.1 Creating the data source

Within the WebLogic Server cluster, first create a JDBC data source that will link to the Rights Management ES2 database.

➢ **To create a Rights Management ES2 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 Name** 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 **Confirm Password** 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**.

### 5.13.7.2 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**.

### 5.14.8.3 Configuring the maximum pool capacity of the data source

You must configure a maximum pool capacity for the Rights Management ES2 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**: 1
   - **Maximum Capacity**: 20
   - **Capacity Increment**: 5
   - **Statement Cache Size**: 100

6. Click **Save** and then click **Activate Changes**.
After you configure your WebLogic Server cluster, perform these tasks:

- Configure the LiveCycle ES2 EAR files by using LiveCycle Configuration Manager. (See “Configuring LiveCycle ES2 for Deployment” on page 39.)

- Choose one of these ways to deploy the LiveCycle ES2 EAR files to your WebLogic Server cluster:
  - **Automatically**: Use LiveCycle Configuration Manager. (See “Configuring LiveCycle ES2 for Deployment” on page 39.)
  - **Manually**: See “Manually Configuring a WebLogic Server Cluster” on page 43.
Manually Deploying to WebLogic Server Cluster

This chapter describes how to manually deploy LiveCycle ES2 modules to a WebLogic Server cluster. This chapter applies only if you chose not to deploy LiveCycle ES2 to your WebLogic Server cluster automatically. For information about how to automatically deploy LiveCycle ES2 to your application server, see “Configuring LiveCycle ES2 for Deployment” on page 39.

At this point in the installation process, you have already installed LiveCycle ES2 files, run LiveCycle Configuration Manager to configure the LiveCycle ES2 deployable archives, and manually configured your WebLogic Server cluster. Now, you manually deploy the LiveCycle ES2 deployable archives.

This chapter includes the following topics:

- “About deploying LiveCycle ES2 modules” on page 123
- “Deploying to WebLogic Server” on page 124

About deploying LiveCycle ES2 modules

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

- Installed the required software and files, and know the location of the directories you will be working with. If you did not complete this task, see Preparing to Install LiveCycle ES2 (Server Cluster).

- Run LiveCycle Configuration Manager to configure and assemble LiveCycle ES2 modules according to your system and application server requirements. To add a module to your deployment, you can run LiveCycle Configuration Manager to make the changes and then redeploy the updated EAR file.

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

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

WebLogic Server directory name

This chapter refers to the WebLogic Server home directory as [appserver root]. The home directory is the same as the one specified for the WL_INSTALL_ROOT environment variable. Similarly, [LiveCycleES2 root] refers to the location where LiveCycle ES2 components are installed. (See “Conventions used in this document” on page 7.)

Summary of deployable components

During the deployment process, deploy the following EAR files:

- adobe-livecycle-native-weblogic-(OS).ear
- (Process Management ES2 only) adobe-livecycle-weblogic.ear
- adobe-workspace-client.ear
- adobe-contentservices.ear (LiveCycle Content Services ES2 only)
After LiveCycle ES2 is configured with LiveCycle Configuration Manager (required), these files are located in the [LiveCycleES2 root]/configurationManager/export directory.

**Prerequisites for deploying Content Services ES2**

If your LiveCycle ES2 installation uses Content Services ES2 and you haven’t configured your application server through LiveCycle Configuration Manager, you must perform additional manual configuration of the application server before deployment.

**Deploying to WebLogic Server**

Deploy LiveCycle ES2 components to WebLogic Server by deploying the component EAR files to the application server by using WebLogic Administration Console.

Before deploying to WebLogic Server, start the application server on your computer. 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 Administration Console, type `http://localhost: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 deployment 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 to 13 for each of the EAR files listed in “Summary of deployable components” on page 123.

15. When the deployment is complete, restart WebLogic. (See “Restarting WebLogic Server” on page 124.)
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.

➤ To stop WebLogic Managed Server:

1. In the WebLogic 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 Administration Console prompt, click Yes to confirm the command.

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.

➤ To stop WebLogic Administration Server:

1. From a command prompt, navigate to `WL_HOME\user_projects\domains\[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).

➤ To restart WebLogic Administration Server:

1. From a command prompt, navigate to `WL_HOME/user_projects/domains/[appserverdomain]`.
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).

➤ To restart WebLogic Managed Server:

1. When the WebLogic Administration Server has started, log in to the WebLogic Administration Console.
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**.

**Next steps**

You must run LiveCycle Configuration Manager to initialize the database, and deploy the components and LiveCycle ES2 archive files (LCAs). You can also choose to validate the component and archive file deployment. (See “Configuring and deploying LiveCycle ES2” on page 40.)
5 Post-Deployment Activities

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

- “Restart the application server” on page 31
- “Set the date, time, and time zone” on page 31
- “Verifying the deployment” on page 31
- “Installing LiveCycle ES2.5 Solution Accelerators” on page 32 (optional)
- “Configuring WebLogic Server server start arguments” on page 58
- “Accessing module web applications” on page 32
- “Accessing User Management” on page 34
- “Configuring LiveCycle PDF Generator ES2 or 3D ES2” on page 34
- “Setup for Content Services ES2” on page 64
- “Configuring LiveCycle ES2 to access LDAP” on page 44
- “Enabling FIPS mode” on page 45
- “Configuring HTML digital signature” on page 46
- “Configuring the Document Management service” on page 46
- “Configuring the Connector for EMC Documentum service” on page 46
- “Configuring the Connector for IBM FileNet service” on page 50
- “Configuring the Connector for IBM Content Manager” on page 57
- “Perform a system image backup” on page 61
- “Isloating JBoss Clusters” on page 81
- “Uninstalling LiveCycle ES2” on page 61

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

5.1 Restart the application server

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

5.2 Set the date, time, and time zone

Setting the date, time, and time zone on all servers connected to your LiveCycle ES2 environment will ensure that time-dependent modules, such as LiveCycle Digital Signatures ES2 and LiveCycle Reader Extensions ES2, function correctly. For example, if a signature appears to have been created in the future, it will not validate.
Servers that require synchronization are database servers, LDAP servers, HTTP servers and J2EE servers.

5.3 Verifying the deployment

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

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

5.3.1 Accessing LiveCycle Administration Console

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

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

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

For information about using LiveCycle Administration Console, see LiveCycle ES2 Administration Help.

➤ To access LiveCycle Administration Console:

1. Type the following URL in a web browser:
   
   `http://[host name]:[port]/adminui`

   The default port number for 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. In the User Name box, type administrator and, in the Password box, type 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.

5.3.2 Change default password

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

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

You can view the log files to verify that the LiveCycle ES2 cluster functions properly. 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.

To verify the LiveCycle ES2 cluster:

1. Ensure that all application server instances of the cluster are started.
2. View the Gemfire.log file, located in the directory `[system temp]/adobewl_<domain name>_<server name>/Caching`. 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.

5.4 Installing LiveCycle ES2.5 Solution Accelerators

*New for 9.5*

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

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

5.5 Configuring WebLogic Server server start arguments

If you have installed LiveCycle Output ES2 or LiveCycle Forms ES2, you must configure the PoolMax values in the server start arguments on each WebLogic Server instance of the cluster, to ensure that LiveCycle ES2 will start properly.

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 your server.
2. Click the Configuration tab and then click Server Start.
3. Under Change Center, click Lock & Edit.
4. In the Arguments box, add the following text:
-Dcom.adobe.convertpdf.bmc.POOL_MAX=<value>
-Dcom.adobe.xmlform.bmc.POOL_MAX=<value>

**Note:** Copy the above text block to a text editor, ensure that all line breaks are removed, and replace all occurrences of `<value>` with an appropriate value for PoolMax.

The default value for PoolMax is 4. Set a value based on the hardware configuration and the expected usage in your environment. Generally, the upper limit should be set to twice the number of CPUs on the server. It is recommended that the lower limit of PoolMax must not be less than the number of CPUs available, and the upper limit must be determined by the load pattern on your server.

5. Click **Save**.

6. Repeat steps 2 to 5 for each server in your cluster.

### 5.6 Accessing module web applications

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

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

After accessing the web applications by using the default administrator permissions to ensure that they are accessible, you can create additional users and roles so that others can log in and use the applications. (See **LiveCycle ES2 Administration Help**.)

➤ **To access the Reader Extensions ES2 web application:**

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

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

   http://localhost:[port]/ReaderExtensions

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

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

   **User name:** administrator
   **Password:** password

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

1. Open a web browser and enter this URL if you are using a local deployment:
   
   http://localhost: [port]/workspace

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

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

To access the Content Services ES2 web application:

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

1. Open a web browser and enter this URL if you are using a local deployment:
   
   http://localhost: [port]/contentspace

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

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

5.7 Accessing Rights Management ES2

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

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

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

1. Open a web browser and enter this URL:
   
   http://[server]: [port]/edc/Login.do
   where [port] is the port assigned to the WebLogic Managed Server.

To access the Rights Management ES2 administration web application:

1. Open a web browser and enter this URL:
   
   http://[server]: [port]/adminui
   where [port] is the port assigned to the Managed WebLogic Server.

2. Click Services > LiveCycle Rights Management ES2. For information about setting up users and roles for Rights Management ES2, see LiveCycle ES2 Administration Help.
To assign the LiveCycle Rights Management End User role:

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

5.8 Accessing User Management

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

To access User Management:

1. Log in to LiveCycle Administration Console.
2. On the home page, click Settings > User Management.

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

5.9 Configuring LiveCycle PDF Generator ES2 or 3D ES2

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

- “Setting environment variables” on page 35
- “Setting the Adobe PDF Printer as the default printer” on page 36
- “Configuring Acrobat Professional” on page 36
- “Configuring user accounts for multi-threaded file conversions” on page 37
- “Installing East Asian characters in Windows Server 2003” on page 38
- “Adding fonts to PDF Generator ES2 or PDF Generator 3D ES2” on page 39
- “Installing the Network Printer Client” on page 42
- “Setting watched folder performance parameters” on page 43
### 5.9.1 Setting environment variables

If you installed the PDF Generator ES2 or PDF Generator 3D ES2 module and configured it to convert files to PDF, for some file formats, you must manually set an environment variable that contains the absolute path of the executable that is used to start the corresponding application. The table below lists the native applications that PDF Generator ES2 or PDF Generator 3D ES2 requires you to set up environment variables for. For a cluster configuration, ensure that the required applications are installed on all nodes in the cluster.

