



Adobe

Installing and Deploying LiveCycle® ES2 Using JBoss® Turnkey

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Adobe® LiveCycle® ES2

Version 9

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Installing and Deploying Adobe® LiveCycle® ES2 Using JBoss® Turnkey®

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About This Document

This document explains how to install and configure Adobe® LiveCycle® ES2 (Enterprise Suite) for Red Hat® JBoss® and MySQL by using the turnkey method. The turnkey method automatically installs and configures the product and is the recommended installation option for rapid evaluation, development, and small production deployments.

Who should read this document?

This document is intended for users who are installing, configuring, administering, or deploying LiveCycle ES2. These users include evaluators, administrators, or developers who are responsible for installing, configuring, administering, or deploying LiveCycle ES2. The information provided is based on the assumption that anyone reading this document is familiar with the Microsoft® Windows® operating systems and web environments.

Conventions used in this document

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

Name	Default value	Description
[LiveCycleES2 root]	C:\Adobe\Adobe LiveCycle ES2\	The installation directory that is used for all LiveCycle ES2 modules. This directory contains subdirectories for LiveCycle Configuration Manager, the LiveCycle ES2 SDK, and each LiveCycle ES2 solution component installed.
[JBossES2 root]	C:\Adobe\Adobe LiveCycle ES2\jboss	The home directory of the application server that runs LiveCycle ES2.
[Adobe_JAVA_HOME]	C:\Adobe\Adobe LiveCycle ES2\Java	The home directory of the Java JDK installed by the LiveCycle ES2 turnkey.

Additional information

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

For information about	See
General information about LiveCycle ES2 and the modules	LiveCycle ES2 Overview
What's new in this LiveCycle ES2 release	What's New for LiveCycle ES2
LiveCycle ES2 release information and last-minute changes that occur to the product	LiveCycle ES2 Release Notes

For information about	See
LiveCycle ES2 terminology	LiveCycle ES2 Glossary
Upgrading	Upgrading to LiveCycle ES2 from 8.x (for JBoss Turnkey)
Other services and products that integrate with LiveCycle ES2	Adobe Development Center
LiveCycle ES2 modules	Adobe LiveCycle ES2 (Enterprise Suite)
All documentation available for LiveCycle ES2	Adobe LiveCycle ES2 documentation
Patch updates, technical notes, and additional information about this product version	LiveCycle Technical Support

This chapter describes how to install LiveCycle ES2 by using the turnkey method. The turnkey installation option is most appropriate for rapid installations of evaluation, developer, and small production environments. The turnkey installation automatically performs all of the tasks that are required to install and configure LiveCycle ES2 on a JBoss Application Server with a local MySQL database (or a remote database you have preconfigured) running on Microsoft Windows only. You can choose the turnkey method during the installation process.

The following information is included in this document:

- A description of the system requirements for installing the LiveCycle ES2 turnkey.
- Backing up the LiveCycle ES (8.x) data.
- All the steps required to initiate and complete the installation. (When you complete these steps, LiveCycle ES2 is running on JBoss and ready to accept requests.)
- Details about what you can do next, including accessing LiveCycle Administration Console and User Management, and accessing some of the web applications that may be available (depending on the LiveCycle ES2 modules you have licensed).

Note: LiveCycle ES2 turnkey installer disables JBoss JMS services, therefore, the JMS service of LiveCycle Foundation is unavailable. The sample for LiveCycle Foundation JMS service will not work. To enable LiveCycle Foundation JMS service and the samples, revert the steps described in the section *“Remove JMS and clustering configuration files”* in the Preparing to Install guide.

Turnkey installation overview

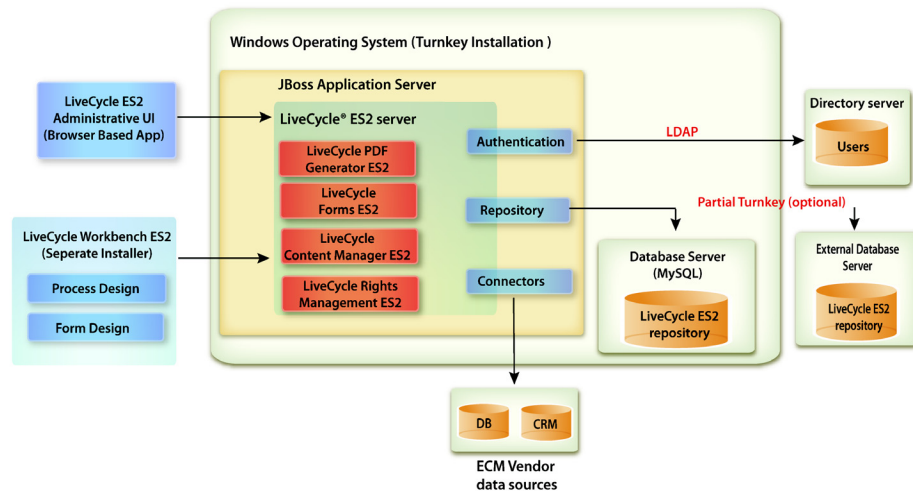
The turnkey installation performs the following tasks:

- Installs the product files
- Installs the required Sun JDK version 1.6.0_14.
- Installs JBoss 4.2.1 Application Server (with Apache Tomcat servlet container embedded)
- Installs the MySQL 5.0 database (not included with Partial Turnkey option)
- Starts LiveCycle Configuration Manager
- Configures and assembles the LiveCycle ES2 EAR files in either express mode or custom mode
- Deploys LiveCycle ES2 to JBoss
- Initializes the database (either the Local MySQL 5.0 database or, with the Partial Turnkey option, the remote database)
- Supports LiveCycle ES2 Business Activity Monitoring ES2 on JBoss out of the box
- Deploys required components to JBoss
- Configures the LiveCycle Reader Extensions ES2 Rights credential
- Imports the product samples

You can also run the turnkey install in the command line mode. You can use this option if you are installing LiveCycle ES2 on a computer that does not support GUI. If you use the command line option, you must also use the command line option to uninstall LiveCycle ES2.

Turnkey installation architecture

The following diagram illustrates a LiveCycle ES2 Turnkey installation.



Some of the components are optional as part of the turnkey installation. For example:

- LDAP Directory Server - you do not need to authenticate with LDAP to set up LiveCycle users. For lab trials and testing purposes, you can use LiveCycle ES2 User Management (available from LiveCycle Administration Console) to create new user accounts.
- Partial Turnkey - External database server - the typical turnkey installation includes a preconfigured MySQL database.
- Connectors - LiveCycle ES2 can connect to your ECM vendor's datasource (if applicable)

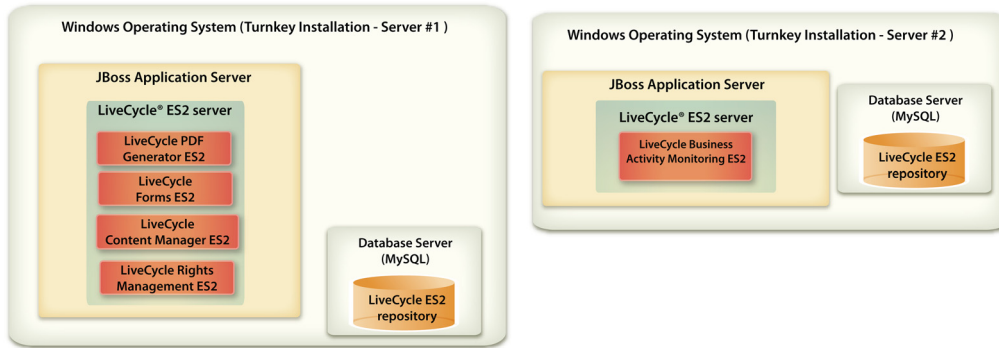
Note: The above illustration shows LiveCycle Workbench ES2 required for creating and deploying processes to the LiveCycle ES2 server. To install LiveCycle Workbench ES2, refer to [Installing Your Development Environment](#).

Optional Business Activity Monitoring ES2 deployment

With the LiveCycle ES2 turnkey installation, you can install and configure LiveCycle Business Activity Monitoring ES2 as a standalone application. This option automatically performs all of the tasks that are required to install and configure Business Activity Monitoring ES2 on a Windows server. Performance increases when BAM is installed on a standalone server independent of LiveCycle ES2 server.

Note: LiveCycle Business Activity Monitoring ES2 is only supported on 64-bit operating systems. If you install BAM using the turnkey option it will install a standalone version of JBoss on your server. Therefore, if you are installing BAM along with other LiveCycle ES2 components your server will have two instances of JBoss installed.

The following diagram illustrates a LiveCycle ES2 turnkey deployment and a standalone BAM installation.



2

System prerequisites

This section provides the hardware and software requirements to install LiveCycle ES2 using the turnkey method.

2.1 Development versus production environments

Use the turnkey installation to install all the modules on a single system for development and evaluation. Ensure that your target computer has at least 4 GB RAM. In addition, install LiveCycle Business Activity Monitoring ES2 on a different 64-bit Windows server. Business Activity Monitoring ES2 is not supported on 32-bit systems, but other LiveCycle ES2 components are supported on 32-bit operating systems.

For production use, deploy Business Activity Monitoring ES2 on a separate application server. For larger production use, Business Activity Monitoring ES2 must be installed on a dedicated system running both a 64-bit operating system and application server.

2.2 Additional prerequisites

Before you install LiveCycle ES2, ensure that you have the following prerequisite hardware and software installed:

- [“Hardware” on page 10](#)
- [“Operating system” on page 11](#)
- [“Web browser support” on page 11](#)
- [“Application server” on page 14](#)
- [“Partial turnkey database preconfiguration” on page 14](#)
- [“LiveCycle Reader Extensions ES2 credential” on page 14](#)

Additionally, if you include LiveCycle PDF Generator ES2 as part of your LiveCycle ES2 solution, complete the following tasks before you begin the installation:

- [“Granting the Logon As Service right when installing PDF Generator ES2 or PDF Generator 3D ES2” on page 16](#)
- [“Installing Acrobat for PDF Generator ES2 or PDF Generator 3D ES2” on page 17](#)

2.2.1 Hardware

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

- Disk space for installation: 3 GB (an additional 3 GB is required if you are using an ESD download and not installing from a DVD)
- System temporary space during installation: 5.4 GB
- Memory for running LiveCycle ES2: 3.4 GB
- Processor: Intel® Pentium® 4 or equivalent, 1.6 GHz, or higher processor

2.2.2 Operating system

The turnkey method supports the following Microsoft Windows operating systems:

- Windows Server 2003 Standard and Enterprise Edition SP2 running on 32-bit and 64-bit architectures.
- Windows Server 2003 Standard and Enterprise Edition R2 SP2 running on 32-bit, 64-bit, and VMWare ESX/GSX architectures
- Windows Server 2008 Standard and Enterprise Edition running on 64-bit architectures (required for production environment)
- Business Activity Monitoring ES2 requires 64-bit operating system. If you want to install BAM also on the same machine, choose a 64-bit Windows operating system for installing LiveCycle ES2.

For preconfiguration settings on Windows Server 2008 Enterprise Edition environment, see [“Configuration for 64-bit Windows Server 2008, Windows 7 or Vista installations” on page 15](#).

Note: Microsoft Windows XP (SP2 or SP3), Windows Vista (32-bit and 64-bit), and Windows 7 (32-bit and 64-bit) are supported for LiveCycle ES2 evaluation and development.

Business Activity Monitoring ES2 is not supported on Windows 7.

Note: You must have administrator privileges on Windows. If you run the installer using an account that does not have these privileges, you will be prompted for the credentials of an account with administrator privileges.

2.2.3 Web browser support

This section outlines the supported web browsers for the LiveCycle ES2 user interfaces. Although LiveCycle ES2 turnkey only installs on Windows, the end-user user interfaces can be accessed remotely from computers running on other operating systems. Refer to the following tables for supported web browsers.

To view some LiveCycle ES2 modules, you must install a supported version of Flash Player available from www.adobe.com.

2.2.3.1 End-user user interface

End-user components include these modules:

- LiveCycle Workspace ES2 (Flash Player required)

Note: Adobe Flash Player 9.0.115.0 or later is required for Workspace ES2 or for using form guides in Workspace ES2.