<table>
<thead>
<tr>
<th>Application</th>
<th>Environment variable</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrobat</td>
<td>Acrobat_PATH</td>
<td>C:\Program Files\Adobe\Acrobat 9.0\Acrobat\Acrobat.exe</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The environment variable Acrobat_PATH is case-sensitive.</td>
<td></td>
</tr>
<tr>
<td>Adobe FrameMaker®</td>
<td>FrameMaker_PATH</td>
<td>C:\Program Files\Adobe\FrameMaker 7.1\FrameMaker.exe</td>
</tr>
<tr>
<td>Notepad</td>
<td>Notepad_PATH</td>
<td>C:\WINDOWS\Notepad.exe</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> You can leave the Notepad_PATH variable blank.</td>
<td></td>
</tr>
<tr>
<td>OpenOffice</td>
<td>OpenOffice_PATH</td>
<td>C:\Program Files\OpenOffice.org 3</td>
</tr>
<tr>
<td>Adobe PageMaker®</td>
<td>PageMaker_PATH</td>
<td>C:\Program Files\Adobe\PageMaker 7.0\PageMaker.exe</td>
</tr>
<tr>
<td>WordPerfect</td>
<td>WordPerfect_PATH</td>
<td>C:\Program Files\WordPerfect Office 12\Programs\wpwin12.exe</td>
</tr>
</tbody>
</table>

**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.

▶ To create a new Windows environment variable:

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

   ```
   D:\Program Files\Adobe\Adobe Photoshop CS4\Photoshop.exe
   ```
To set the PATH variables on Linux or UNIX (OpenOffice only):

- Type the following command:
  ```
  export OpenOffice_PATH=/opt/openoffice.org3
  ```

5.9.2 Setting the Adobe PDF Printer as the default printer

You must set the Adobe PDF Printer to be the default printer on the server. If the Adobe PDF Printer is not set as the default, PDF Generator ES2 cannot convert files successfully.

For clusters, you must set Adobe PDF Printer as the default printer on all nodes.

To set the default printer:

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

5.9.3 Configuring Acrobat Professional

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

To configure Acrobat for use with PDF Generator:

1. If an earlier version of Acrobat is installed, uninstall it by using Add or Remove Programs in the Windows Control Panel.
2. Do one of the following:
   - If you are using the media, insert the Acrobat CD.
   - If you are using the ESD downloads, download Acrobat from your ESD location.
3. Install Acrobat by running the AutoPlay.exe file.
4. Navigate to the additional\scripts folder on the LiveCycle ES2 installation media.
5. Run the following batch file on the cluster node where LiveCycle ES2 is installed:
   ```
   Acrobat_for_PDFG_Configuration.bat \[LiveCycleES2 root\]/pdfg_config
   ```
6. On all cluster nodes on which you do not plan to run LiveCycle 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 \[LiveCycle ES2 root\]/plugins/x86_win32 directory on the node where LiveCycle ES2 is installed to the \[Acrobat root\]/plug_ins directory on the node being currently configured.
   - Copy `PDFG_PDFA-1(sRGB).kfp`, `PDFG_PDFA-1a(sRGB).kfp`, and `PDFG_PDFA-1b(sRGB).kfp` files from the \[LiveCycle ES2 root\]/plugins/x86_win32 directory on
the node where LiveCycle ES2 is installed to the [Acrobat root]/plug-ins/Preflight directory on the node being currently configured.

7. If you are also installing PDF Generator 3D ES2, follow these additional steps on nodes where you do not plan to run LiveCycle Configuration Manager:
   - Set the value of the environment variable A3DREVIEWER_MULTI to 1.
   - Copy PDFG3dAddin.dll from [LiveCycle ES2 root]/plugins/x86_win32 on the node where LiveCycle ES2 is installed to any directory on the node being currently configured.
   - Change to the directory to which you just copied PDFG3dAddin.dll.
   - Register PDFG3dAddin.dll using the following command:
     ```
     regsvr32 PDFG3dAddin.dll
     ```
   
   **Note:** You do not need to follow steps 6 and 7 on a node where LiveCycle ES2 is installed. Simply run the batch file specified in step 5.

8. Open Acrobat and select Help > Check for updates > Preferences.


➤ To validate the Acrobat installation:

   1. Navigate to a PDF file on your system and double-click it to open it in Acrobat. If the PDF file opens successfully, Acrobat is installed correctly.

   2. If the PDF file does not open correctly, uninstall Acrobat and reinstall it.

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

     Set the Acrobat_PATH environment variable to point to Acrobat.exe (For example, C:\Program Files\Adobe\Acrobat 9.0\Acrobat\Acrobat.exe).

➤ To configure native application support:

   1. Install and validate Acrobat as described in the previous procedure.

   2. Set Adobe PDF printer as the default printer.

   3. (PDF Generator 3D ES2) Register the DLL file located at [LiveCycleES2 root]/plugins/x86_win32\PDFG3dAddin.dll.

5.9.4 Configuring user accounts for multi-threaded file conversions

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

   **Note:** Only Microsoft Word 2007 and Microsoft PowerPoint 2007 are supported with multi-threaded file conversions. Microsoft Excel 2003 or 2007 versions are not supported.
If you need to enable multi-threaded file conversion, you must first perform the tasks outlined in the “Enabling multi-threaded file conversions” section of the Preparing to Install LiveCycle ES2 (Single Server) guide.

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

➤ Add a user account:

1. In LiveCycle Administration Console, click Services > LiveCycle PDF Generator ES2 > User Accounts.

2. Click Add and enter the user name and password of a user who has administrative privileges on the LiveCycle ES2 server. If you are configuring users for OpenOffice, dismiss the initial OpenOffice activation dialogs.

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

3. Restart the LiveCycle ES2 server.

➤ Additional configuration required for OpenOffice on Linux or Solaris

1. Add user accounts as described above.

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

   lcadm myhost=(user1) NOPASSWD: ALL
   lcadm myhost=(user2) NOPASSWD: ALL

   This configuration enables lcadm to run any command on host ‘myhost’ as ‘user1’ or ‘user2’ without prompting for password.

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

   xhost +local:user1@

   For more details, refer to xhost command documentation.

4. Restart the server.

5.9.5 Installing East Asian characters in Windows Server 2003

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

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

➤ To install East Asian characters in Windows Server 2003:

1. Select Start > Control Panel and open Regional and Language Options.
2. Click the **Languages** tab and select **Install Files for East Asian Languages**.

3. Click the **Advanced** tab and select all the options under Code Page Conversion Tables.

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

### 5.9.6 Adding fonts to PDF Generator ES2 or PDF Generator 3D ES2

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

#### 5.9.6.1 Non-LiveCycle applications

The following list contains non-LiveCycle ES2 applications that PDF Generator ES2 or PDF Generator 3D ES2 can use for PDF generation on the server side:

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

**Multiplatform applications**
- OpenOffice Writer
- OpenOffice Calc
- OpenOffice Draw
- OpenOffice Impress

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

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

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

Therefore, if you plan to add any custom fonts to the LiveCycle ES2 fonts repository, ensure that the same fonts are available to the Windows-only applications also by copying these fonts to either C:\Windows\Fonts or to an equivalent folder.

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

5.9.6.3 Adding new fonts to OpenOffice Suite

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

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

- OpenOffice Fonts Troubleshooting Guide at http://www.openoffice.org/FAQs/fontguide.html. Some of the text in this guide is applicable only to OpenOffice 1.x and therefore may be obsolete for OpenOffice 3.x and above.

- Importing Fonts into OpenOffice 2.1 at http://openoffice.blogs.com/openoffice/2007/02/font_import_wiz.html. Even though this blog mentions OpenOffice 2.1, the instructions that are mentioned should be applicable to OpenOffice 2.2 and later.

5.9.6.4 Adding new fonts to other applications

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

5.9.7 Configuring HTML to PDF conversions

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

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

➤ To configure the HTML-to-PDF conversion:

1. Install and validate Acrobat as described in "Configuring Acrobat Professional" on page 36.

2. Locate the pdfgen.api file in the [LiveCycleES2 root]\plugins\x86_win32 directory and copy it to [Acrobat root]\Acrobat\plug_ins directory.

5.9.7.1 Enabling support for Unicode fonts in HTML to PDF conversions

**Caution:** The HTML-to-PDF conversion fails if a zipped input file contains HTML files with double-byte characters in filenames. To avoid this problem, do not use double-byte characters when naming HTML files.
1. Copy the Unicode font to any of the following directories as appropriate for your system:

- **Windows**
  ```
  [Windows root]\windows\fonts  
  [Windows root]\winnt\fonts  
  ```

- **UNIX**
  ```
  /usr/X/lib/X11/fonts/TrueType  
  /usr/openwin/lib/X11/fonts/TrueType  
  /usr/share/fonts/default/TrueType  
  /usr/X11R6/lib/X11/fonts/ttf  
  /usr/X11R6/lib/X11/fonts/truetype  
  /usr/X11R6/lib/X11/fonts/TrueType  
  /usr/X11R6/lib/X11/fonts/TTF  
  /Users/cfqauser/Library/Fonts  
  /Library/Fonts  
  /Users/ + System.getProperty(<user name>, root) + /Library/Fonts  
  System.getProperty(JAVA_HOME) + /lib/fonts  
  /usr/share/fonts (Solaris)
  ```

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

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

- Extract this archive, and locate the `cffont.properties` file and open it in an editor.
- In the comma-separated list of Java font names, add a map to your Unicode system font for each font type. In the example below, `kochi mincho` is the name of your Unicode system font.
  ```
  dialog=Arial, Helvetica, kochi mincho  
  dialog.bold=Arial Bold, Helvetica-Bold, kochi mincho ...
  ```
- Save and close the properties file, and then repack and redeploy the `adobe-generatepdf-dsc.jar` file.