- LiveCycle Reader Extensions ES2 (Flash Player required)
- LiveCycle Rights Management ES2 (Flash Player required)
- LiveCycle PDF Generator ES2 and LiveCycle PDF Generator 3D ES2 (browser only)
- LiveCycle Content Services ES2 (browser only)

Operating system	Flash Player	Supported browser
Microsoft Windows Vista™	Flash Player 9 or 10	Microsoft Internet Explorer 7 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾
Windows 2000	Flash Player 9 or 10	Internet Explorer 6 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾
Windows XP	Flash Player 9 or 10	Internet Explorer 6 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾
Microsoft Windows 7	Flash Player 9 or 10	Microsoft Internet Explorer 8.0 or later Firefox 3.0 or later
Windows Server 2003	Flash Player 9 or 10	Internet Explorer 6 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾
Microsoft Windows Server 2008	Flash Player 9 or 10	Microsoft Internet Explorer 7 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾
Mac OS X v 10.4.x or 10.5.x (PowerPC)	Flash Player 9 or 10	Firefox 3.0 or later (not for Workspace ES2) ⁽¹⁾⁽²⁾ Safari 3.x or 4.x (Workspace ES2 and Content Services ES2 require version 3.0.3 or later)
Mac OS X v 10.4.x, 10.5.x., or 10.6.x (Intel)	Flash Player 9 or 10	Firefox 3.0 or later (not for Workspace ES2) ⁽¹⁾⁽²⁾ Safari 3.x or 4.x (Workspace ES2 and Content Services ES2 require version 3.0.3 or later)

⁽¹⁾“or later” includes major revisions. For example, Internet Explorer 6 or later also covers Internet Explorer 7 and 8.

⁽²⁾Workspace ES2 supports Internet Explorer and Firefox on Windows but only Safari 3.0.3 or later on the Mac.

- LiveCycle Forms ES2

Operating system	Flash Player	Supported browser
Microsoft Windows Vista™	N/A	Microsoft Internet Explorer 6 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾ Netscape 8.x or later
Windows XP	N/A	Microsoft Internet Explorer 6 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾ Netscape 8.x or later
Windows 7	N/A	Microsoft Internet Explorer 7.0 or later Firefox 3.0 or later

Operating system	Flash Player	Supported browser
Windows Server 2003	N/A	Firefox 3.0 or later ⁽¹⁾
Windows 2008 Server	N/A	Microsoft Internet Explorer 7.0 or later Firefox 3.0 or later
Linux (Intel)	N/A	Firefox 3.0 or later ⁽¹⁾ Netscape 8.x or later
Mac OS X v 10.4.x or 10.5.x (PowerPC)	N/A	Safari 3.x or 4.x
Mac OS X v 10.4.x, 10.5.x., or 10.6.x (Intel)	N/A	Safari 3.x or 4.x

⁽¹⁾“or later” includes major revisions. For example, Internet Explorer 6 or later also covers Internet Explorer 7 and 8.

- LiveCycle Business Activity Monitoring ES2

Operating system	Flash Player	Supported browser
Microsoft Windows Vista™	Flash Player 9 or 10	Microsoft Internet Explorer 7 or later ⁽¹⁾
Windows XP	Flash Player 9 or 10	Microsoft Internet Explorer 6 or later ⁽¹⁾
Windows Server 2000	Flash Player 9 or 10	Microsoft Internet Explorer 6 or later ⁽¹⁾

⁽¹⁾“or later” includes major revisions. For example, Internet Explorer 6 or later also covers Internet Explorer 7 and 8.

2.2.3.2 Administrator user interface

This table outlines the supported web browsers for the LiveCycle Administration Console user interface.

Operating system	Flash Player	Supported browser
Microsoft Windows Vista	N/A	Internet Explorer 7 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾
Windows 2000	N/A	Internet Explorer 6 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾
Windows XP	N/A	Internet Explorer 6 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾
Windows Server 2003	N/A	Internet Explorer 6 or later ⁽¹⁾ Firefox 3.0 or later ⁽¹⁾

(1)“or later” includes major revisions. For example, Microsoft Internet Explorer 6 or later also covers Microsoft Internet Explorer 7 and 8.

2.2.4 Partial turnkey database preconfiguration

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

- MySQL 5.0.18, 5.1.30 (recommended)
- Microsoft SQL Server 2005 SP2, 2008
- Oracle 10g, 11g

If you are using your existing database, configure the database as specified in the “Creating the LiveCycle ES2 Database” section in the [Preparing to Install LiveCycle ES2 \(single server\)](#) guide.

2.2.5 Application server

The turnkey method supports JBoss 4.2.1 (which includes the Apache Tomcat servlet container).

2.2.6 LiveCycle Reader Extensions ES2 credential

If you are installing LiveCycle Reader Extensions ES2, ensure that you have a valid credential and password. If you do not have this information, contact your Adobe account representative. You can skip importing the Reader Extensions ES2 credential during the installation process and install it later using the trust store component in LiveCycle Administration Console.

2.3 Before you install

Before you begin installing LiveCycle ES2, read through the following information to ensure that your installation runs smoothly:

- To reduce the time to complete the installation, install LiveCycle ES2 either by using a local copy of the installation file set or directly from the DVD instead of installing from a shared network location.
- Ensure that the installation media that you received is not damaged. If you copy the installer media to the hard disk of your computer, ensure that you copy the entire DVD contents on to the hard disk.
- If you downloaded the installer file set, verify its integrity using an MD5 check sum utility. Use this utility to check the MD5 check sum values with the value displayed on the Adobe download web site. You can use a tool such as WinMD5.
- To avoid installation errors, do not copy the DVD install image to a directory path which exceeds the maximum path length limitation. Typically, long network paths cause this error. See <http://msdn.microsoft.com/en-us/library/aa365247.aspx> for more information.
- Download any patch updates for LiveCycle ES2 available from [LiveCycle Technical Support](#).
- To improve the speed of installation on Windows, disable any on-access virus scanning software for the duration of the installation.
- The turnkey installation creates the following Windows services, which, by default, are set to run automatically on startup:
 - JBoss for Adobe LiveCycle ES2

- MySQL for Adobe LiveCycle ES2 (not applicable if you selected the Partial turnkey option)

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

Note: If JBoss and MySQL are already installed, you must stop the services before you run the turnkey installation and set the services to be started manually.

- By default, the turnkey installation places LiveCycle ES2 components in the C:\Adobe\Adobe LiveCycle ES2\ directory (referred to as the *[LiveCycleES2 root]* directory).

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

- By default, JBoss is installed to and run from the *[LiveCycleES2 root]/jboss* directory.
- When LiveCycle Configuration Manager is started, you can choose Express Mode or Custom Mode:
 - Express Mode:** Completes the configuration using default values for parameters and limited configuration screens. Express Mode is recommended if you do not want any special system configuration.
 - Custom Mode:** Allows you to customize the system configuration. Custom Mode configuration requires advanced knowledge of LiveCycle ES2, JBoss Application Server and the MySQL database. Custom Mode is recommended if you want to configure your system in a specific way or want more control over the tasks that LiveCycle Configuration Manager completes.

2.3.1 Configuration for 64-bit Windows Server 2008, Windows 7 or Vista installations

On 64-bit Windows Server 2008 or Vista operating systems, modify the Admin Approval Mode security option as follows:

1. Go to **Start > Control Panel > Administrative Tools > Local Security Policy > Local Policies > Security Options**.
2. Locate **User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode** and set it to **Elevate without prompting**.
3. Restart your computer.

Caution: The Windows User Account Control (UAC) must remain disabled for PDF Generator ES2 or PDF Generator 3D ES2 to work properly. You can run the installation and configuration process by turning on the UAC with the Elevate without prompting option enabled. However, you must disable UAC to run PDF Generator ES2 or PDF Generator 3D ES2.

If you are installing and configuring on an evaluation system, you can enable the UAC on the computer after you have deployed to your production computer or uninstalled PDF Generator ES2 or PDF Generator 3D ES2.

► Disable the Windows UAC on Vista:

1. To access the System Configuration Utility, go to **Start > Run** and in the **Open:** box enter **MSCONFIG**.
2. Click the **Tools** tab and scroll down and select **Disable UAC**.

3. Click **Launch** to run the command in a new window.
4. When finished, close the command window and close the System Configuration window.
5. Restart your computer.

To enable the UAC again, repeat the steps above and select **Enable UAC** before clicking Launch.

► **Disable the Windows UAC on Server 2008:**

1. Go to **Start > Control Panel > User Accounts > Turn User Account Control on or off**.
2. Deselect the **Use User Account Control (UAC) to help protect your computer** option and then click **OK**.
3. Restart the computer.

To enable the UAC again, repeat the steps above and select the **Use User Account Control (UAC) to help protect your computer** option before restarting the computer.

► **Disable the Windows UAC on Windows 7:**

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

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

2.3.2 Preconfiguration for PDF Generator ES2 and PDF Generator 3D ES2

Before you install PDF Generator ES2 or LiveCycle PDF Generator 3D ES2, complete the tasks listed in the following two sections. To enable native application support for PDF Generator ES2 or LiveCycle PDF Generator 3D ES2, grant the Logon As Service right to the Microsoft Administrator in Windows before you begin the turnkey installation. With native application file support, PDF Generator ES2 and PDF Generator 3D ES2 can convert files from native formats such as Microsoft Word to Adobe PDF format.

2.3.2.1 Granting the Logon As Service right when installing PDF Generator ES2 or PDF Generator 3D ES2

If you are installing PDF Generator ES2 or PDF Generator 3D ES2 on any Windows operating system, grant the Logon As Service right to the user that installs LiveCycle ES2.

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

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

2.3.2.2 Installing Acrobat for PDF Generator ES2 or PDF Generator 3D ES2

LiveCycle PDF Generator ES2 or PDF Generator 3D ES2 can convert many native file formats to PDF. Such native file formats include Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Project, Microsoft Visio, Corel WordPerfect, Adobe Photoshop® (CS2 only), Adobe FrameMaker®, and Adobe PageMaker®.

If you plan to use PDF Generator ES2 or PDF Generator 3D ES2 native application format conversion or optical character recognition (OCR) generation, install Acrobat 9.2 Professional Extended on the computer where PDF Generator ES2 will run before you run the LiveCycle ES2 installation program. You can also install Acrobat 9.2 later and perform some additional manual tasks.

If you do not want to configure PDF Generator ES2 or PDF Generator 3D ES2 to support this functionality, you do not need to install or upgrade to Acrobat 9.2 Professional Extended. However, it is recommended that you upgrade to Acrobat 9.2 Professional Extended in order to support conversions that use Microsoft Office 2007.

► **To install Acrobat 9.2 Professional Extended for PDF Generator ES2 or PDF Generator 3D ES2:**

1. Uninstall any other version of Acrobat by using the **Add/Remove Programs** window in the Windows Control Panel.
2. Restart your computer if prompted.
3. Install Acrobat 9.2 Professional Extended by running the AutoPlay.exe file from the installation media or folder which contains the installer file set.
4. Follow the instructions on the Acrobat installer screens.

3

Installing and Configuring - Express Mode

When installing LiveCycle you can choose various installation and configuration options to help you customize your turnkey installation. Here are the turnkey installation options:

Express Mode: Completes the configuration using defaults and limited configuration screens. Express Mode is recommended if you do not want any special system configuration. In addition, you can use **Express Mode (BAM only)** to complete the configuration for LiveCycle Business Activity Monitoring ES2 using default values and limited configuration screens.

Custom Mode: Allows you to customize the system configuration and requires some advanced knowledge of LiveCycle ES2, JBoss Application Server and the MySQL database. See ["Installing and Configuring - Custom Mode" on page 25](#).

Partial Turnkey: Completes the configuration of LiveCycle ES2 using a preconfigured JBoss application server. However, this option allows you to configure your own database and point to this database during installation and configuration. See ["Installing and Configuring - Partial Turnkey" on page 35](#).

3.1 Installing LiveCycle ES2 using Express Mode

Before you install LiveCycle ES2, review the following:

- ["System prerequisites" on page 10](#)
- ["Before you install" on page 14](#)

► **To install LiveCycle ES2 using Turnkey:**

1. Do one of the following:

- From the download site, download and extract the entire JBoss_DVD.zip file (the LiveCycle ES2 Electronic Software Download or ESD file) to your file system. Be sure to keep the directory hierarchy unchanged from the JBoss_DVD.zip file.
 - After extracting the ZIP file, launch the installer using one of the following methods:
 - Navigate to the \livecycle_server\9.0\livecycle_server folder and double-click the **run_windows_installer.bat** file to launch the appropriate LiveCycle ES2 installer.
 - (32-bit systems) double-click the **install.exe** file from the \livecycle_server\9.0\Disk1\InstData\Windows\VM folder
 - (64-bit systems) double-click the **install.exe** file from the \livecycle_server\9.0\Disk1\InstData\Windows_64bit\VM folder

- From the JBoss DVD, navigate to the \livecycle_server\9.0 folder. Launch the installer using one of the following methods:
 - Navigate to the \livecycle_server\9.0\livecycle_server folder and double-click the **run_windows_installer.bat** file. This script determines the correct LiveCycle ES2 installer and run it.
 - (32-bit systems) double-click the **install.exe** file from the \livecycle_server\9.0\Disk1\InstData\Windows\VM folder
 - (64-bit systems) double-click the **install.exe** file from the \livecycle_server\9.0\Disk1\InstData\Windows_64bit\VM folder
- 2. When prompted, select the language for installation, and then click **OK**.
- 3. On the Introduction screen, click **Next**.
- 4. Accept the default directory as listed or click **Choose** and navigate to the directory where you want to install the product, and then click **Next**. This directory is referred to as [*LiveCycleES2 root*].

Note: The installation directory path cannot be longer than 40 characters. Also, the installation directory path cannot have international characters.
- 5. In the Choose Installation Type screen, select the installation type and click **Next**:
 - Select **Turnkey** under Typical as the installation type for a typical turnkey installation. Turnkey option installs LiveCycle ES2, JBoss 4.2.1 application server, MySQL 5.1.30 database, and JDK 1.6.0_14.

Note: For Manual installations, see the [Installing and Deploying LiveCycle ES2](#) guide for your application server and review all preparatory steps in [Preparing to Install LiveCycle ES2](#) before continuing.
- 6. (**Turnkey option only**) On the Turnkey Installation Options screen, select Include BAM with LiveCycle if your turnkey installation is on a 64-bit Windows operating system. However, it is recommended that you install Business Activity Monitoring on a separate machine.
- 7. Click **Next**.
- 8. (**Turnkey with preconfigured MySQL only**) Set the MySQL root administrator password and, optionally, type your MySQL port number.

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

 - To verify that the port number is available for use, click **Test**. If the port is available, the installer displays a green check mark. If the port is in use, the installer displays a red X.
 - If the port is in use, type a new port number and repeat the process until you find a port that is available. Clicking **Reset** populates the port box with the default port number 3306.
- 9. (**PDF Generator ES2 and PDF Generator 3D ES2 on Windows Server 2003 only**) In the Administrative Credentials screen, select **Yes, enable native application support for PDF Generator ES2** and enter the user name and password, and click **Next**.

The native application support functionality allows you to convert documents in native applications such as Microsoft Word to Adobe PDF. However, you must install these native applications on the same server as you are installing PDF Generator ES2 and PDF Generator 3D ES2.

Note: PDF Generator 3D ES2 requires native application support to convert 3D files to PDF. Adobe Acrobat® version 9.2 is required to configure support for native Windows applications. For information about installing Acrobat 9.2, see [“Preconfiguration for PDF Generator ES2 and PDF Generator 3D ES2” on page 16](#).

Note: The password for the Microsoft Office user must not contain two consecutive \$ characters (for example, dollar\$\$).

Caution: You must provide the correct administrator name and password; otherwise, LiveCycle ES2 will not run. Use the same administrator account you used in [“Preconfiguration for PDF Generator ES2 and PDF Generator 3D ES2” on page 16](#). This administrator account name must be the same user who installed Microsoft Office on the system and include the Windows Machine Name prefix if that user is not a local account on the target computer. Do not use either *localhost* or the IP address of the Windows Server.

10. Read the Adobe LiveCycle ES2 Server License Agreement and, if you agree, select **Yes**, and then click **Next**.
11. **(Turnkey with preconfigured MySQL only)** Read the MySQL License Agreement and, if you agree, select **Yes**, and then click **Next**.
12. Read the JBoss Application Server License Agreement and, if you agree, select **Yes** and then click **Next**.
13. Review the preinstallation summary, and then click **Install**. The installation program displays the progress of the installation. This process takes several minutes to complete.
14. Review the Release Notes and click **Next**.
15. Review the post-installation summary information and choose one of these options:
 - If no service pack updates are required, ensure that **Start the LiveCycle Configuration Manager** is selected, and then click **Done**.
 - If service pack updates are required or if you are installing LiveCycle Content Services ES2, deselect this option and click **Done** to exit the installer.
 - **(New for 9.5)** If you plan 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. In that case, deselect this option and click **Done** to continue with [Installing and Deploying LiveCycle ES2.5 Solution Accelerators](#) before you run LiveCycle Configuration Manager.

Note: You can run LiveCycle Configuration Manager by using the ConfigurationManager.bat file located in *[LiveCycleES2 root]\configurationManager\bin* folder.

3.2 Install service packs

Before you complete the configuration using LiveCycle Configuration Manager, apply the latest LiveCycle ES2 service packs. These updates are at [LiveCycle Technical Support](#).

3.3 Configuring LiveCycle ES2

► To configure LiveCycle ES2:

1. If you are continuing from the LiveCycle ES2 installation, proceed to step 2; otherwise, navigate to the `[LiveCycleES2 root]\configurationManager\bin` folder and run the `ConfigurationManager.bat` script.
2. On the LiveCycle Configuration Manager Welcome screen, click **Next**.
3. Ensure that **Upgrade from LiveCycle ES2 8.0.x**, **Upgrade from LiveCycle 8.2.1**, and **Install the LiveCycle 7.x Compatibility Layer** are deselected. If you are performing a LiveCycle upgrade you should review the appropriate LiveCycle turnkey upgrade guide.
4. Click **Next**.
5. On the Turnkey Mode screen, select **Express Mode** (recommended for quick deployments) and proceed to the next section.

3.3.1 Configuring LiveCycle ES2 using Express Mode

Express Mode completes the configuration by using default values and limited configuration screens. You can view the configuration progress at any time by clicking View Progress Log.

► To configure LiveCycle ES2 using Express Mode:

1. Select the required modules, and click **Next**.
2. On the Configure Turnkey JBoss SSL screen, add the information to configure the SSL certificate.
Note: JBoss Turnkey only automatically configures SSL for LiveCycle ES2, not including LiveCycle Business Activity Monitor ES2. You must configure SSL for LiveCycle Business Activity Monitor ES2 manually.
3. **(LiveCycle Content Services ES2 only)** On the LiveCycle Content Services ES2 Configuration screen, review the Content Services ES2 configuration information and click **Configure**.
4. **(Content Services ES2 only)** When the configuration for Content Services ES2 is completed, click **Next**.
5. **(LiveCycle Content Services ES2 - CIFS option only)** On the LiveCycle Content Services ES2 CIFS Configuration screen, set the parameters that CIFS requires:

CIFS Server Name: The CIFS server name by which the Content Services repository will be accessible. For example, `cifs-servername`.

Alternate IP Address: IP Address of the CIFS server.

Primary WINS Server IP: The Windows Internet Name Service (WINS) server to dynamically map the IP address to the computer names. It is used to resolve the local domain. It is the IP address of the Primary WINS server. Its value can be found using the `ipconfig/all` command.

Secondary WINS Server IP: The IP address of the secondary WINS server. Its value can be found using `ipconfig/all` command.

BroadCast IP: The broadcast IP address which is used to resolve the local domain.

6. **(LiveCycle Content Services ES2 - CIFS option only)** Click **Configure** to configure Content Services ES2. When complete, click **Next**.

7. **(LiveCycle Content Services ES2 only)** On the **LiveCycle Content Services ES2 Module Configuration** screen, select the AMPS to configure in LiveCycle Content Services ES2. Select F1 to display the help on this topic.
8. **(LiveCycle Content Services ES2 - only)** Click **Configure** to configure Content Services ES2 modules. When complete, click **Next**.
9. **(LiveCycle ES2 Forms, LiveCycle ES2 Output and LiveCycle ES2 PDF Generator only)** This selection allows you to install three service specific sample applications. Forms IVS is a sample application which allows you to verify that LiveCycle Forms is properly deployed and running. Click Include **IVS EARs in deployment set** to install these sample files.

Note: Do not deploy the IVS EAR files in a production environment.
10. Click **Start** to start the express configuration process.
11. When the deployment and express mode configuration are complete, click **Next**.
12. **(Configure Connector for EMC Documentum only)** On this screen, do one of the following tasks:
 - Leave the **Configure Connector for EMC Documentum Content Server** option deselected to manually configure EMC Documentum later, and then click **Next**.
 - Select the option, enter the appropriate version and directory path, and then click **Verify**. When complete, click **Next** and complete the tasks on the following screens:
 - On the EMC Documentum Content Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for EMC Documentum screen, click **Configure Documentum Connector**. When complete, click **Next**.
13. **(Configure Connector for IBM Content Manager only)** On this screen, do one of the following tasks:
 - Leave the **Configure Connector for IBM Content Manager** option deselected to manually configure IBM Content Manager later, and then click **Next**.
 - Select the option, enter the appropriate directory path, and then click **Verify**. When complete, click **Next** and complete the tasks on the following screens:
 - On the IBM Content Manager Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for IBM Content Manager screen, click **Configure IBM Content Manager Connector**. When complete, click **Next**.
 - On the Required Manual Configurations for LiveCycle Connector for IBM Content Manager screen, review and perform the manual steps listed and then click **Next**.
14. **(Configure Connector for IBM FileNet only)** On this screen, do one of the following tasks:
 - Leave the **Configure Connector for IBM FileNet Content Manager** option deselected to manually configure IBM FileNet later, and then click **Next**.

- Select the option, enter the appropriate version and directory path, and then click **Verify**. When complete, click **Next** and complete the following screens:
 - On the IBM FileNet Content Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Connector for IBM FileNet Process Engine screen, enter the appropriate version (if enabled) and directory path, and then click **Verify**. When complete, click **Next**.
 - On the IBM FileNet Process Engine Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for IBM FileNet screen, click **Configure FileNet Connector**. When complete, click **Next**.
 - On the Required Manual Configurations for LiveCycle Connector for IBM FileNet Content Manager screen, review and perform the manual steps listed and then click **Next**.
- 15. **(Configure ECM Connectors only)** On the Verify Configurations screen, do one of the following:
 - If you are configuring the connectors for the first time or have modified any of the configurations on the previous screens, leave the **Restart Application Server** option selected and click **Validate Configurations**. When successfully validated, click **Next**.
 - If you are configuring the connector after LiveCycle ES2 configuration, deselect the option and click **Validate Configurations**. When successfully validated, click **Next**.
- 16. In the **Administrator user credentials for LiveCycle server machine** dialog box, enter the user name and password of a user with administrative privileges on the server machine. Click **Add**.

You must add at least one administrative user for Windows 2008 Server. For Windows 2003 Server, Linux, and Solaris, adding a user is not mandatory. Multithreaded conversions are not supported on the AIX platform.

Note: 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**. Click **OK**. Your changes become effective when the system is restarted.

Note: Users that you add on Linux/Solaris platforms must have `sudo` privileges.
- 17. **(Only when LiveCycle Configuration Manager is running locally on a server machine)** In the **LiveCycle PDFGenerator System Readiness Test** dialog box, click **Start** to validate if the system has been appropriately configured for PDF Generator ES2.
- 18. Review the System Readiness Tool Report and click **Next**.
- 19. **(Reader Extensions ES2 only)** In the **LiveCycle Reader Extensions ES2 Credential Configuration** dialog box, choose one of these options:
 - Browse to the location of your Reader Extensions ES2 Rights credential file, type your credential password as provided by Adobe, type the name for the configured credential that will be displayed in the Reader Extensions ES2 application, click **Configure**, and then click **Next**.
 - To skip this step, select **Configure Later Using LiveCycle Administration Console** and click **Next**. You can configure the Rights credential from LiveCycle Administration Console(**Settings > Trust Store Management > Local Credentials**).
- 20. On the LiveCycle ES2 Samples Import screen, choose one of these options:
 - Click **Import** to import the LiveCycle ES2 Samples and then click **Next**.

- To skip this step, select **Skip LiveCycle ES2 Samples Import** and click **Next**. You can import the samples later by restarting LiveCycle Configuration Manager and choosing to import the samples.