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

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

To embed the font in the generated PDF files, set the `embedFonts` property in the `cffont.properties` file to `true` (the default is `false`).
5.9.8 Modifying Microsoft Visio 2007 default macro settings

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

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

5.9.9 Installing the Network Printer Client

PDF Generator ES2 includes an executable file to install the PDF Generator ES2 network printer on a client computer. After the installation is complete, a PDF Generator ES2 printer is added to the list of existing printers on the client computer. This printer can then be used to send documents for conversion to PDF.

Note: The PDF Generator ES2 Network Printer Client (wizard) is supported on 32-bit Windows platforms only.

If the PDFG Network Printer fails to install on Windows or if you want to install the printer on UNIX or Linux platforms, use the operating system’s native Add Printer utility and configure it as described in “To configure PDFG Network Printer on Windows using the native Add Printer wizard:” on page 42.

➤ To install the PDF Generator ES2 Network Printer Client:
   1. Ensure that you successfully installed PDF Generator ES2 on your server.
   2. From a Windows client computer, enter the following URL in your web browser, where [server] is the name of the server where you installed PDF Generator ES2 and [port] is the application server port used:

   http://[server]:[port]/pdgf-ipp/install

   3. On the Configure Internet Port screen, select Use the specified user account and provide the credentials of a LiveCycle user who has the PDFG Administrator/User role. This user must also have an email address that can be used to receive the converted files. To have this security setting apply to all users on the client computer, select Use the same security options for all users, and then click OK. Upon successful installation, a dialog box appears, indicating that “The Printer Adobe LiveCycle PDF Generator ES2 has been successfully installed:”
   4. Click OK. You will now have a printer named Adobe LiveCycle PDF Generator ES2 in your list of available printers.

➤ To configure PDFG Network Printer on Windows using the native Add Printer wizard:
   1. Click Start > Printers and Faxes and double-click Add Printer.
   2. Click Next, select A network printer, or a printer attached to another computer, and then click Next.
3. Select **Connect to a printer on the internet or on a home or office network** and type the following URL for the PDFG printer, where `{server}` is the server name and `{port}` is the port number where the server is running:

   http://{server}:{port}/pdfg-ipp/printer

4. On the Configure Internet Port screen, select **Use the specified user account** and provide valid User credentials.

5. In the **Printer Driver Select** box, choose any standard PostScript-based printer driver (for example, HP Color LaserJet PS).

6. Complete the installation by choosing appropriate options (for example, setting this printer as default).

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

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

---

➤ **To install and configure the PDF Generator ES2 Network Printer Client using Proxy server port forwarding**

1. Configure port forwarding on the CC Proxy server on a particular port to the LiveCycle ES2 server, and disable the authentication at proxy server level (since LiveCycle ES2 uses its own authentication). If a client connects to this Proxy server on the forwarded port, then all the requests will be forwarded to the LiveCycle ES2 server.

2. Install PDFG Network Printer using the following URL:

   http://{proxy server}:{forwarded port}/pdfg-ipp/install.

3. Provide the necessary credentials for authentication of the PDFG Network Printer.

4. The PDFG Network Printer will be installed on the client machine which you can use for PDF conversion using the firewall protected LiveCycle ES2 server.

---

### 5.9.10 Setting watched folder performance parameters

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

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

1. Log in to LiveCycle Administration Console and click **Services > Applications and Services > Service Management.**

2. In the list of services, navigate to and click **PDFGConfigService**, and then set the following values:

   - **PDFG Cleanup Scan Seconds**: 1800
   - **Job Expiration Seconds**: 6000
   - **Server Conversion Timeout**: Change the default of 270 to a higher value, such as 450.

3. Click **Save** and restart the server.
5.10 Final setup for LiveCycle Rights Management ES2

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

5.11 Setup for Content Services ES2

If your LiveCycle ES2 installation uses Content Services ES2 and you haven’t configured your application server through LiveCycle Configuration Manager, you must perform additional manual configuration of the application server before deployment. Complete the following procedure on your application server.

**Note:** You must configure and deploy LiveCycle ES2 before you perform this procedure (see “Configuring and deploying LiveCycle ES2” on page 40). This procedure configures directories that are created only when you deploy LiveCycle ES2.

To configure setup for Content Services ES2:

1. In the WebLogic Server Administration Console, under Domain Structure, click Environment > Servers and, in the right pane, click the name of your server.
2. Click the Configuration tab and then click Server Start.
3. Under Change Center, click Lock & Edit.
4. In the Arguments box, enter the following text:
   - `Dalfresco.tcp.initial_hosts=<host name>[<port value>],<host name>[<port value>]`
   - `Dalfresco.cluster.name=lc9_cluster`
   - `Dalfresco.tcp.start_port=<port value>`
   - `Dalfresco.tcp.port_range=3`
   - `Dfile.encoding=utf8`

   **Note:** Copy the above text block to a text editor and ensure that all line breaks are removed. Replace `<host name>` with the names of the computers in the cluster. Replace `<port value>` with the port number (any value between 7800 and 8000) for that computer.

   **Note:** For IPv6-based clusters, the `<host name>` should be mapped to an IPv6 address.

   **Caution:** You must include all WebLogic Servers in the cluster, except for the server being configured. Use commas to separate the names of the servers in the argument list after the `tcp.initial_hosts= <host name>[<port value>]`.

5. Click Save and click Activate Changes.
6. Repeat steps 1 to 5 for each server of the cluster.

**Note:** Vertical clustering is not supported for Content Services ES2.

5.12 Configuring LiveCycle ES2 to access LDAP

If you configured LDAP for LiveCycle 7.x products, those settings are migrated during the upgrade process, and you do not need to perform the steps in this section. If you did not previously configure LDAP, you can
use the following procedure as a guideline when configuring User Management to support authentication using LDAP.

➤ To configure User Management with LDAP (Enterprise Domain):
1. Open a web browser, navigate to http://[host]:[port]/adminui and log in. (See “Accessing LiveCycle Administration Console” on page 31.)
2. Click Settings > User Management > Domain Management, and then click New Enterprise Domain.
3. In the ID box, type a unique identifier for the domain and, in the Name box, type a descriptive name for the domain.
   
   **Note:** When using DB2 for your LiveCycle ES2 database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See “Adding enterprise domains” in LiveCycle ES2 Administration Help.)

4. Click Add Authentication and, in the Authentication Provider list, select LDAP.
5. Click OK.
6. Click Add Directory and, in the Profile Name box, type a name for your LDAP profile.
7. Click Next.
8. Specify values in the Server, Port, SSL, and Binding boxes, and in the Populate Page with box, select a directory settings option such as Default Sun ONE values. Also, specify values in the Name and Password box that would be used to connect to the LDAP database when anonymous access is not enabled. (See “Directory settings” in LiveCycle ES2 Administration Help.)
9. (Optional) Test your configuration:
   - Click Test. The screen displays a message indicating either a successful server test or any configuration errors that exist.

10. Click Next and configure the User Settings as required. (See “Directory settings” in LiveCycle ES2 Administration Help.)
11. (Optional) Test your configuration:
   - Click Test.
   - In the Search Filter box, verify the search filter or specify a new search filter, and then click Submit. The screen displays a list of entries that match the search criteria.
   - Click Close to return to the User Settings screen.

12. Click Next configure the Group Settings as required. (See “Directory settings” in LiveCycle ES2 Administration Help.)
13. (Optional) Test your configuration:
   - Click Test.
   - In the Search Filter box, verify the search filter or specify a new search filter, and then click Submit. The screen displays a list of entries that match the search criteria.
   - Click Close to return to the Group Settings screen.
14. Click **Finish** to exit the New Directory page and then click **OK** to exit.

➤ **To configure User Management (Local Domain):**

1. Open a web browser, navigate to http://[host]:[port]/adminui, and log in. (See “Accessing LiveCycle Administration Console” on page 31.)

2. Click **Settings > User Management > Domain Management**, and then click **New Local Domain**.

3. In the appropriate boxes, enter the domain ID and name. (See “Adding local domains” in LiveCycle ES2 Administration Help.)

4. (Optional) Disable account locking by deselecting the **Enable Account Locking** option.

5. Click **OK**.

### 5.13 Enabling FIPS mode

LiveCycle ES2 provides a FIPS mode to restrict data protection to Federal Information Processing Standard (FIPS) 140-2 approved algorithms using the RSA BSAFE Crypto-C 2.1 encryption module.

If you did not enable this option by using LiveCycle Configuration Manager during LiveCycle ES2 configuration or if you enable it but want to turn it off, you can change this setting through LiveCycle Administration Console.

Modifying FIPS mode requires you to restart the server.

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

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

➤ **To turn FIPS mode on or off:**

1. Log in to LiveCycle Administration Console.

2. Click **Settings > Core System Settings > Configurations**.

3. Select **Enable FIPS** to enable FIPS mode or deselect it to disable FIPS mode.

4. Click **OK** and restart the application server.

**Note:** LiveCycle ES2 software does not validate code to ensure FIPS compatibility. It provides a FIPS operation mode so that FIPS-approved algorithms are used for cryptographic services from the FIPS-approved libraries (RSA).

### 5.14 Configuring HTML digital signature

To use the HTML digital signature feature of Forms ES2, complete the following procedure.
To enable HTML digital signature:
1. Manually deploy the [LivecycleES2 root]/deploy/adobe-forms-ds.ear file to your application server.
2. Log in to LiveCycle Administration Console and click Services > LiveCycle Forms ES2.
3. Select HTML Digital Signature Enabled and then click Save.

5.15 Configuring the Document Management service

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

To modify the port:
1. Log in to LiveCycle Administration Console and click Services > Applications and Services > Service Management.
2. In the list, select DocumentManagementService.
3. On the Configuration tab, in the HTTP Port box, specify the port numbers you are using on each member of the cluster (as a comma-separated list, and then click Save. For example, specify the following:
   - WebLogic Cluster: 8001, 8002, 8003

5.16 Configuring the Connector for EMC Documentum service

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

If you installed the Connector for EMC Documentum service as part of your LiveCycle ES2 solution, configure the service to connect to the Documentum repository.

To configure Connector for EMC Documentum:
1. Locate the adobe-component-ext.properties file in the [appserverdomain] folder (if the file does not exist, create it).
2. Add a new system property that provides the following Documentum Foundation Classes JAR files:
   - dfc.jar
   - aspectjrt.jar
   - log4j.jar
   - jaxb-api.jar
   - (For Connector for EMC Documentum 6.5 only)
     - configservice-impl.jar,
     - configservice-api.jar

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

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

- **Connector for EMC Documentum 6.0 only:**
  
  ```
  com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
  C:/Program Files/Documentum/Shared/dfc.jar,
  C:/Program Files/Documentum/Shared/aspectjrt.jar,
  C:/Program Files/Documentum/Shared/log4j.jar
  ```

- **Connector for EMC Documentum 6.5 only:**
  
  ```
  com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
  C:/Program Files/Documentum/Shared/dfc.jar,
  C:/Program Files/Documentum/Shared/aspectjrt.jar,
  C:/Program Files/Documentum/Shared/log4j.jar,
  C:/Program Files/Documentum/Shared/jaxb-api.jar,
  C:/Program Files/Documentum/Shared/configservice-impl.jar,
  C:/Program Files/Documentum/Shared/configservice-api.jar
  ```

- **Connector for EMC Documentum 6.7 SP1 only:**
  
  ```
  com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
  C:/Program Files/Documentum/Shared/dfc.jar,
  C:/Program Files/Documentum/Shared/aspectjrt.jar,
  C:/Program Files/Documentum/Shared/log4j.jar,
  C:/Program Files/Documentum/Shared/jaxb-api.jar,
  C:/Program Files/Documentum/Shared/configservice-impl.jar,
  C:/Program Files/Documentum/Shared/configservice-api.jar
  ```

3. Repeat steps 3 and 4 on each WebLogic Server instance of the cluster.

4. Open a web browser and enter this URL:
   
   http://localhost:8001/adminui (local deployment using the default port)

5. Log in using the default user name and password:
   
   **User name:** administrator
   **Password:** password

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

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

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

8. If WebLogic 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://localhost:8001/adminui (local deployment using the default port)

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 the following services:
   - EMCDocumentumAuthProviderService
   - EMCDocumentumContentRepositoryConnector
   - EMCDocumentumRepositoryProvider

12. Click **Start**. If any of the services do not start correctly, check the settings entered in step 5.

13. Do one of the following tasks:
   - To use the Documentum Authentication service (EMCDocumentumAuthProviderService) to display content from a Documentum repository in the Resources view of Workbench ES2, continue with this procedure. Using the Documentum Authentication service overrides the default LiveCycle ES2 authentication and must be configured to log in to Workbench ES2 using Documentum credentials.
   - To use the LiveCycle ES2 repository, log in to Workbench ES2 by using the LiveCycle ES2 super administrator credentials (by default, Administrator and password).

You have now completed the required steps for this procedure. Use the credentials provided in step 5 for accessing the default repository in this case and use the default LiveCycle ES2 authentication service.

14. Restart the application server.

15. Log in to LiveCycle 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:** When using DB2 for your LiveCycle ES2 database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See “Adding enterprise domains” in LiveCycle ES2 Administration Help.)

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 LiveCycle ES2 roles and click **OK**.
   - Click **OK** a second time to confirm the role assignment.

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

24. Start Workbench ES2 and log in by using the credentials for the Documentum repository:

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

   **Password:** [password]

   After you log in, the Documentum repository appears in the Resources view within Workbench ES2. If you do not log in using the **username@repository_name**, Workbench ES2 attempts to log in to the default repository specified in step 5.

25. (Optional) To install the LiveCycle ES2 Samples for Connector for EMC Documentum, create a Documentum repository named **Samples**, and then install the samples in that repository.

   After you configure the Connector for EMC Documentum service, see **LiveCycle ES2 Administration Help** for information about configuring Workbench ES2 with your Documentum repository.

5.17 Creating the XDP MIME format in a Documentum repository

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

- Create a corresponding XDP format in each repository where users will access XDP files.
- Configure the Connector for EMC Documentum service to use a Documentum Administrator account when accessing the Documentum repository. In this case, the Connector for EMC Documentum service uses the XDP format whenever it is required.
To create the XDP format on Documentum Content Server using Documentum Administrator:
1. Log in to Documentum Administrator.
2. Click Formats and then select File > New > Format.
3. Type the following information in the corresponding fields:
   - Name: xdp
   - Default File Extension: xdp
   - Mime Type: application/xdp
4. Repeat steps 1 to 3 for all other Documentum repositories where users will store XDP files.

To configure the Connector for EMC Documentum service to use a Documentum Administrator:
1. Open a web browser and enter this URL:
   http://localhost:[port]/adminui (local deployment using the default port)
2. Log in using the default user name and password:
   - User name: administrator
   - Password: password
3. Click Services > LiveCycle ES2 Connector for EMC Documentum > Configuration Settings.
4. Under Documentum Principal Credentials Information, update the following information and then click Save:
   - User Name: [Documentum Administrator user name]
   - Password: [Documentum Administrator password]
5. Click Repository Credentials Settings, select a repository from the list or, if none exist, click Add.
6. Provide the appropriate information in the corresponding fields and then click Save:
   - Repository Name: [Repository Name]
   - Repository Credentials User Name: [Documentum Administrator user name]
   - Repository Credentials Password: [Documentum Administrator password]
7. Repeat steps 5 to 6 for all repositories where users will store XDP files.

5.18 Configuring the Connector for IBM FileNet service

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

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

Choose one of the following procedures to configure the Connector for IBM FileNet service using FileNet 4.x:
- "To configure the connector using FileNet 4.x or FileNet 5.0 and CEWS transport:" on page 78
To configure the connector using FileNet 4.x and EJB 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. In the Arguments box, enter the following text, and then click Save.
   
   -Dwasp.location= <configuration files location>

   For example, using a default FileNet Application Engine installation on a Windows operating system, add this Java option:
   
   -Dwasp.location=C:/Program Files/FileNet/AE/CE_API/wsi

6. Locate the adobe-component-ext.properties file in the [appserverdomain] folder (if the file does not exist, create it).
7. Add a new system property that provides the location of these FileNet Application Engine JAR files:
   
   - javaapi.jar
   - log4j-1.2.13.jar
   - soap.jar
   - wasp.jar
   - builtin_serialization.jar (FileNet 4.0 only)
   - wsdl_api.jar
   - jaxm.jar
   - jaxrpc.jar
   - saaj.jar
   - jetty.jar
   - runner.jar
   - p8cjares.jar
   - Jace.jar
   - (optional) pe.jar

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

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

   For example, using a default FileNet Application Engine installation on a Windows operating system, add the following system property on a new line with no line breaks and end the line with a carriage return:
Note: The following text contains formatting characters for line breaks. If you copy this text to a location outside this document, remove the formatting characters when you paste it to the new location.

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

```
com.adobe.livecycle.ConnectorforIBMFileNet.ext=
C:/Program Files/FileNet/AE/CE_API/lib2/javaapi.jar,
C:/Program Files/FileNet/AE/CE_API/lib2/log4j-1.2.13.jar,
C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/soap.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/wasp.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/builtin_serialization.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/wsd1_api.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/jaxm.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/jaxrpc.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/jaas.jar,
C:/Program Files/FileNet/AE/CE_API/wsi/lib/runner.jar,
C:/Program Files/FileNet/AE/CE_API/lib2/p8cjares.jar,
C:/Program Files/FileNet/AE/CE_API/lib/Jace.jar,
C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar
```

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

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

Note: For FileNet 5.0, add following .jar files

```
C:/Program Files/FileNet/AE/CE_API/lib/Jace.jar,
C:/Program Files/FileNet/AE/CE_API/lib2/javaapi.jar,
C:/Program Files/FileNet/AE/CE_API/lib2/log4j.jar,
C:/Program Files/FileNet/AE/Router/lib/mailapi.jar,
C:/Program Files/FileNet/AE/Workplace/WEB-INF/lib/pe.jar
```

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

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

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

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

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

Note: The filename is case-sensitive.
9. If a custom JAAS configuration file is being used, add the following lines in the custom JAAS configuration file:

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

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

10. (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

11. 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.

12. Paste the value to the new config.xml file, then save and close it.

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

14. Repeat steps 2 to 13 on each WebLogic Server instance of the cluster.

15. Open a web browser and enter this URL:

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

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

   User name: administrator
   Password: password

17. Click **Services** > **LiveCycle ES2 Connector for IBM FileNet**.
18. 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.

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

20. Select the check box next to each of these services and then click **Start**:
   - IBMFileNetAuthProviderService
   - IBMFileNetContentRepositoryConnector
   - IBMFileNetRepositoryProvider
   - IBMFileNetProcessEngineConnector (if configured)

If any of the services do not start correctly, verify the settings entered in step 14.