Caution: Do not import the LiveCycle ES2 Samples if either of these options apply to your implementation:

- If you are deploying LiveCycle ES2 to a production system, importing the samples creates users with default passwords, which may be a security concern for your production environment.
 - If you are deploying the services for Connector for EMC Documentum or Connector for IBM FileNet, you can import the samples into the Documentum repository or FileNet object store after you configure, enable, and activate the ECM to be the repository provider by using LiveCycle Administration Console.
21. Review the LiveCycle Configuration Manager task summary list and click **Next**.
 22. Review the Next Steps information. When finished, click **Finish** to exit LiveCycle Configuration Manager.
 23. After you finish configuring LiveCycle ES2, complete the post-configuration activities that apply to your solution implementation. (See [“Post-Deployment Activities” on page 48.](#))
 24. If you reconfigured SSL or you are running LiveCycle Configuration Manager on a server where you have already configured LiveCycle ES2 you must restart JBoss for the SSL configuration to take affect.

3.4 Next steps

If you used LiveCycle Configuration Manager to configure and deploy LiveCycle ES2, you can now complete the post-deployment tasks. (See [“Post-Deployment Activities” on page 48.](#))

4

Installing and Configuring - Custom Mode

When installing LiveCycle you can choose various installation and configuration options to help you customize your turnkey installation. Here are the turnkey installation options:

Custom Mode: Allows you to customize the system configuration and requires some advanced knowledge of LiveCycle ES2, JBoss Application Server and the MySQL database. Custom Mode is recommended if you want to configure your system in a specific way or want more control over the tasks that LiveCycle Configuration Manager completes. This chapter contains all the information to install and configure using turnkey custom mode.

Express Mode: Completes the configuration using defaults and limited configuration screens. Express Mode is recommended if you do not want any special system configuration. Refer to [“Installing and Configuring - Express Mode” on page 18](#) for information to install and configure using turnkey express mode. This chapter contains all the information to install and configure using turnkey express mode.

Express Mode (BAM only): Completes the configuration for LiveCycle ES2 Business Activity Monitor using defaults and limited configuration screens. Express Mode is recommended if you do not want any special system configuration. Refer to [“Installing and Configuring - Express Mode” on page 18](#) for information to install and configure using turnkey express mode.

Partial Turnkey: Completes the configuration of LiveCycle ES2 using a preconfigured JBoss application server. However, this option allows you to configure your own database and point to this database during installation and configuration. Refer to [“Installing and Configuring - Partial Turnkey” on page 35](#) for information to install and configure using Partial turnkey option.

4.1 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.

► **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. Use a tool such as WinMD5 to calculate and compare the MD5 checksum of the downloaded file with the checksum published on the Adobe download web page.

► **Expanding the downloaded archive files:**

If you downloaded the ESD from the Adobe web site, extract the entire `[appserver]_DVD.zip` (Windows) archive file to your computer.

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

4.2 Installing LiveCycle ES2 using Custom Mode

Before you install LiveCycle ES2, make sure you have reviewed the following sections:

- ["System prerequisites" on page 10](#)
- ["Installing LiveCycle ES2 using Custom Mode" on page 26](#)

► **To install LiveCycle ES2 using Turnkey:**

1. Do one of the following:

- From the download site, download and extract the entire JBoss_DVD.zip file (the LiveCycle ES2 Electronic Software Download or ESD file) to your file system. Be sure to keep the directory hierarchy unchanged from the JBoss_DVD.zip file.
 - After extracting the ZIP file, launch the installer using one of the following methods:
 - Navigate to the `livecycle_server` folder and double-click the **run_windows_installer.bat** file. This file will determine the correct LiveCycle ES2 installer and run it.
 - (for 32 bit systems) double-click the **install.exe** file from the `\livecycle_server\9.0\Disk1\InstData\Windows\VM` folder
 - (for 64 bit systems) double-click the **install.exe** file from the `\livecycle_server\9.0\Disk1\InstData\Windows_64bit\VM` folder
- From the JBoss DVD, navigate to the `livecycle_server` folder. Launch the installer using one of the following methods:
 - Navigate to the `livecycle_server` directory and double-click the **run_windows_installer.bat** file. This file will determine the correct LiveCycle ES2 installer and run it.
 - (for 32 bit systems) double-click the **install.exe** file from the `\livecycle_server\9.0\Disk1\InstData\Windows\VM` folder
 - (for 64 bit systems) double-click the **install.exe** file from the `\livecycle_server\9.0\Disk1\InstData\Windows_64bit\VM` folder

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

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

4. Accept the default directory as listed or click **Choose** and navigate to the directory where you want to install the product, and then click **Next**. This directory is referred to as *[LiveCycleES2 root]*.

Note: The installation directory path cannot be longer than 40 characters. Also, the installation directory path cannot have international characters.

5. In the Choose Installation Type screen, select the installation type and click **Next**:

- Select **Turnkey** under Typical as the installation type for a typical turnkey installation. This installs LiveCycle ES2, JBoss 4.2.1 application server, MySQL 5.1.30 database, and JDK 1.6.0_14.
- Select **Partial Turnkey** under Custom if you want to use a database other than the preconfigured MySQL database and JDK. LiveCycle ES2 and JBoss application server are installed by default.
- Select **Manual** if you want a custom install using any database, application server, and JDK. Do not select this option for a turnkey installation. This option is selected if you are installing on a server with JBoss and a database already installed.

Note: For Manual installations, see the *Installing and Deploying LiveCycle ES2* guide for your application server and review all preparatory steps in [Preparing to Install LiveCycle ES2](#) before continuing.

6. On the Turnkey Installation Options screen, select **Include BAM with LiveCycle** if your turnkey installation is on a 64-bit Windows operating system. However, it is recommended that you install Business Activity Monitoring ES2 on a separate machine.

Note: Business Activity Monitoring ES2 is not supported on a 32-bit Windows operating system.

7. Click **Next**.
8. Set the MySQL 5.0 root administrator password and, optionally, type your MySQL port number (for version 5.0). Ensure that you record this password for future reference. MySQL does not support the use of special characters or spaces in the user name or password. Ensure that your password adheres to this restriction.
 - To verify that the port number is available for use, click **Test**. If the port is available, the installer displays a green check mark. If the port is in use, the installer displays a red X.
 - If the port is in use, type a new port number and repeat the process until you find a port that is available. Clicking **Reset** populates the port box with the default port number 3306.
9. (**PDF Generator ES2 and PDF Generator 3D ES2 on Windows Server 2003 only**) In the Administrative Credentials screen, select **Yes, enable native application support for PDF Generator ES2** and enter the user name and password, and click **Next**.

The native application support functionality allows you to convert native applications, such as Microsoft Word, to PDF. However, you must install these native applications on the same server as you are installing PDF Generator ES2 and PDF Generator 3D ES2.

Note: PDF Generator 3D ES2 requires native application support to convert 3D files to PDF. Adobe Acrobat® version 9.2 is required to configure support for native Windows applications. For information about installing Acrobat 9.2, see [“Installing Acrobat for PDF Generator ES2 or PDF Generator 3D ES2” on page 17](#).

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

- Caution:** You must provide the correct administrator name and password; otherwise, LiveCycle ES2 will not run. Use the same administrator account you used in [“Installing Acrobat for PDF Generator ES2 or PDF Generator 3D ES2” on page 17](#). This administrator account must be the same account which was used to install Microsoft Office on the system and include the Windows Machine Name prefix if that user is not a local account on the target computer. Do not use either *localhost* or the IP address of the Windows Server.
10. Read the Adobe LiveCycle ES2 Server License Agreement and, if you agree, select **I accept**, and then click **Next**.
 11. Read the MySQL License Agreement and, if you agree, select **I accept**, and then click **Next**.
 12. Read the JBoss Application Server License Agreement and, if you agree, select **I accept** and then click **Next**.
 13. Review the preinstallation summary, and then click **Install**. The installation program displays the progress of the installation. This process may take several minutes to complete.
 14. Review the Release Notes and click **Next**.

15. Review the post-installation summary information and choose one of these options:
 - If no service pack updates are required, ensure that **Start the LiveCycle Configuration Manager** is selected, and then click **Done**.
 - If service pack updates are required or if you are installing LiveCycle Content Manager, deselect this option and click **Done** to continue with the following sections before you run LiveCycle Configuration Manager.
 - **(New for 9.5)** If you plan 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. In that case, deselect this option and click **Done** to continue with [Installing and Deploying LiveCycle ES2.5 Solution Accelerators](#) before you run LiveCycle Configuration Manager.

Note: If you deselect **Start the LiveCycle Configuration Manager** and exit the installer, you can run LiveCycle Configuration Manager by using the ConfigurationManager.bat file located in `[LiveCycleES2 root]\configurationManager\bin`

4.3 Install service packs

Before you complete the configuration using LiveCycle Configuration Manager, apply the latest LiveCycle ES2 service packs. These updates are available from [LiveCycle Technical Support](#).

4.4 Configuring LiveCycle ES2

► To configure LiveCycle ES2 using Custom Mode:

1. If you are continuing from the LiveCycle ES2 installation, proceed to step 3; otherwise, navigate to the `[LiveCycleES2 root]\configurationManager\bin` folder and run `ConfigurationManager.bat`.
2. When prompted, select the language for LiveCycle Configuration Manager to use, and then click **OK**.
3. On the Welcome screen, click **Next**.
4. On the Upgrade Tasks Selection screen, ensure that none of the upgrade options are selected, and then click **Next**.

Note: The **Install the LiveCycle 7.x Compatibility Layer** option is available for any install or upgrade scenario. Choose this option if you are installing LiveCycle ES2 on a development system on which you plan to use client applications originally developed with LiveCycle 7.x.

5. On the Turnkey Mode screen, select **Custom Mode**. Custom Mode allows you to customize the system configuration and requires some advanced knowledge. You can view the configuration progress at any time by clicking View Progress Log.
6. On the Module Selection screen, ensure that the LiveCycle ES2 modules that you have licensed and want to deploy are selected, and then click **Next**.

Note: You do not need to deploy all of your licensed modules at the same time. You can rerun LiveCycle Configuration Manager later to deploy more modules.

7. **(LiveCycle 7.x compatibility layer only)** On the LiveCycle 7.x compatibility screen, deselect any LiveCycle 7.x product for which you do not want merge the compatibility layer, and then click **Next**.

8. On the Task Selection screen, ensure that all the available tasks are selected, and then click **Next**.
Note: The **Configure Application Server** and **Validate Application Server Configuration** tasks are not available for selection for JBoss turnkey. The JBoss turnkey method does not support these tasks because the application server is already configured for LiveCycle ES2.
9. **(LiveCycle 7.x compatibility layer only)** On the Extract LiveCycle 7.x Configuration Data screen, click **Start** to extract the data from the LiveCycle 7.x EAR files. When the process is finished, click **Next**.
Note: This screen appears only if the LiveCycle 7.x product has extractable data.
10. On the Configure LiveCycle ES2 (1 of 5) screen, click **Configure** and, when the EAR files have been configured, click **Next**. Depending on the number of modules that are included in the configuration, this process may take several minutes to complete. Click View Progress Log to view the status of the EAR file configuration.
11. **(LiveCycle 7.x compatibility layer only)** On the Apply LiveCycle 7.x Compatibility screen, click **Start** to add the compatibility layer to the LiveCycle ES2 EAR files, and then click **Next** to continue.
12. On the Configure LiveCycle ES2 (2 of 5) screen, set the directories that LiveCycle ES2 will use to access fonts and store temporary data that is associated with processing jobs, and then click **Next**.
Tip: Edit the configuration only if you need to change any of the values on this screen.
 - (Optional) To change the default location of the **Adobe server fonts directory**, type the path or browse to the directory.
 - Accept the value in the **Customer fonts directory** box. If you did not specify a location for the customer fonts directory, this box appears empty, and you can choose to specify a new location for your customer fonts. (Accepting the empty box accepts the default font directory location.)
Note: Your right to use fonts provided by parties other than Adobe is governed by the license agreements provided to you by such parties in connection with those fonts, and is not covered under your license to use Adobe software. Adobe recommends that you review and ensure you are in compliance with all applicable non-Adobe license agreements before using non-Adobe fonts with Adobe software, particularly with respect to use of fonts in a server environment.
- (Optional) To change the default location of the **System fonts directory**, type the path or browse to the directory.
- (Optional) To enable FIPS, ensure that **Enable FIPS** is selected. Select this option only if you require the Federal Information Processing Standards (FIPS) to be enforced.
Note: Any modification to the System fonts directory or Enable FIPS values made on this screen will not be configured during the upgrade process. You must manually update your system fonts directories and enable the FIPS option in LiveCycle Administration Console after configuration is complete. See "Core Configurations" in the [LiveCycle ES2 Administration Help](#).
13. On the Configure LiveCycle ES2 (3 of 5) screen, accept the default location for the **Location of the temporary directory**, or enter the path or browse to it. Click **Next** to continue.
14. On the Configure LiveCycle ES2 (4 of 5) screen, accept the default location for the **Global document storage directory path**, or click **Browse** to specify the fully qualified path.
15. On the Configure Persistent Document Storage (5 of 5) screen, select either **Use GDS** or **Use Database**.
16. Click **Configure** to configure the persistent document storage method and when the process is finished, click **Next**.