21. Do one of the following tasks:
   - To use the FileNet Authorization service (IBMFileNetAuthProviderService) to display content from a FileNet object store in the Resources view of Workbench ES2, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle ES2 authorization and must be configured to log in to Workbench ES2 by using FileNet credentials.
   - To use the LiveCycle ES2 repository, log in to Workbench ES2 by using the LiveCycle ES2 super administrator credentials (by default, **Administrator** and **password**). The credentials provided in step 14 use the default LiveCycle ES2 authorization service for accessing the default repository in this case.

22. Restart your application server.

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

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

**Note:** When using DB2 for your LiveCycle ES2 database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See “Adding enterprise domains” in [LiveCycle ES2 Administration Help](#)).

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

26. Add an LDAP authentication provider:
   - Click **Add Authentication**.
   - In the **Authentication Provider** list, select **LDAP** and then click **OK**.
27. 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.

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

29. 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.


31. Search for users that were synchronized from LDAP and perform these tasks:
   - Select one or more users and click Assign Role.
   - Select one or more LiveCycle ES2 roles and click OK.
   - Click OK a second time to confirm the role assignment.
   - Repeat this step for all users you want to assign roles to. For more information, click the Help link in the upper-right corner of the page.

32. Start Workbench ES2 and log in using the following credentials for the IBM FileNet repository:
   - User name: [username]@[repository_name]
   - Password: [password]

   The FileNet object store should now be visible in the Resources view within Workbench ES2. If you do not log in using the username@repository name, Workbench ES2 attempts to log in to the default repository specified in step 14.

33. (Optional) If you intend to install the LiveCycle ES2 Samples for Connector for IBM FileNet, create a FileNet object store named Samples and install the samples in that object store.

   After you configure your Connector for IBM FileNet service, it is recommended that you see LiveCycle ES2 Administration Help for information about configuring Workbench ES2 functions properly with your FileNet repository.

   To configure the connector using FileNet 4.x and EJB transport:

1. Locate the [appserverdomain]/config/config.xml file and make a backup copy of it.

2. Locate the adobe-component-ext.properties file in the [appserverdomain] folder (if the file does not exist, create it).

3. Add a new system property that provides the location of the following FileNet Application Engine JAR files:
- javaapi.jar
- log4j-1.2.13.jar
- p8cjares.jar
- Jace.jar
- (optional) pe.jar

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

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

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

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

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

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

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

5. Save the file you created as WcmApiConfig.properties in a separate folder, and add the location of the folder that contains the WcmApiConfig.properties file to the adobe-component-ext.properties file. For example, if you save the file as c:/pe_config/WcmApiConfig.properties, add the path c:/pe_config to the adobe-component-ext.properties file.

**Note:** The filename is case-sensitive.

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

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

**Tip:** You can determine whether a custom JAAS configuration file is used from the value of the -Djava.security.auth.login.config property in the application server start command.
7. 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.

8. Paste the value to the new config.xml file, then save and close it.

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

11. Repeat steps 2 to 10 on each WebLogic Server instance of the cluster.

12. Open a web browser and enter this URL:

    ```
    http://localhost:8001/adminui
    ```

    (local deployment using the default port)

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

    ```
    User name: administrator
    Password: password
    ```

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

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

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

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

16. Click **Save**.

17. Under FileNet DSC Configuration Information, in the **Port Number box**, enter the port number where Content Engine is running. The default port is 8001.

18. Click **Save** and then 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 settings entered in step 15.

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 ES2, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle ES2 authorization and must be configured to log in to Workbench ES2 by using FileNet credentials.
● To use the LiveCycle ES2 repository, log in to Workbench ES2 by using the LiveCycle ES2 super administrator credentials (by default, Administrator and password). The credentials provided in step 15 use the default LiveCycle ES2 authorization service for accessing the default repository in this case.


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

23. 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 ES2 database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See “Adding enterprise domains” in LiveCycle ES2 Administration Help.)

24. Add a custom authentication provider:
   ● Click Add Authentication and, in the Authentication Provider list, select Custom.
   ● Select IBMFileNetAuthProviderService and 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 information, click the 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 ES2 roles, and click **OK**.
   - Click **OK** a second time to confirm the role assignment.

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

31. Start Workbench ES2 and log in using the following credentials:

   - **User name:** [username]@[repository_name]
   - **Password:** [password]

   The FileNet object store should now be visible in the Resources view within Workbench ES2. If you do not log in by using the **username@repository name**, Workbench ES2 attempts to log in to the default repository specified in step 15.

32. (Optional) If you intend to install the LiveCycle ES2 Samples for Connector for IBM FileNet, you must create a FileNet object store named **Samples** and install the samples in that object store.

After you configure your Connector for IBM FileNet service, it is recommended that you see **LiveCycle ES2 Administration Help** for information about configuring Workbench ES2 functions properly with your FileNet repository.

### 5.19 Configuring SharePoint client access

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

\[LiveCycleES2 root\]\LiveCycle_ES_SDK\misc\ContentServices folder.

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

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

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

1. Obtain the share.war from the Alfresco installation. See your Alfresco documentation for more details.

2. Copy the file share.war to a directory in your file system.

3. Use a file archive utility such as WinRar to open the share.war file.
4. From the file archive utility window, extract the file WEB-INF/classes/alfresco/webscript-framework-config.xml and open it using a text editor.


6. Save and close the file.

5.19.2 Deploy the share.war file

1. Open the archive file adobe-contentservices.ear using an archive utility such as WinRar from the location appropriate to your application server.
   - (WebLogic): /appserver domain/servers/<server-name>/stage/adobe-contentservices/

2. Add the updated share.war file to the adobe-contentservices.ear archive that is opened in the archive utility window.

3. From the file archive utility window, extract the file application.xml to a folder in the local file system, and open it using a text editor. This file is in the adobe-contentservices.ear/META-INF directory.

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

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

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

6. Save and close the archive.

7. Deploy the updated EAR file.

   **Note:** You must deploy the updated EAR file manually using the administration console of your application server.

5.20 Enabling CIFS in IPv6 mode

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

1. Navigate to [LiveCycleES2 root]\configurationManager\export directory.

2. Use a file archive utility such as WinRar to open the contentservices.war file.

3. From the file archive utility window, extract the file contentservices.war\WEB-INF\classes\alfresco\file-services-custom.xml and open it using a text editor.

4. Locate the following line and change it by adding ipv6="enabled":

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

   to

   ```
   <tcpipSMB platforms="linux,solaris,macosx,windows,AIX" ipv6="enabled"/>
   ```

5. Save and close the file.

6. From the file archive utility window, extract the file contentservices.war\WEB-INF\classes\alfresco\extension\file-servers-properties into a folder in the local file system, and open it using a text editor.

7. Locate the line cifs.ipv6=disabled and replace it with cifs.ipv6=enabled.

8. Save and close the file.

9. Copy the updated file-servers-custom.xml file into the archive under contentservices.war\WEB-INF\classes\alfresco\extension\.

10. Save the contentservices.war file.

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

5.21 Configuring the Connector for IBM Content Manager

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

   If you installed the Connector for IBM Content Manager service as part of your LiveCycle ES2 solution, complete the following procedure to configure the service to connect to the IBM Content Manager data store.

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

   1. Locate the adobe-component-ext.properties file in the [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, Config folder that contains the IBM II4C property files, and a ZIP file from DB2 Universal Database Client installation:

       - cmb81.jar
       - cmbcm81.jar
       - cmbicm81.jar
● cmblog4j81.jar
● cmbsdk81.jar
● cmbutil81.jar
● cmbutilicm81.jar
● cmbview81.jar
● cmbwas81.jar
● cmbwcm81.jar
● cmgmt

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

● common.jar
● db2jcc.jar
● db2jcc_license_cisuz.jar
● db2jcc_license_cu.jar
● ecore.jar
● ibmjgssprovider.jar
● ibmjsseprovider2.jar
● ibmpkcs.jar
● icmr81.jar
● jcache.jar
● log4j-1.2.8.jar
● xerces.jar
● xml.jar
● xsd.jar

The new system property look like this structure:

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

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

    C:/Program Files/IBM/db2cmv8/cmgmt,
    C:/Program Files/IBM/db2cmv8/java/jre/lib/ibmjgssprovider2.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,
3. If the application server is not currently running, start the server; otherwise, stop and then restart the server.

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

You have now completed the required steps for this procedure.

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

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

1. Open a web browser and enter this URL:
   http://[host]:[port]/adminui

2. Log in using the default user name and password:
   
   **User name:** administrator
   
   **Password:** password

3. Click Services > LiveCycle ES2 Connector for IBM Content Manager > Configuration Settings.

4. Type all of the required repository information and click Save. For more information about the IBM Content Manager repository information, click the Help link in the upper-right corner of the page.

5. Do one of the these tasks:

   ● To use the IBM Content Manager Authorization service (IBMCMProviderService) to use content from an IBM Content Manager data store, in the Processes view of Workbench ES2, continue with this procedure. Using the IBM Content Manager Authorization service overrides the default LiveCycle ES2 authorization and must be configured to log in to Workbench ES2 by using IBM Content Manager credentials.

   ● To use the System Credentials provided in step 4 to use content from an IBM Content Manager data store, in the Processes view of Workbench ES2, log in to Workbench ES2 by using the LiveCycle ES2 super administrator credentials (by default, Administrator and password). You have now completed the required steps for this procedure. The System Credentials that are provided in step 4 use the default LiveCycle ES2 authorization service for accessing the default repository in this case.

6. Log in to the LiveCycle Administration Console, and click Settings > User Management > Domain Management.
7. Click **New Enterprise Domain** and type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

   **Note:** When using DB2 for your LiveCycle ES2 database, the maximum permitted length of the ID is 100 single-byte (ASCII) characters or 50 double-byte characters or 25 four-byte characters. (See “Adding enterprise domains” in *LiveCycle ES2 Administration Help*.)

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

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

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

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

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

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

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

15. Search for users that were synchronized from LDAP and do these tasks:
    - Select one or more users and click **Assign Role**.
    - Select one or more LiveCycle ES2 roles and click **OK**.
    - Click **OK** a second time to confirm the role assignment.
    - Repeat this step for all users that you want to assign roles to. For more information, click the **Help** link in the upper-right corner of the page.
16. Start Workbench ES2 and log in using the following credentials for IBM Content Manager data store:

   **Username:** [username]@[repository_name]
   **Password:** [password]

   The IBM Content Manager data store can now be used in the Processes view within Workbench ES2 when the login mode for IBMCMConnectorService orchestrable components is selected as **Use Credentials from process context**.

   After you configure your Connector for IBM Content Manager service, it is recommended that you see **LiveCycle ES2 Administration Help**.

### 5.22 Perform a system image backup

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

### 5.23 Isolating JBoss Clusters

There are a lot of JBoss services that create multiple JGroup channels services. These channels should only communicate with specific channels.

To isolate JGroups clusters from other clusters on the network, ensure that:

- The channels in the various clusters use different group names. Use `./run.sh -g QAPartition -b <ipaddress> -c all` to create unique groups.
- The channels in the various clusters use different multicast addresses. Use `./run.sh -u <UDP group Ip address> -g QAPartition -b <ipaddress> -c all` to control the multicast address.
- The channels in each cluster use different multicast ports. Use `./run.sh -u <UDP group Ip address> -g QAPartition -b <ipaddress> -c all \-Djboss.jgroups.udp.mcast_port=12345 -Djboss.messaging.datachanneludpport=23456` to control the multicast sockets.

See, Isolating JGroups Channels in jbossclustering guide at [http://docs.jboss.org/](http://docs.jboss.org/) for detailed information to isolate JBoss Clusters.

### 5.24 Uninstalling LiveCycle ES2

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

**Note:** If you installed LiveCycle ES2 using the command line interface (CLI), you must uninstall LiveCycle ES2 using the CLI itself. See “Appendix - Install Command Line Interface” on page 88.
Caution: By running the uninstaller, all the contents within the product installation directory are subject to removal without further warning. Before you proceed, back up any data you do not want to lose.

➤ To remove the files from your computer:

1. Invoke the uninstall program:
   - (Windows) Do one of the following:
     - Use Add or Remove Programs in the Windows Control Panel and remove Adobe LiveCycle ES2.
     - Manually uninstall:
       - Navigate to the directory that contains the uninstaller: \LiveCycleES2 root\Uninstall_Adobe LiveCycle ES2
       - Double-click the Uninstall Adobe LiveCycle ES2.exe file.
   - (UNIX) Do the following:
     - From a terminal, navigate to the directory that contains the uninstall script:
     - Type ./Uninstall Adobe LiveCycle ES2 (you may need to make this binary an executable file by typing a command, such as chmod 777).

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

2. Follow the on-screen instructions in the uninstall program, and then click Finish.

3. If you are planning to reinstall LiveCycle ES2, remove all residual directories and files existing under the \LiveCycleES2 root\ directory.
Configuring 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 ES2 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 Using Clusters.

8.1 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 “Installing the Apache HTTP server plug-in” on page 86.)
- Configure the Apache HTTP server plug-in. (See “Configuring the Apache HTTP server plug-in” on page 86.)
- Test the Apache HTTP server plug-in. (See “Testing the Apache HTTP server plug-in” on page 87.)

8.2.1 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 10gR3 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.

8.3.2 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.


   **Note:** If your cluster implements SSL, see Using Web Server Plug-ins with WebLogic Server for information about configuring the Apache plug-in using SSL.

8.4.3 Testing the Apache HTTP server plug-in

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

9.1 Configuring pool size for Output ES2 and Forms ES2

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

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

➤ To modify the existing PoolMax value:

1. Using a text editor, edit the 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

9.2 LiveCycle PDF Generator ES2

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

9.2.1 Configuring EJB Pool Size

Four different stateless session beans exist for enforcing independent pool sizes for the following types of input files:
- Adobe PostScript® and Encapsulated PostScript (EPS) files
- Image files, such as BMP, TIFF, PNG, and JPEG files
- OpenOffice files
All other file types (except HTML files), such as Microsoft Office, Photoshop®, PageMaker®, and FrameMaker® files

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

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

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

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

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

- adobe-livecycle-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

➤ To configure the pool size for PS2PDF and Image2PDF:

Refer to Distiller service settings and Generate PDF service settings under “Managing services” in the LiveCycle ES2 Administration Help.

9.3 Enabling CIFS on Windows

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

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

On Windows machines, you need to do the following:

- “Enable NetBIOS over TCP/IP” on page 108
- “Add additional IP addresses” on page 108
- “Disable SMB over NetBIOS registry (Windows 2003 only)” on page 108
- “Disable File and Printer Sharing (Windows 2008 only)” on page 108
9.3.1 Enable NetBIOS over TCP/IP

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

1. In the **Local Area Connection Properties** dialog box, on the **General** tab, select **Internet Protocol**, and then click **Properties**.

2. In the **General** tab of the **Internet Protocol (TCP/IP) Properties** dialog box, ensure that the server has a static IP address. Click **Advanced**.

3. In the **Advanced TCP/IP Settings** dialog box, select the **WINS** tab and select **Enable NetBIOS over TCP/IP**.

9.3.2 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**.

9.3.3 Disable SMB over NetBIOS registry (Windows 2003 only)

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

1. In the Windows Registry Editor, navigate to `HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services > NetBT > Parameters`.

2. Set the DWORD `SMBDeviceEnabled` to 0. If it is not present, add a new DWORD value with name `SMBDeviceEnabled` and set it to 0.

9.3.4 Disable File and Printer Sharing (Windows 2008 only)

- Go to **Network Settings**, deselect **File and Printer Sharing for Microsoft Clients**, and click **Apply**.
For information about troubleshooting your LiveCycle ES2 installation and configuration, see the *Troubleshooting LiveCycle ES2* guide.
Appendix - Install Command Line Interface

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

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

- Your environment includes the software and hardware required to run LiveCycle ES2.
- You have prepared the environment as required. (See Preparing to Install LiveCycle ES2 (Server Cluster).)
- You have reviewed the first page of Installing the product files on page 26 and the Installing the LiveCycle ES2 Modules section.

Note: MySQL is not supported for server clusters. Do not choose a MySQL option when you respond to prompts displayed by the LiveCycle ES2 CLI installation program.

This appendix covers the following topics:

- "Installing LiveCycle ES2" on page 67
- "Error logs" on page 69
- "Uninstalling LiveCycle ES2 in console mode" on page 69
- "Next steps" on page 70

A.1 Installing LiveCycle ES2

This section covers the initial installation of LiveCycle ES2. For information about configuration and deployment, see Configuring LiveCycle ES2 for Deployment on page 39 or Appendix - LCM Command Line Interface on page 71.

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

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

To install LiveCycle ES2:

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

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

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

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose Locale</td>
<td>Select the locale for the installation to use by entering a value between 1 and 3. You can select the default value by pressing <strong>Enter</strong>. The options are Deutsch, English, and Français. English is the default language.</td>
</tr>
</tbody>
</table>
| Choose Install Folder                   | On the Destination screen, press **Enter** to accept the default directory or type the new installation directory location. Default install folders are:  
   (Windows): C:\Adobe\Adobe LiveCycle ES2  
   (Linux, Solaris): /opt/adobe/adobe_livecycle_es2  
   **Note:** Do not use accented characters in the directory name. Otherwise, the CLI will ignore the accents and create a directory after modifying the accented characters. |
| LiveCycle ES2 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. During the installation process, the progress bar advances to indicate the progress of installation. Type `back` if you want to change the settings, or `quit` to close the installation. |
| Installing                              | The progress of the installation process is indicated. |
A.2 Error logs

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

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

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

A.3 Uninstalling LiveCycle ES2 in console mode

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

Do the following:

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

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

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

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

   - (Windows) Uninstall Adobe LiveCycle ES2.exe -i console
   - (Linux, Solaris) ./Uninstall Adobe LiveCycle ES2 -i console
Note: If you typed the uninstall command without the `-i` console option, uninstallation is completed silently.

3. Follow the on-screen instructions.

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

A.4 Next steps

You must now configure LiveCycle ES2 for deployment. (See “Configuring LiveCycle ES2 for Deployment” on page 39 or “Appendix - LCM Command Line Interface” on page 71.)
Appendix - LCM Command Line Interface

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

- “Order of operations” on page 71
- “Command Line Interface property file” on page 72
- “Examples Usage” on page 91
- “Error Logs” on page 91

B.1 Order of operations

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

2. Validate application server topology.
3. Validate the database connectivity.
4. Configure the application server (WebSphere and WebLogic only).
5. Validate the application server configurations.
10. Deploy the LiveCycle ES2 modules.
11. Deploy the 7.x compatibility layer with the LiveCycle ES2 modules.
12. Validate the LiveCycle ES2 module deployment.
13. Check system readiness for PDF Generator ES2.
15. Configure LiveCycle ES2 Connector for IBM Content Manager.
17. Configure LiveCycle ES2 Connector for EMC Documentum.
18. Test all LiveCycle ES2 Connectors for ECM configurations.

19. Configure Content Services ES2.

**Caution:** You must restart each WebLogic Server of your cluster after you complete your LiveCycle Configuration Manager CLI operations.

### B.2 Command Line Interface property file

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

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

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

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

#### B.2.1 Common properties

The common properties are as follows:

- **WebLogic and WebSphere specific properties:** Are required for the Configure the Application Server, Deploy LiveCycle, Validate Application Server Topology and Validate Application Server Configurations operations.