17. **(LiveCycle Content Services ES2 only)** On the LiveCycle Content Services ES2 Configuration screen, set the parameters that Content Services ES2 will use:
 - Deploy Type:** Select single server for the turnkey installation.
 - Content storage root directory:** The root directory used by Content Services ES2.
 - Enable CIFS:** Select this option to allow mapping to a networked Content Services ES2 space.

Note: The content storage root directory should either point to LiveCycle ES (8.x) content storage root directory or to a new location into which you have copied the contents of LiveCycle ES (8.x) content storage root directory to this new directory created.
18. **(LiveCycle Content Services ES2 only)** Click **Configure** to configure Content Services ES2. When complete, click **Next**.
19. **(LiveCycle Content Services ES2 - CIFS option only)** On the LiveCycle Content Services ES2 CIFS Configuration screen, set the parameters that Content Services ES2 CIFS requires:
 - 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:
 - Windows Native (DLL Based):** Click **Browse** to select the path (usually, `C:\windows\system32`) to where LiveCycle ES2 LiveCycle Configuration Manager will copy the DLL files.
 - 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.
 - Use WINS Server or Broadcast to resolve Local Domain:** Select the method used to resolve 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.
20. **(LiveCycle Content Services ES2 - CIFS option only)** Click **Configure** to configure Content Services ES2. When complete, click **Next**.
21. **(LiveCycle Content Services ES2 only)** On the LiveCycle Content Services ES2 Module Configuration screen, select the AMPS to configure in LiveCycle Content Services ES2. Select F1 to display the help on this topic.
22. **(LiveCycle Content Services ES2 only)** Click **Configure** to configure Content Services ES2 modules. When complete, click **Next**.
23. On the Configure LiveCycle ES2 Summary screen, click **Next**.

24. **(If you selected Configure SSL only)** On the Configure turnkey JBoss SSL screen, enter all the required values and click **Configure JBoss SSL**, or select the **Skip configuration** option, and then click **Next**.
25. **(Forms ES2, Output ES2 and PDF Generator ES2 only)** Select the **Include IVS EARs in deployment set** option to install three service specific sample applications.
For example, Forms IVS is a sample application that allows you to verify that Forms ES2 is properly deployed and running.
Note: Do not deploy the IVS EAR files in a production environment.
26. **(PDF Generator ES2 only)** On the Configure Acrobat For LiveCycle PDF Generator ES2 screen, click **Configure** to run the configuration script. When complete, click **Next**.
27. On the Deploy LiveCycle ES2 EARs screen, select the EAR files you want to deploy to JBoss, click **Deploy** and when complete, click **Next**.
28. On the LiveCycle ES2 Database Initialization screen, verify the host and port information, and then click **Initialize**. The database initialization task creates tables in the database, adds default data to the tables, and creates basic roles in the database. When the initialization completes successfully, click **Next**.
29. **(Business Activity Monitoring ES2 only)** On the Deploy LiveCycle Business Activity Monitoring ES2 EAR screen, select the EAR file, click **Deploy** and when complete, click **Next**.
30. **(Business Activity Monitoring ES2 only)** On the Initialize Business Activity Monitoring ES2 screen, provide the information for the following fields:
 - Database type:** The database on which BAM Server metadata is running. For the turnkey installation this value should be *mysql*.
 - BAM Host:** The name or IP address of the computer that hosts the application server on which BAM Server is running.
 - BAM HTTP Port:** The HTTP service port that the BAM server uses (for example 8080) for JBoss.
31. On the LiveCycle ES2 Server Information screen, type the LiveCycle ES (8.x) administrator password, and click **Verify Server Connection**. When the validation is complete, click **Next**.
Caution: By default, the LiveCycle ES2 User ID is `administrator` and the password is `password`. After completing the initial configuration, you should change the default password in LiveCycle Administration Console. (See ["Installing LiveCycle ES2.5 Solution Accelerators" on page 51.](#))
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 that 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. **(Business Activity Monitoring ES2 only)** Click **Initialize** to begin the initialization process and, when initialization is complete, click **Next** to continue.
33. **(Central Migration service only)** Select **Include Central Migration service in deployment** if you are licensed to configure LiveCycle ES2 with Central Pro or Web Output Pak, and then click **Next**.
34. On the LiveCycle Component Deployment screen, click **Deploy**. The components deployed at this time are Java archive files that plug into the LiveCycle ES2 service container for purposes of deploying, orchestrating, and executing services. When the deployment has completed successfully, click **Next**.

35. On the LiveCycle Component Deployment Validation screen, click **Validate**. LiveCycle Configuration Manager validates that the Java archive files are deployed to and running on the LiveCycle ES2 server. When the validation is completed successfully, click **Next**.
36. On the Configure LiveCycle Components screen, select the modules to configure, and then click **Next**. The screens that appear next depend on your selection on this screen.
37. **(Configure Connector for EMC Documentum only)** On this screen, do one of the following tasks:
 - Leave the **Configure Connector for EMC Documentum Content Server** option deselected to manually configure EMC Documentum later, and then click **Next**.
 - Select the option, enter the appropriate version and directory path, and then click **Verify**. When complete, click **Next** and complete the tasks on the following screens:
 - On the EMC Documentum Content Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for EMC Documentum screen, click **Configure Documentum Connector**. When complete, click **Next**.
38. **(Configure Connector for IBM Content Manager only)** On this screen, do one of the following tasks:
 - Leave the **Configure Connector for IBM Content Manager** option deselected to manually configure IBM Content Manager later, and then click **Next**.
 - Select the option, enter the appropriate directory path, and then click **Verify**. When complete, click **Next** and complete the tasks on the following screens:
 - On the IBM Content Manager Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for IBM Content Manager screen, click **Configure IBM Content Manager Connector**. When complete, click **Next**.
 - On the Required Manual Configurations for LiveCycle Connector for IBM Content Manager screen, review and perform the manual steps listed and then click **Next**.
39. **(Configure Connector for IBM FileNet only)** On this screen, do one of the following tasks:
 - Leave the **Configure Connector for IBM FileNet Content Manager** option deselected to manually configure IBM FileNet later, and then click **Next**.
 - Select the option, enter the appropriate version and directory path, and then click **Verify**. When complete, click **Next** and complete the following screens:
 - On the IBM FileNet Content Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Connector for IBM FileNet Process Engine screen, enter the appropriate version (if enabled) and directory path, and then click **Verify**. When complete, click **Next**.
 - On the IBM FileNet Process Engine Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for IBM FileNet screen, click **Configure FileNet Connector**. When complete, click **Next**.
 - On the Required Manual Configurations for LiveCycle Connector for IBM FileNet Content Manager screen, review and perform the manual steps listed and then click **Next**.
40. **(Configure ECM Connectors only)** On the Verify Configurations screen, do one of the following:

- If you are configuring the connectors for the first time or have modified any of the configurations on the previous screens, leave the **Restart Application Server** option selected and click **Validate Configurations**. When successfully validated, click **Next**.
- If you are configuring the connector after LiveCycle ES2 configuration, deselect the option and click **Validate Configurations**. When successfully validated, click **Next**.

41. **(LiveCycle PDF Generator ES2 only)** On the Configure Acrobat For LiveCycle PDF Generator ES2 screen, click **Configure** to run the configuration script. When complete, click **Next**.

Note: This screen appears only when LiveCycle Configuration Manager is running locally on a server machine.

42. On the LiveCycle ES2 Server Information screen, type the password for the LiveCycle ES2 server in the **Password** box. If this is your first time installing LiveCycle ES2, type `password`.
43. **(Configure LiveCycle 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 machine. Click **Add**.

You must add at least one administrative user for Windows 2008 Server. For Windows 2003 Server, Linux, and Solaris, adding a user is not mandatory. Multi-threaded conversions are not supported on the AIX platform.

Note: 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**. Click **OK**. Your changes become effective when the system is restarted.

Note: Users that you add on Linux/Solaris platforms must have `sudo` privileges.

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

Note: If no credential was configured on your LiveCycle ES (8.x) system, then the following screen appears instead.

46. **(LiveCycle Reader Extensions ES2 only)** On this screen, specify the following 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 the credential: The name (or alias) that LiveCycle Configuration Manager gives the credential when it is configured. If you are installing Reader Extensions ES2 for the first time, this name can be any name. If you are upgrading from Reader Extensions ES2, you must use the name of your LiveCycle 7.x Rights credential for LiveCycle ES2. If you use a different name, you

will have to modify code in existing custom applications or, in a future LiveCycle ES2 release, your existing LiveCycle 7.x QPACs.

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

Tip: 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 the deployment is completed. (After you log in to LiveCycle Administration Console, click **Settings > Trust Store Management > Local Credentials**.)

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

47. (Optional) On the LiveCycle ES2 Samples Import screen, do one of the following:

- Click **Import** to import the LiveCycle ES2 Samples, and then click **Next**.
- To skip this step, select **Skip LiveCycle ES2 Samples Import** and click **Next**. You can import the samples at a later date by restarting LiveCycle Configuration Manager and choosing to import the samples.

Caution: Do not import the LiveCycle ES2 Samples if either of these options apply to your situation:

- If you are deploying LiveCycle ES2 to a production system, importing the samples creates users with default passwords, which may be a security concern for your production environment.

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

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

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

Note: After you configure LiveCycle ES2, complete the post-configuration activities that apply to your solution implementation. (See [“Post-Deployment Activities” on page 48](#).)

51. If you configured SSL, you must restart JBoss for the SSL configuration to take affect.

4.5 Next steps

If you used LiveCycle Configuration Manager to configure and deploy LiveCycle ES2, you can now complete the post-deployment tasks. (See [“Post-Deployment Activities” on page 48](#).)

5

Installing and Configuring - Partial Turnkey

When installing LiveCycle ES2, you can choose various installation and configuration options to help you customize your turnkey installation. Here are the turnkey installation options:

Partial Turnkey: Completes the configuration of LiveCycle ES2 using a preconfigured JBoss application server. However, this option allows you to configure your own database and point to this database during installation and configuration. This chapter contains all the information to install and configure using the Partial turnkey option.

Express Mode: Completes the configuration using defaults and limited configuration screens. Express Mode is recommended if you do not want any special system configuration. Refer to [“Installing and Configuring - Express Mode” on page 18](#) for information to install and configure using turnkey express mode. A sub option of the express mode is:

- **Express Mode (BAM only):** Completes the configuration for LiveCycle Business Activity Monitoring ES2 using defaults and limited configuration screens. Express Mode is recommended if you do not want any special system configuration. Refer to [“Installing and Configuring - Express Mode” on page 18](#) for information to install and configure using turnkey express mode.

Custom Mode: Allows you to customize the system configuration and requires some advanced knowledge of LiveCycle ES2, JBoss Application Server and the MySQL database. Custom Mode is recommended if you want to configure your system in a specific way or want more control over the tasks that LiveCycle Configuration Manager completes. Refer to [“Installing and Configuring - Custom Mode” on page 25](#) for information to install and configure using the Partial Turnkey mode.

5.1 Installing LiveCycle ES2 using Partial Turnkey option

Before you install LiveCycle ES2, make sure you have reviewed the following sections:

- [“System prerequisites” on page 10](#)
- [“Partial turnkey database preconfiguration” on page 14](#)

► **To install LiveCycle ES2 using Turnkey:**

1. Do one of the following:

- From the download site, download and extract the JBoss_DVD.zip file (the LiveCycle ES2 Electronic Software Distribution or ESD file) to your file system. Be sure to keep the directory hierarchy unchanged from the JBoss_DVD.zip file.
 - After the JBoss_DVD.zip file is extracted, extract the following zipped directories: \additional, \livecycle_server, and \third_party.
 - After extracting the zipped directory files, you can launch the installer using one of the following methods:
 - Navigate to the \livecycle_server\9.0\ livecycle_server folder and double-click the **run_windows_installer.bat** file. This file will determine the correct LiveCycle ES2 installer and run it.
 - (for 32-bit systems) double-click the **install.exe** file from the \livecycle_server\9.0\Disk1\InstData\Windows\VM folder
 - (for 64-bit systems) double-click the **install.exe** file from the \livecycle_server\9.0\Disk1\InstData\Windows_64bit\VM folder
 - From the JBoss DVD, navigate to the \livecycle_server\9.0 folder. You can launch the installer using one of the following methods:
 - Navigate to the \livecycle_server\9.0\ livecycle_server folder and double-click the **run_windows_installer.bat** file. This file will determine the correct LiveCycle ES2 installer and run it.
 - (for 32-bit systems) double-click the **install.exe** file from the \livecycle_server\9.0\Disk1\InstData\Windows\VM folder
 - (for 64-bit systems) double-click the **install.exe** file from the \livecycle_server\9.0\Disk1\InstData\Windows_64bit\VM folder
2. When prompted, select the language for installation, and then click **OK**.
 3. On the Introduction screen, click **Next**.
 4. Accept the default directory as listed or click **Choose** and navigate to the directory where you want to install the product, and then click **Next**. This directory is referred to as [*LiveCycleES2 root*].

Note: The installation directory path cannot be longer than 40 characters. Also, the installation directory path cannot have international characters.
 5. In the Choose Installation Type screen, select the installation type and click **Next**:
 - Select **Partial Turnkey** under Custom if you want to use a database other than the preconfigured MySQL database. LiveCycle ES2, JBoss application server, and Sun JDK are installed by default.
 6. On the Turnkey Installation Options screen, select one of the following options:
 - LiveCycle ES2 and LiveCycle Business Activity Monitoring ES2

Note: Selecting this option results in a separate JBoss installation being installed to support Business Activity Monitoring ES2.

 - LiveCycle ES2 only
 - LiveCycle Business Activity Monitoring ES2 only
 7. In the Database section:
 - If installing a new database: select **Include the turnkey MySQL (MySQL 5.0)**.

- If using existing database: select **Use my Database** and select the database type you are using.
8. Click **Next**.
 9. **(PDF Generator ES2 and PDF Generator 3D ES2 on Windows Server 2003 only)** In the Administrative Credentials screen, select **Enable native application support for PDF Generator ES2** and enter the user name and password, and click **Next**.

The native application support functionality allows you to convert native applications, such as Microsoft Word, to PDF. However, you must install these native applications on the same server as you are installing PDF Generator ES2 and PDF Generator 3D ES2.

Note: If you are deploying LiveCycle ES2 to a cluster, you must select **No** and manually configure each node in the cluster. (Turnkey does not support deployment into a cluster. Refer to the application server-specific LiveCycle ES2 clustering guide.)

Note: PDF Generator 3D ES2 requires native application support to convert 3D files to PDF. Adobe Acrobat® version 9.2 is required to configure support for native Windows applications. For information about installing Acrobat 9.2, see [“Preconfiguration for PDF Generator ES2 and PDF Generator 3D ES2” on page 16](#).

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

Caution: You must provide the correct administrator name and password; otherwise, LiveCycle ES2 will not run. Use the same administrator account you used in [“Preconfiguration for PDF Generator ES2 and PDF Generator 3D ES2” on page 16](#). This administrator account name must be the same user who installed Microsoft Office on the system and include the Windows Machine Name prefix if that user is not a local account on the target computer. Do not use either *localhost* or the IP address of the Windows Server.
 10. Read the Adobe LiveCycle ES2 Server License Agreement and, if you agree, select **Yes**, and then click **Next**.
 11. Read the JBoss Application Server License Agreement and, if you agree, select **Yes** and then click **Next**.
 12. Review the preinstallation summary, and then click **Install**. The installation program displays the progress of the installation. This process may take several minutes to complete.
 13. Review the Release Notes and click **Next**.
 14. Review the post-installation summary information and choose one of these options:
 - If no service pack updates are required, ensure that **Start the LiveCycle Configuration Manager** is selected, and then click **Done**.
 - If service pack updates are required or if you are installing LiveCycle Content Services ES2, deselect this option and click **Done** to continue with the following sections before you run LiveCycle Configuration Manager.
 - **(New for 9.5)** If you plan 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. In that case, deselect this option and click **Done** to continue with [Installing and Deploying LiveCycle ES2.5 Solution Accelerators](#) before you run LiveCycle Configuration Manager.

Note: If you deselect **Start the LiveCycle Configuration Manager** and exit the installer, you can run LiveCycle Configuration Manager by using the `ConfigurationManager.bat` file located in `[LiveCycleES2 root]\configurationManager\bin`

5.2 Install service packs

Before you complete the configuration using LiveCycle Configuration Manager, apply the latest LiveCycle ES2 service packs. These updates are at [LiveCycle Technical Support](#).

5.3 (Business Activity Monitoring) Configuring BAM data source

If you selected **LiveCycle ES2 and LiveCycle Business Activity Monitoring ES2** or **Business Activity Monitoring ES2** on the Turnkey Installation Options screen, and you selected **Use my Database**, you must complete these steps before proceeding with the LiveCycle Configuration Manager.

1. Ensure you have created databases for BAM server. If not, please refer to section *Creating and configuring the BAM Server metadata database and geography database* in [Installing and Deploying LiveCycle ES2 for JBoss](#).
2. **(MySQL Only)** For BAM server, if the LiveCycle ES2 server is a remote server and database is MySQL, you need to grant remote access privileges to BAM server. In the MySQL command, type:

```
grant all privileges on *.* to 'root@remoteIP' identified by 'password';  
flush privileges;
```

Where *remoteIP* is the database server IP address, and the user/password are *root/password*.
3. To configure data sources for BAM server:
 - Ensure that you have installed the drivers for the types of databases you are using. Refer to section *Installing database drivers on JBoss Application Server for BAM Server* in [Installing and Deploying LiveCycle ES2 for JBoss](#).
 - Modify BAM datasource file `adobe-ds.xml`. Refer to section *Configuring the BAM Server datasource for databases* in [Installing and Deploying LiveCycle ES2 for JBoss](#).

5.4 Configuring LiveCycle ES2

► **To configure LiveCycle ES2:**

1. If you are continuing from the LiveCycle ES2 installation, proceed to step 2; otherwise, navigate to the `[LiveCycleES2 root]\configurationManager\bin` folder and run `ConfigurationManager.bat`.
2. On the LiveCycle Configuration Manager Welcome screen, click **Next**.
3. Ensure that **Upgrade from LiveCycle ES2 8.0.x**, **Upgrade from LiveCycle 8.2.1**, and **Install the LiveCycle 7.x Compatibility Layer** are deselected.
4. Click **Next**.
5. On the Partial Turnkey Installation screen, click Next.

6. On the Datasource configuration screen, configure the database connection string and click **Test Database Connection** to ensure the connection is configured properly.
7. On the Application Server configuration screen, click **Configure**.
8. Click **Next**.
9. The Partial turnkey option offers you two options to complete your configuration:
 - Express mode - See [“Configuring LiveCycle ES2 using Partial Turnkey Express mode” on page 39](#)
 - Custom mode - See [“Configuring LiveCycle ES2 using Partial Turnkey Custom Mode” on page 42](#)

5.4.1 Configuring LiveCycle ES2 using Partial Turnkey Express mode

Express Mode completes the configuration by using defaults and limited configuration screens.

You can view the configuration progress at any time by clicking View Progress Log from LiveCycle Configuration Manager.

► To configure LiveCycle ES2 using Express Turnkey mode (Partial):

1. Review the list of modules, ensure the appropriate options are selected, and click **Next**.
2. **(LiveCycle ES2 Connectors for ECM only)** Review the LiveCycle ES2 connector configuration information and click **Next**.
3. **(LiveCycle Content Services ES2 only)** On the LiveCycle Content Services ES2 Configuration screen, review the Content Services ES2 configuration information and click **Configure**.
4. **(Content Services ES2 only)** When the configuration for Content Services ES2 is completed, click **Next**.
5. **(LiveCycle Content Services ES2 - CIFS option only)** On the LiveCycle Content Services ES2 CIFS Configuration screen, set the parameters that Content Services ES2 CIFS requires:
 - CIFS Server Name:** The CIFS server name by which the Content Services repository will be accessible. By default, the name of the server on which you are installing LiveCycle ES2 is populated in this field, appended with “a”. For example, if the servername is `lcserver`, the CIFS Server Name field is populated as `lcservera`.
 - Alternate IP Address:** IP address of the CIFS server.
 - Primary WINS Server IP:** The Windows Internet Name Service (WINS) server to dynamically map the IP address to the computer names. It is used to resolve the local domain. It is the IP address of the Primary WINS server. Its value can be found using the `ipconfig/all` command.
 - Secondary WINS Server IP:** The IP address of the secondary WINS server. Its value can be found using `ipconfig/all` command.
 - BroadCast IP:** The broadcast IP address which is used to resolve the local domain.
6. **(LiveCycle Content Services ES2 - CIFS option only)** Click **Configure** to configure Content Services ES2. When complete, click **Next**.
7. **(LiveCycle Content Services ES2 only)** On the **LiveCycle Content Services ES2 Module Configuration** screen, select the AMPS to configure in LiveCycle Content Services ES2. Select F1 to display the help on this topic.

8. **(LiveCycle Content Services ES2 only)** Click **Configure** to configure Content Services ES2 modules. When complete, click **Next**.
9. **(LiveCycle ES2 Forms, LiveCycle ES2 Output and LiveCycle ES2 PDF Generator only)** This selection allows you to install three service specific sample applications. Forms IVS is a sample application which allows you to verify that LiveCycle Forms is properly deployed and running. Click Include **IVS EARs in deployment set** to install these sample files.

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

10. Click **Start** to start the express configuration process.
11. When the deployment and express mode configuration are complete, click **Next**.
12. **(If PDF Generator ES2 is included in the components selected for installation)** In the **Configure Acrobat For LiveCycle PDFGenerator** dialog box, click **Configure**. After Acrobat is configured, click **Next**.

Note: This dialog box appears only when LiveCycle Configuration Manager is running locally on a server machine.

13. In the **Administrator user credentials for LiveCycle server machine** dialog box, enter the user name and password of a user with administrative privileges on the server machine. Click **Add**.

You must add at least one administrative user for Windows 2008 Server. For Windows 2003 Server, Linux, and Solaris, adding a user is not mandatory. Multithreaded conversions are not supported on the AIX platform.

Note: 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**. Click **OK**. Your changes become effective when the system is restarted.

Note: Users that you add on Linux/Solaris platforms must have `sudo` privileges.

14. **(Only when LiveCycle Configuration Manager is running locally on a server machine)** In the **LiveCycle PDFGenerator System Readiness Test** dialog box, click **Start** to validate if the system has been appropriately configured for PDF Generator ES2.
15. Review the System Readiness Tool Report and click **Next**.
16. If you installed Reader Extensions ES2, choose one of these options:
 - Browse to the location of your Reader Extensions ES2 Rights credential file, type your credential password as provided by Adobe, type the name for the configured credential that will be displayed in the Reader Extensions ES2 application, click **Configure**, and then click **Next**.
 - To skip this step and complete the Rights credential configuration by using LiveCycle Administration Console, select **Configure Later Using LiveCycle Administration Console** and click **Next**. To configure the Rights credential at a later time, log in to LiveCycle Administration Console and click **Settings > Trust Store Management > Local Credentials**.
17. On the LiveCycle ES2 Samples Import screen, choose one of these options:
 - Click **Import** to import the LiveCycle ES2 Samples and then click **Next**.

- To skip this step, select **Skip LiveCycle ES2 Samples Import** and click **Next**. You can import the samples at a later date by restarting LiveCycle Configuration Manager and choosing to import the samples.