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

These properties are required for the following operations:

- Initialize LiveCycle ES2
- Deploy LiveCycle ES2 components.

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebLogic specific properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property</td>
<td>Values</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>targetServer.topologyType</td>
<td>server or cluster</td>
<td>The type of application server topology for which you are deploying LiveCycle ES2.</td>
</tr>
<tr>
<td>targetServer.name</td>
<td>String</td>
<td>The name assigned to the application server node or cluster.</td>
</tr>
<tr>
<td>targetServer.adminHost</td>
<td>String, Default is localhost</td>
<td>The hostname of the server where the WebLogic application server is installed.</td>
</tr>
<tr>
<td>targetServer.adminPort</td>
<td>Integer</td>
<td>The port number the WebLogic admin server uses to listen for requests.</td>
</tr>
<tr>
<td>targetServer.adminUserID</td>
<td>String</td>
<td>The administrative user ID to use when accessing the WebLogic application server.</td>
</tr>
<tr>
<td>targetServer.adminPassword</td>
<td>String</td>
<td>The password associated with the WebLogic administrative user ID.</td>
</tr>
<tr>
<td>localServer.appServerRootDir</td>
<td>Default: (Windows) WebLogic 10g Server 10.3\nC:\bea\wlserver_10.3</td>
<td>The root directory of the application server instance that you are configuring locally (on which you plan to deploy LiveCycle ES2 or that you will use to communicate with a remote server on which you plan to deploy LiveCycle ES2).</td>
</tr>
<tr>
<td></td>
<td>(Linux, Solaris) WebLogic 10g Server 10.3\n/opt/bea/wlserver_10.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Windows) WebLogic 11g Server 10.3\nC:\Oracle\Middleware\wlserver_ 10.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Linux, Solaris) WebLogic 10g Server 10.3\n/opt/Oracle/Middleware/wlserve r_10.3</td>
<td></td>
</tr>
</tbody>
</table>
### targetServer.appServerRootDir

Default:
- (Windows) WebLogic 10g Server 10.3: `C:\bea\wlserver_10.3`
- (Windows) WebLogic 11g Server 10.3: `C:\Oracle\Middleware\wlserver_10.3`
- (Linux, Solaris) WebLogic 10g Server 10.3: `/opt/bea/wlserver_10.3`
- (Linux, Solaris) WebLogic 11g Server 10.3: `/opt/Oracle/Middleware/wlserver_10.3`

The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy LiveCycle ES2).

### LiveCycle Server specific properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCHost</td>
<td>String</td>
<td>The hostname of the server where LiveCycle ES2 will be deployed.</td>
</tr>
<tr>
<td>LCPort</td>
<td>Integer</td>
<td>The web port number where LiveCycle ES2 will be deployed.</td>
</tr>
<tr>
<td>excludedSolutionComponents</td>
<td>String. Values include: ALCLFS-Forms, ALCLFS-BusinessActivityMonitoring, ALCLFS-ConnectorEMCDocument, ALCLFS-ConnectorIBMFileNet, ALCLFS-ConnectorIBMContentManager, ALCLFS-ContentServices, ALCLFS-DigitalSignatures, ALCLFS-DataCapture, ALCLFS-Output, ALCLFS-PDFGenerator, ALCLFS-PDFGenerator3D, ALCLFS-ProcessManagement, ALCLFS-ReaderExtensions, ALCLFS-RightsManagement</td>
<td>(Optional) List the LiveCycle ES2 modules you do not want to configure. Specify the excluded modules in a comma separated list.</td>
</tr>
</tbody>
</table>
### B.2.2 Configure LiveCycle properties

These properties only apply to the configure LiveCycle operation.

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdobeFontsDir</td>
<td>String</td>
<td>Location of the Adobe server fonts directory. This path must be accessible from the server being deployed to.</td>
</tr>
<tr>
<td>customerFontsDir</td>
<td>String</td>
<td>Location of the customer fonts directory. This path must be accessible from the server being deployed to.</td>
</tr>
<tr>
<td>systemFontsDir</td>
<td>String</td>
<td>Location of the system fonts directory. Multiple System fonts locations can be entered using a semicolon as separator. These paths must be accessible from the server being deployed to.</td>
</tr>
<tr>
<td>LCTempDir</td>
<td>String</td>
<td>Location of the temporary directory. This path must be accessible from the server being deployed to.</td>
</tr>
<tr>
<td>LCGlobalDocStorageDir</td>
<td>String</td>
<td>The global document storage root directory. Specify a path to an NFS shared directory used to store long-lived documents and to share them among all cluster nodes. Specify this property only when deploying LiveCycle ES2 components in a clustered environment. This path must be accessible from the server being deployed to.</td>
</tr>
<tr>
<td>EnableDocumentDBStorage</td>
<td>true or false</td>
<td>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.</td>
</tr>
<tr>
<td>Property</td>
<td>Values</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>enableFIPS</td>
<td>true or false</td>
<td>Enabling the Federal Information Processing Standards (FIPS) option restricts data protection to FIPS 140-2 approved algorithms using the RSA BSAFE Crypto-J 3.5.2 encryption module with FIPS 140-2 validation certificate #590. Set this value to true only if you require FIPS to be enforced.</td>
</tr>
<tr>
<td>contentServices.rootDir</td>
<td>String</td>
<td>[Adobe LiveCycle Content Services ES2 only] Specify the root directory used by Content Services ES2. If the Livecycle is in clustered environment, this directory must be a location shared by all nodes in a cluster with the same path across all nodes.</td>
</tr>
<tr>
<td>contentServices.indexesDir</td>
<td>String</td>
<td>[Adobe LiveCycle Content Services ES2 only] Specify the indexes directory used by Content Services ES2. This directory is unique for each cluster node and must have the same name and location on all nodes. For example, <code>contentServices.indexesDir=C:\\Adobe\\LiveCycle9\\lccs_indexes</code></td>
</tr>
<tr>
<td>contentServices.topology</td>
<td>String. Specify either SERVER or CLUSTER. Default: SERVER</td>
<td>[Adobe LiveCycle Content Services ES2 only] SERVER for single node, CLUSTER for a cluster configuration.</td>
</tr>
<tr>
<td>contentServices.cifs.enable</td>
<td>true or false</td>
<td>[Adobe LiveCycle Content Services ES2 only] Enables or disables CIFS.</td>
</tr>
<tr>
<td>contentServices.cifs.servername</td>
<td>String</td>
<td>[Adobe LiveCycle Content Services ES2 only] Server name of the CIFS server.</td>
</tr>
<tr>
<td>contentServices.cifs.implementation</td>
<td>String. Specify one of the following: ● NetBIOS ● PureJava</td>
<td>[Adobe LiveCycle Content Services ES2 only] Specifies how Content Services ES2 connects to the CIFS server.</td>
</tr>
<tr>
<td>Property</td>
<td>Values</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>contentServices.cifs.dllpath</td>
<td>String. Specify the path from where the NetBIOS DLL will be copied. Required if &quot;contentServices.cifs.implementation=NetBIOS&quot;. This path must be present in the environment.</td>
<td></td>
</tr>
<tr>
<td>contentServices.cifs.alternateIP</td>
<td>Numeric</td>
<td>[Adobe LiveCycle Content Services ES2 only] Alternate IP Address of the CIFS Server. It should be static IP and it is required field if &quot;contentServices.cifs.implementation=PureJava&quot;.</td>
</tr>
</tbody>
</table>
| contentServices.cifs.WinsOrBrdcast | String. Specify one of the following:  
  ● winsServer  
  ● broadcast | [Adobe LiveCycle Content Services ES2 only] DNS discovery method. It can be "winsServer" or "broadcast" and it is required field if "contentServices.cifs.implementation=PureJava". |
| contentServices.cifs.winsPrmlIP | Numeric                     | [Adobe LiveCycle Content Services ES2 only] Primary WINS Server IP address. It can obtained from ipconfig /all command. It is required field if "contentServices.cifs.implementation=PureJava" and "contentServices.cifs.WinsOrBrdcast=winsServer". |
| contentServices.cifs.winsSecIP  | Numeric                     | [Adobe LiveCycle Content Services ES2 only] Secondary WINS Server IP address. It can obtained from ipconfig /all command. It is required field if "contentServices.cifs.implementation=PureJava" and "contentServices.cifs.WinsOrBrdcast=winsServer". |
B.2.3 Configure or Validate Application Server properties

The LiveCycle Configuration Manager can configure or validate your WebLogic application server as required by LiveCycle ES2.

These properties apply to the following operations:
- Configure Application Server
- Validate Application Server Topology
- Validate Application Server Configurations
- Validate Database Connectivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>contentServices.cifs.brdCastIP</td>
<td>Numeric</td>
<td>[Adobe LiveCycle Content Services ES2 only] Broadcast IP address. It is required field if &quot;contentServices.cifs.implementation=PureJava&quot; and &quot;contentServices.cifs.WinsOrBrdcast=broadCast&quot;.</td>
</tr>
<tr>
<td>contentServices.dbType</td>
<td>String</td>
<td>[Adobe LiveCycle Content Services ES2 only] Content Services database type.</td>
</tr>
</tbody>
</table>

You must configure the WebLogic specific properties section. For more information see “Common properties” on page 80.