Caution: Do not import the LiveCycle ES2 Samples if either of these options apply to your situation:

- If you are deploying LiveCycle ES2 to a production system. Importing the samples creates users with default passwords, which may be a security concern for your production environment.
- If you are deploying the services for Connector for EMC Documentum or Connector for IBM FileNet and you want to import LiveCycle ES2 Samples into the Documentum repository or FileNet object store, skip this step. You can import the samples after you configure, enable, and activate the ECM to be the repository provider by using LiveCycle Administration Console. (See [“Advanced Configuration Activities” on page 73.](#))

18. Review the LiveCycle Configuration Manager task summary list and click **Next**.
19. Review the Next Steps information. When finished, click **Finish** to exit LiveCycle Configuration Manager.
20. After you finish configuring LiveCycle ES2, you must complete the post-configuration activities that apply to your solution implementation. (See [“Post-Deployment Activities” on page 48.](#))

After you configure LiveCycle ES2, complete the post configuration for BAM settings. (See [“\(Business Activity Monitoring\) Configure BAM settings” on page 47.](#))

At this point, the installation of LiveCycle ES2 is complete.

5.4.2 Configuring LiveCycle ES2 using Partial Turnkey Custom Mode

Custom Mode allows you to customize the system configuration and requires some advanced knowledge. You can view the configuration progress at any time by clicking View Progress Log.

► **To configure LiveCycle ES2 using Custom Mode:**

1. On the Turnkey Mode screen, select **Custom Mode**. Custom Mode allows you to customize the system configuration and requires some advanced knowledge. You can view the configuration progress at any time by clicking View Progress Log.

2. On the Solution Component Selection screen, ensure that the LiveCycle ES2 modules that you have licensed and want to deploy are selected, and then click **Next**.

Note: You do not need to deploy all of your licensed components at the same time. You can rerun LiveCycle Configuration Manager later to deploy more modules.

3. **(LiveCycle 7.x Compatibility Layer only)** On the LiveCycle 7.x compatibility screen, deselect any LiveCycle 7.x product for which you do not want merge the compatibility layer, and then click **Next**.

4. On the Task Selection screen, ensure that all the available tasks are selected, and then click **Next**.

Note: The **Configure Application Server** and **Validate Application Server Configuration** tasks are not available for selection for JBoss turnkey. The JBoss turnkey method does not support these tasks because the application server is already configured for LiveCycle ES2.

5. **(LiveCycle 7.x Compatibility Layer only)** On the Extract LiveCycle 7.x Configuration Data screen, click **Start** to extract the data from the LiveCycle 7.x EAR files. When the process is finished, click **Next**.

6. On the Configure LiveCycle ES2 (1 of 5) screen, click **Configure** and, when the EAR files have been configured, click **Next**. Depending on the number of modules that are included in the configuration, this process may take several minutes to complete. Click **View Progress Log** to view the status of the EAR file configuration.

7. **(LiveCycle 7.x Compatibility Layer only)** On the Apply LiveCycle 7.x compatibility screen, click **Start** to merge the compatibility layer with the LiveCycle ES2 EAR files. When the process is finished, click **Next**.

8. On the Configure LiveCycle ES2 (2 of 5) screen, set the directories that LiveCycle ES2 will use to access fonts and store temporary data that is associated with processing jobs, and then click **Next**.

Tip: Click **Edit configurations** only if you need to change any of the values on this screen.

- (Optional) To change the default location of the **Adobe server fonts directory**, type the path or browse to the directory.
- Accept the value in the **Customer fonts directory** box. If you did not specify a location for the customer fonts directory, this box appears empty, and you can choose to specify a new location for your customer fonts. (Accepting the empty box accepts the default font directory location.)

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

- (Optional) To change the default location of the **System fonts directory**, type the path or browse to the directory.

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

Note: You can also configure FIPS in the LiveCycle Administration Console after deploying LiveCycle ES2. After logging into LiveCycle Administration Console, click **Settings > Core System > Core Configurations**.

9. On the Configure LiveCycle ES2 (3 of 5) screen, accept the default location for the **Location of the temporary directory**, or click **Edit configurations** to specify the fully qualified path. If editing, enter the path or browse to it. Click **Next** to continue.
10. On the Configure LiveCycle ES2 (4 of 5) screen, accept the default location for the **Global document storage directory path**, or click **Edit configurations** to specify the fully qualified path. If editing, enter the path or browse to it.
11. On the Configure Persistent Document Storage (5 of 5) screen, select either **Use GDS** or **Use Database**.
12. Click **Configure** to configure the GDS directory and when the process is finished, click **Next**.
13. **(LiveCycle Content Services ES2 only)** On the LiveCycle Content Services ES2 Configuration screen, set the parameters that Content Services ES2 will use:
 - Deploy Type:** Select single server for the turnkey installation.
 - Content storage root directory:** The root directory used by Content Services ES2.
 - Enable CIFS:** Select this option to allow mapping to a networked Content Services ES2 space.
14. **(LiveCycle Content Services ES2 only)** Click **Configure** to configure Content Services ES2. When complete, click **Next**.
15. **(LiveCycle Content Services ES2 - CIFS option only)** On the LiveCycle Content Services ES2 CIFS Configuration screen, set the parameters that Content Services ES2 CIFS requires:
 - CIFS Server Name:** The CIFS server name by which the Content Services repository will be accessible. By default, the name of the server on which you are installing LiveCycle ES2 is populated in this field, appended with "a". For example, if the servername is `lcservers`, the CIFS Server Name field is populated as `lcserversa`.
 - Alternate IP Address:** IP Address of the CIFS server.
 - Primary WINS Server IP:** The Windows Internet Name Service (WINS) server to dynamically map the IP address to the computer names. It is used to resolve the local domain. It is the IP address of the Primary WINS server. Its value can be found using the `ipconfig/all` command.
 - Secondary WINS Server IP:** The IP address of the secondary WINS server. Its value can be found using the `ipconfig/all` command.
 - BroadCast IP:** The broadcast IP address which is used to resolve the local domain.
16. **(LiveCycle Content Services ES2 - CIFS option only)** Click **Configure** to configure Content Services ES2. When complete, click **Next**.
17. **(LiveCycle Content Services ES2 only)** On the **LiveCycle Content Services ES2 Module Configuration** screen, select the AMPs to configure in LiveCycle Content Services ES2. Select F1 to display the help on this topic.
18. **(LiveCycle Content Services ES2 only)** Click **Configure** to configure Content Services ES2 modules. When complete, click **Next**.

19. On the Configure LiveCycle ES2 Summary screen, click **Next**.
20. **(Connectors for ECM only)** Review the LiveCycle ES2 connector configuration information, perform the necessary steps, and then click **Next**.
21. **(If you selected Configure SSL only)** On the Configure turnkey JBoss SSL screen, enter all the required values and click **Configure JBoss SSL**, or select the **Skip configuration** option, and then click **Next**.
22. **(LiveCycle Forms ES2, LiveCycle Output ES2 and LiveCycle PDF Generator ES2 only)** Select the **Include IVS EARs in deployment set** option to install three service specific sample applications.
For example, Forms IVS is a sample application that allows you to verify that Forms ES2 is properly deployed and running.
Note: Do not deploy the IVS EAR files in a production environment.
23. On the Deploy LiveCycle ES2 EARs screen, select the EAR files you want to deploy to JBoss, click **Deploy** and when complete, click **Next**.
24. On the LiveCycle ES2 Server Information screen, enter the required values, click **Verify Server Connection**, and then click **Next**.
Caution: By default, the LiveCycle ES2 User ID is `administrator` and the password is `password`. After completing the initial configuration, you should change the default password in LiveCycle Administration Console. (See ["Installing LiveCycle ES2.5 Solution Accelerators" on page 51.](#))
25. **(Business Activity Monitoring only)** On the Initialize Business Activity Monitoring screen, provide the information for the following fields:
 - Database type:** The database on which BAM Server metadata is running.
 - BAM Host:** The name or IP address of the computer that hosts the application server on which BAM Server is running.
 - BAM HTTP Port:** The HTTP service port that the BAM server uses (for example 8080 for JBoss).
26. **(Business Activity Monitoring only)** Click **Initialize** to begin the initialization process and, when initialization is complete, click **Next** to continue.
27. **(Business Activity Monitoring only)** Click **Verify Server Connection** to ensure that the information for the default JBoss server is correct. This information will be used when you log in to LiveCycle Administration Console. When the test completes successfully, click **Next**.
28. **(Central Migration service only)** Select **Include Central Migration service in deployment** if you are licensed to configure LiveCycle ES2 with Central Pro or Web Output Pak, and then click **Next**.
29. On the LiveCycle Component Deployment screen, click **Deploy**. The components deployed at this time are Java archive files that plug into the LiveCycle ES2 service container for purposes of deploying, orchestrating, and executing services. When the deployment has completed successfully, click **Next**.
30. On the LiveCycle Component Deployment Validation screen, click **Validate**. LiveCycle Configuration Manager validates that the Java archive files are deployed to and running on the LiveCycle ES2 server. When the validation is completed successfully, click **Next**.
31. On the Configure LiveCycle Components screen, select the modules to configure, and then click **Next**. The screens that appear next depend on your selection on this screen.
32. **(Configure Connector for EMC Documentum only)** On this screen, do one of the following tasks:

- Leave the **Configure Connector for EMC Documentum Content Server** option deselected to manually configure EMC Documentum later, and then click **Next**.
 - Select the option, enter the appropriate version and directory path, and then click **Verify**. When complete, click **Next** and complete the tasks on the following screens:
 - On the EMC Documentum Content Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for EMC Documentum screen, click **Configure Documentum Connector**. When complete, click **Next**.
33. **(Configure Connector for IBM Content Manager only)** On this screen, do one of the following tasks:
- Leave the **Configure Connector for IBM Content Manager** option deselected to manually configure IBM Content Manager later, and then click **Next**.
 - Select the option, enter the appropriate directory path, and then click **Verify**. When complete, click **Next** and complete the tasks on the following screens:
 - On the IBM Content Manager Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for IBM Content Manager screen, click **Configure IBM Content Manager Connector**. When complete, click **Next**.
 - On the Required Manual Configurations for LiveCycle Connector for IBM Content Manager screen, review and perform the manual steps listed and then click **Next**.
34. **(Configure Connector for IBM FileNet only)** On this screen, do one of the following tasks:
- Leave the **Configure Connector for IBM FileNet Content Manager** option deselected to manually configure IBM FileNet later, and then click **Next**.
 - Select the option, enter the appropriate version and directory path, and then click **Verify**. When complete, click **Next** and complete the following screens:
 - On the IBM FileNet Content Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Connector for IBM FileNet Process Engine screen, enter the appropriate version (if enabled) and directory path, and then click **Verify**. When complete, click **Next**.
 - On the IBM FileNet Process Engine Server Settings screen, enter the required values and then click **Next**.
 - On the Configure Adobe Connector for IBM FileNet screen, click **Configure FileNet Connector**. When complete, click **Next**.
 - On the Required Manual Configurations for LiveCycle Connector for IBM FileNet Content Manager screen, review and perform the manual steps listed and then click **Next**.
35. **(Configure ECM Connectors only)** On the Verify Configurations screen, do one of the following:
- If you are configuring the connectors for the first time or have modified any of the configurations on the previous screens, leave the **Restart Application Server** option selected and click **Validate Configurations**. When successfully validated, click **Next**.
 - If you are configuring ECM Connectors after the LiveCycle ES2 configuration, deselect the option and click **Validate Configurations**. When successfully validated, click **Next**.
36. **(Configure LiveCycle PDF Generator ES2 only)** On the Configure Acrobat For LiveCycle PDF Generator ES2 screen, click **Configure** to run the configuration script. When complete, click **Next**.

Note: This screen appears only when LiveCycle Configuration Manager is running locally on a server machine.

37. On the LiveCycle ES2 Server Information screen, type the password for the LiveCycle ES2 server in the **Password** box. If this is your first time installing LiveCycle ES2, type `password`.

38. 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 machine. Click **Add**.

You must add at least one administrative user for Windows 2008 Server. For Windows 2003 Server, Linux, and Solaris, adding a user is not mandatory. Multi-threaded conversions are not supported on the AIX platform.

Note: 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**. Click **OK**. Your changes become effective when the system is restarted.

Note: Users that you add on Linux/Solaris platforms must have `sudo` privileges.