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>jvm.initialHeapSize</td>
<td>Default: 512</td>
<td>The initial heap size, in MB, for the JVM.</td>
</tr>
<tr>
<td>jvm.maxHeapSize</td>
<td>Default: 1792</td>
<td>The maximum heap size, in MB, for the JVM.</td>
</tr>
</tbody>
</table>

**WebLogic and WebSphere Cluster only**

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cache.useUDP</td>
<td>true or false</td>
<td>Set the value to true if LiveCycle ES2 uses UDP to implement caching.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set to false if LiveCycle ES2 uses TCP to implement caching.</td>
</tr>
<tr>
<td>Property</td>
<td>Values</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>cache.udp.port</td>
<td>Default: 33456</td>
<td>The port number that the primary WebLogic Server computer uses for UDP-based caching communication. Configure only if cache.useUDP=true.</td>
</tr>
<tr>
<td>cache.tcpip.primaryhost</td>
<td>String</td>
<td>The host name of the computer where the primary WebLogic Server is installed. Configure only if cache.useUDP=true.</td>
</tr>
<tr>
<td>cache.tcpip.primaryport</td>
<td>Default: 22345</td>
<td>The port number that the primary WebLogic Server computer uses for TCP-based caching communication. Configure only if cache.useUDP=true.</td>
</tr>
<tr>
<td>cache.tcpip.secondaryhost</td>
<td>String</td>
<td>The host name of the computer where the secondary WebLogic Server is installed. Configure only if cache.useUDP!=true.</td>
</tr>
<tr>
<td>cache.tcpip.secondaryport</td>
<td>Default: 22345</td>
<td>The port number that the secondary WebLogic Server computer uses for TCP-based caching communication. Configure only if cache.useUDP!=true.</td>
</tr>
<tr>
<td>contentServices.cluster.cacheListenerArgs</td>
<td>Comma-separated string myhostA:7800,myhostB:7800</td>
<td>(Cluster only) [Adobe LiveCycle Content Services ES2 only] The hostname or IP address of the Content Services ES2 cache listener in the cluster with port.</td>
</tr>
<tr>
<td>contentServices.cluster.startPort</td>
<td>Integer</td>
<td>(Cluster only) [Adobe LiveCycle Content Services ES2 only] The port the Content Services ES2 cache listener at this node uses to listen to requests.</td>
</tr>
<tr>
<td>contentServices.cluster.portRange</td>
<td>Integer. Default is 3.</td>
<td>(Cluster only) [Adobe LiveCycle Content Services ES2 only] Content Services ES2 cache range.</td>
</tr>
</tbody>
</table>

*WebLogic server core classpath configuration*
### Property Configuration

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>classpath.targetServer.javaHome</code></td>
<td>String</td>
<td>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 the server being configured.</td>
</tr>
<tr>
<td><code>classpath.targetServer.pop3JarPath</code></td>
<td>String</td>
<td>Path to the Pop3 JAR file that is accessible to the target application server. This path must be accessible from the server being configured.</td>
</tr>
</tbody>
</table>

**Datasource configuration**

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>datasource.dbType</code></td>
<td>Choose:</td>
<td>The type of database configured to use with LiveCycle ES2.</td>
</tr>
<tr>
<td></td>
<td>● oracle ● db2 ● sqlserver</td>
<td></td>
</tr>
<tr>
<td><code>datasource.dbName</code></td>
<td>String</td>
<td>The name of the database.</td>
</tr>
<tr>
<td><code>datasource.dbHost</code></td>
<td>String</td>
<td>The host name or IP address of the server where the database is located.</td>
</tr>
<tr>
<td><code>datasource.dbPort</code></td>
<td>Integer</td>
<td>The database port LiveCycle ES2 will use when communicating with the database.</td>
</tr>
<tr>
<td><code>datasource.dbUser</code></td>
<td>String</td>
<td>The user ID LiveCycle ES2 will use when accessing the database.</td>
</tr>
<tr>
<td><code>datasource.dbPassword</code></td>
<td>String</td>
<td>The password associated with the database user ID.</td>
</tr>
<tr>
<td><code>datasource.target.driverPath</code></td>
<td>String</td>
<td>JDBC driver in the application server lib directory. This path must be valid and accessible from the server being configured.</td>
</tr>
<tr>
<td><code>datasource.local.driverPath</code></td>
<td>String</td>
<td>Local JDBC driver. This value is used for testing direct database connection.</td>
</tr>
</tbody>
</table>
B.2.4 Deploy LiveCycle properties

These properties only apply to the deploy LiveCycle ES2 operation.

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>deployment.includeIVS</td>
<td>true or false</td>
<td>Specifies whether IVS EAR files are included in the deployment. Caution: It is recommended not to include IVS EAR files in a production environment.</td>
</tr>
</tbody>
</table>

B.2.5 Initialize LiveCycle properties

These properties only apply to the initialize LiveCycle ES2 operation.

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>You must configure the LiveCycle Server Information section. For more information, see “Common properties” on page 80.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B.2.6 Initialize BAM properties

These properties only apply to the initialize BAM operation.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMHost</td>
<td>String</td>
<td>The hostname of the server where BAM is deployed and running.</td>
</tr>
<tr>
<td>BAMPort</td>
<td>Integer</td>
<td>The port number the BAM server is using to listen for requests.</td>
</tr>
<tr>
<td>BAMAdminUserID</td>
<td>String</td>
<td>The BAM administrator user ID to use when connecting to the BAM server.</td>
</tr>
<tr>
<td>BAMAdminPassword</td>
<td>String</td>
<td>The BAM administrator password to use when connecting to the BAM server.</td>
</tr>
</tbody>
</table>


### B.2.7 Deploy LiveCycle Components properties

These properties apply to the following operations:

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>databaseType</td>
<td>Choose:</td>
<td>The type of database LiveCycle is using to capture BAM data.</td>
</tr>
<tr>
<td></td>
<td>oracle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mysql</td>
<td></td>
</tr>
<tr>
<td></td>
<td>db2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sqlserver</td>
<td></td>
</tr>
</tbody>
</table>

You must configure the LiveCycle Server Information section. For more information, see “Common properties” on page 80.

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCAdminUserID</td>
<td>String</td>
<td>The user ID to assign to the LiveCycle Administrator user. This User ID is used to login to the LiveCycle Administrator Console.</td>
</tr>
<tr>
<td>LCAdminPassword</td>
<td>String</td>
<td>The password to assign to the LiveCycle Administrator user. This password is used to login to the LiveCycle Administrator Console.</td>
</tr>
</tbody>
</table>

### B.2.8 Command Line Interface Usage

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

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

#### B.2.8.1 Configure LiveCycle CLI Usage

The Configure LiveCycle operation requires the following syntax:

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

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For more information on creating a property file, see “Command Line Interface property file” on page 72.
B.2.8.2 Configure the Application Server CLI Usage

The Configure Application Server operation for WebLogic 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 instructions on creating a property file, see "Command Line Interface property file" on page 72.
- **-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.

B.2.8.3 Deploy LiveCycle CLI Usage

The Deploy LiveCycle operation requires the following syntax:

deployLiveCycle -f <propertyFile>

Where:

- **-f <propertyFile>**: A property file containing the required arguments. For more information on creating a property file, see "Command Line Interface property file" on page 72.

B.2.8.4 Initialize LiveCycle CLI Usage

The initialize LiveCycle operation requires the following syntax:

initializeLiveCycle -f <propertyFile>

Where:

- **-f <propertyFile>**: A property file containing the required arguments. For instructions on creating a property file, see "Command Line Interface property file" on page 72.

B.2.8.5 Initialize Business Activity Monitoring CLI Usage

The initialize Business Activity Monitoring operation requires the following syntax:

initializeBAM -f <propertyFile>

Where:

- **-f <propertyFile>**: A property file containing the required arguments. For instructions on creating a property file, see "Command Line Interface property file" on page 72.

B.2.8.6 Deploy LiveCycle Components CLI Usage

The Deploy LiveCycle Components operation requires the following syntax:
deployLiveCycleComponents -f <propertyFile> -targetServer_AdminPassword <password>

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For instructions on creating a property file, see “Command Line Interface property file” on page 72.
- `-targetServer_AdminPassword <password>`: Allows you to set the Admin password on the command line. If this argument is present, it will override the targetServer.adminPassword property in the property file.

B.2.8.7 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 instructions on creating a property file, see “Command Line Interface property file” on page 72.
- `-targetServer_AdminPassword <password>`: Allows you to set the Admin password on the command line. If this argument is present, it will override the targetServer.adminPassword property in the property file.

B.2.8.8 Validate database connectivity CLI Usage

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

validateDBConnectivity -f <propertyFile> -datasource_dbPassword <password>

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For instructions on creating a property file, see “Command Line Interface property file” on page 72.
- `-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.

B.2.8.9 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>

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For instructions on creating a property file, see “Command Line Interface property file” on page 72.
- `-targetServer_AdminPassword <password>`: Allows you to set the Admin password on the command line. If this argument is present, it will override the targetServer.adminPassword property in the property file.
B.2.8.10 Validate LiveCycle Server CLI Usage

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

validateLiveCycleServer -f <propertyFile> -targetServer_AdminPassword <password>

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For instructions on creating a property file, see "Command Line Interface property file" on page 72.
- `-targetServer_AdminPassword <password>`: Allows you to set the Admin password on the command line. If this argument is present, it will override the targetServer.adminPassword property in the property file.

B.2.8.11 Validate LiveCycle Component Deployment CLI Usage

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

validateLiveCycleComponentDeployment -f <propertyFile> -targetServer_AdminPassword <password>

Where:

- `-f <propertyFile>`: A property file containing the required arguments. For instructions on creating a property file, see "Command Line Interface property file" on page 72.
- `-targetServer_AdminPassword <password>`: Allows you to set the Admin password on the command line. If this argument is present, it will override the targetServer.adminPassword property in the property file.

B.3 Examples Usage

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

ConfigurationManagerCLI configureLiveCycle -f cli_propertyFile.txt

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

B.4 Error Logs

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

B.5 Next steps

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

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

● Uninstall LiveCycle ES2. (See “Uninstalling LiveCycle ES2” on page 61.)

If you did not configure your application server for deployment, you must now configure your application server. (See “Manually Configuring a WebLogic Server Cluster” on page 40.)