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

40. Review the System Readiness Tool Report and click **Next**.

41. (**Configure LiveCycle Reader Extensions ES2 credential only**) On this screen, specify the following details that are associated with the Rights credential that activates the solution component services:

LiveCycle Reader Extensions ES2 Rights credential: The path and file name of the Rights credential (.pfx or .p12 file type).

LiveCycle Reader Extensions ES2 Rights credential password: The password that is associated with the credential. This password was provided with the credential file.

Name for the configured Rights credential: The name (or alias) that LiveCycle Configuration Manager gives the credential when it is configured. If you are installing Reader Extensions ES2 for the first time, this name can be any name. If you are upgrading from Reader Extensions ES2, you must use the name of your LiveCycle 7.x Rights credential for LiveCycle ES2. If you use a different name, you will have to modify code in existing custom applications or, in a future LiveCycle ES2 release, your existing LiveCycle 7.x QPACs.

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

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

42. On the LiveCycle ES2 Samples Import screen, do one of the following:

- Click **Import** to import the LiveCycle ES2 Samples, and then click **Next**.
- To skip this step, select **Skip LiveCycle ES2 Samples Import** and click **Next**. You can import the samples at a later date by restarting LiveCycle Configuration Manager and choosing to import the samples.

Caution: Do not import the LiveCycle ES2 Samples if either of these options apply to your situation:

- If you are deploying LiveCycle ES2 to a production system, importing the samples creates users with default passwords, which may be a security concern for your production environment.
- If you are deploying the services for Connector for EMC Documentum or Connector for IBM FileNet and you want to import LiveCycle ES2 Samples into the Documentum repository or FileNet object store, skip this step. You can import the samples after you configure, enable, and activate the ECM to be the repository provider by using LiveCycle Administration Console.

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

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

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

Note: After you configure LiveCycle ES2, complete the post-configuration activities that apply to your solution implementation. (See [“Post-Deployment Activities” on page 48](#).)

After you configure LiveCycle ES2, complete the post configuration for BAM settings. (See [“\(Business Activity Monitoring\) Configure BAM settings” on page 47](#)).

46. If you configured SSL, you must restart JBoss for the SSL configuration to take affect.

5.5 (Business Activity Monitoring) Configure BAM settings

For Business Activity Monitoring, after you complete the configuration using LiveCycle Configuration Manager, complete the following configuration for BAM.

- For LiveCycle Process Management ES2, to connect to BAM server, refer to *Configuring LiveCycle Process Management ES2 for BAM Server* in [Installing and Deploying LiveCycle ES2 for JBoss](#).
- To Access BAM dashboard, ensure you have configured the BAM Server system. Refer to *Configuring Business Activity Monitoring* in [Installing and Deploying LiveCycle ES2 for JBoss](#).

5.6 Next steps

If you used LiveCycle Configuration Manager to configure and deploy LiveCycle ES2, you can now complete the post-deployment tasks. (See [“Post-Deployment Activities” on page 48](#).)

6

Post-Deployment Activities

This section details post-installation tasks and describes how to get started using LiveCycle ES2 modules and services after they are installed, configured, and deployed to your application server:

- [“Restarting the JBoss services” on page 48](#)
- [“Disabling status pages for JBoss” on page 48](#)
- [“Setting the correct date, time, and time zone” on page 49](#)
- [“Manually enabling SSL for JBoss” on page 49](#)
- [“Installing LiveCycle ES2.5 Solution Accelerators” on page 51 \(Optional\)](#)
- [“Upgrading to Workbench ES2” on page 51](#)
- [“Accessing module web applications” on page 52](#)
- [“Accessing User Management” on page 55](#)
- [“Encrypting the plaintext password” on page 55](#)
- [“Managing the MySQL database” on page 55](#)
- [“Configuring LiveCycle ES2 to access LDAP” on page 55](#)
- [“Configuring HTML digital signature” on page 56](#)
- [“Configuring PDF Generator ES2 or PDF Generator 3D ES2” on page 57](#)
- [“Configuring SharePoint client access” on page 69](#)
- [“Enabling CIFS in IPv6 mode” on page 70](#)
- [“Performing a system image backup” on page 71](#)
- [“Uninstalling LiveCycle ES2” on page 71](#)

6.1 Restarting the JBoss services

After completing the LiveCycle ES2 installation, restart the JBoss service to ensure that it is in a clean running state. After an install, JBoss service will be in a high-memory-use initialization state.

6.2 Disabling status pages for JBoss

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

► **To disable the status page for JBoss Application Server 4.2.1:**

1. Locate `[JBossES2 root]/server/lc_turnkey/deploy/jbossweb.deployer/ROOT.war/WEB-INF`, and open the `web.xml` file in an editor.
2. Comment out the `servlet` and `servlet-mapping` tags as follows:

```
<!-- <servlet>  
    <servlet-name>Status Servlet</servlet-name>
```

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

3. Save and close the file.

6.3 Setting the correct date, time, and time zone

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

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

6.4 Manually enabling SSL for JBoss

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

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

1. Create a keystore using the keytool utility that ships with the Java SDK.
2. Generate the certificate or use a certificate issued by a CA.
3. Copy the keystore and the certificate files to the JBoss root configuration folder—
C:\Adobe\Adobe LiveCycle ES2\jboss\server\lc_turnkey\conf.
4. Import the certificate into *[Adobe_JAVA_HOME]\lib\security\cacerts*.
5. Update the JBoss server.xml file to uncomment the SSL configuration settings and specify reference attributes for the certificate.
6. Restart the JBoss server to apply your changes.

6.4.1 Enabling SSL for JBoss

You can configure SSL for JBoss using LiveCycle Configuration Manager. If you skipped this option, this section describes how to manually configure SSL.

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

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

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

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

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

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

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

► To enable SSL for JBoss on a Turnkey installation

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

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

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

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

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

3. Copy the `keystorename.keystore` file to the `[appserver root] \server\lc_turnkey\conf` directory by typing the following command:

```
copy keystorename.keystore [JBoss_ES2 root]/server/lc_turnkey/conf
```

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

```
keytool -export -alias "LC Cert" -file LC_cert.cer -keystore [appserver root]\server\lc_turnkey\conf\keystorename.keystore
```

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

6. Copy the `LC_cert.cer` file to the `[appserver root] conf` directory by typing the following command:

```
copy LC_cert.cer [appserver root]\server\lc_turnkey\conf
```

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

```
keytool -printcert -v -file [appserver root]\server\lc_turnkey\conf\LC_cert.cer
```

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

9. Import the certificate by typing the following command:

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

10. Type `changeit` as the password. `changeit` is the default password for a Java installation.
11. When prompted if you Trust this certificate? [no] :, type `yes`. The confirmation "Certificate was added to keystore" is displayed.
12. In a text editor, open the file `[JBossES2_root]\server\lc_turnkey\deploy\jboss-web.deployer\server.xml`.
13. Uncomment the following lines in the `server.xml` file:

```
<!-- SSL/TLS Connector configuration using the admin dev1 guide keystore
<Connector port="8443" address="{jboss.bind.address}" maxThreads="100"
strategy="ms" maxHttpHeaderSize="8192" emptySessionPath="true"
scheme="https" secure="true" clientAuth="false"
keystoreFile="{jboss.server.home.dir}/conf/keystoreFile.keystore"
keystorePass="keystorePass" sslProtocol = "TLS" />
-->
```
14. For the `keystoreFile` attribute in `server.xml`, specify the path of the keystore file you created. Specify `keystore_password` for the `keystorePass` attribute in `server.xml`.
15. Save the `server.xml` file.
16. Restart the application server:
 - From the **Windows Control Panel**, click **Administrative Tools**, and then click **Services**.
 - Select **JBoss for Adobe LiveCycle ES2**.
 - Select **Action > Stop**.
 - Wait for the status of the service to appear as stopped.
 - Select **Action > Start**.

6.5 Installing LiveCycle ES2.5 Solution Accelerators

New for 9.5

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

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

6.6 Upgrading to Workbench ES2

Once you have completed your LiveCycle ES2 server upgrade and verified that it is working properly, you must install the new version of Workbench ES2 in order to continue creating and modifying your LiveCycle ES2 applications. See [Installing Your Development Environment](#).

6.7 Accessing LiveCycle Administration Console

LiveCycle Administration Console is the web-based portal for accessing various configuration pages, where you 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 e-mail client configuration, as well as administrative configuration options for other services. Access Applications and Services, which administrators use for deploying services to a production environment, from within LiveCycle Administration Console.

The default user name and password for logging in to LiveCycle Administration Console is *administrator* and *password*. After you log in the first time, you can access User Management and change the password of the LiveCycle ES2 administrator account. (See [“Accessing User Management” on page 55.](#))

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

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

► **To access LiveCycle Administration Console:**

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

6.7.1 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 > User Management.

6.8 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 Rights Management ES2
- LiveCycle Business Activity Monitoring ES2
- LiveCycle Content Services ES2

For information about using Reader Extensions ES2, Workspace ES2, and Rights Management ES2, see the Help that is available within each application.

Access the web applications using the default administrator permissions and create additional users and roles so that others can log in and use the applications. (See *User Management Help*, which is also available within *LiveCycle Administration Console Help* or the User Management page.)

6.8.1 Accessing Reader Extensions ES2

5. Open a web browser and enter this URL:
`http://localhost:8080/ReaderExtensions` (local deployment using the default port)

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

User name: *administrator*

Password: *password*

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

6.8.2 Accessing Workspace ES2

7. Open a web browser and enter this URL:
`http://localhost:8080/workspace` (local deployment using the default port)

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

User name: *administrator*

Password: *password*

6.8.3 Accessing Rights Management ES2

To log in to Rights Management ES2, you must be assigned the LiveCycle Rights Management End User role.

All new and existing users, including the Super Administrator, are not granted the LiveCycle Rights Management End User role by default. You must create a user account with the LiveCycle Rights Management End User role in User Management, or grant the End User role to existing users. Then, log in to Rights Management ES2 by using the login information that is associated with the user you create.

► To access the Rights Management ES2 web application:

1. Open a web browser and enter this URL:
`http://localhost:8080/edc/Login.do` (local deployment using the default port)

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

User name: Administrator or any user who has the Rights Management ES2 End User role

Password: Password for the user account entered above

Note: Restart the application server if you cannot log in as a user other than administrator.

For information about setting up users and roles and configuring SSL for Rights Management ES2, see [Administering LiveCycle ES2](#).

When a user adds a principal user to a policy entry in Rights Management ES2, no principal users are visible by default, because the My Policies policy set does not include a domain. To add visible users and groups, you can change the My Policies configuration in the Rights Management ES2 administration web application to add a domain. All the users in the added domains are visible and can be added to a user policy. (see [Administering LiveCycle ES2](#)).

6.8.4 Accessing Business Activity Monitoring ES2

1. Launch Internet Explorer and enter the appropriate URL:
 - <http://localhost:8888/bam/login/dashboard.htm> (local deployment using the default port)
 - <http://localhost:8888/bam/login/workbench.htm> (local deployment using the default port)
2. Log in using the default user name and password:
User name: *CognosNowAdmin*
Password: *manager*

► To populate BAM Dashboard:

Perform the following steps to synchronize LiveCycle ES2 process data into BAM.

1. Log into BAM Workbench.
2. Click the Workbench tab, and select Public Folders.
3. Locate Data Stream AdobeEvent and select **AdobeEvent**.
4. From the Activities list, click **Disable** and then on the popup dialog, click **Disable Dependencies**.
5. Select AdobeEvent, and then from the Activities list, click **Enable** and then on the popup dialog, click **Enable All**.
6. Repeat steps 3 to 5 for all other Data Streams.

► To reset BAM recovery log directory for backup and restore BAM:

BAM recovery log directory is set to `../server/lc_turnkey/logs` for JBoss by default. You can set a separate directory used for BAM recovery log directory so that you won't loss data if you forget to backup the DEFAULTRECOVERYLOGGER file during for restore.

1. Log into BAM Workbench.
2. On the Administration Console tab, click **System Settings...**
3. In the Configure list, select Checkpoint Configuration.
4. Locate the Recovery Log Directory and make the required changes.

6.8.5 Accessing Content Services ES2

Note: Apply the LiveCycle ContentSpace ES2 Administrator or LiveCycle ContentSpace ES2 roles for a new user to log in to this web application. To enable users to log in, create the users in User Management and grant them the appropriate role.

5. Open a web browser and enter this URL:
 - <http://localhost:8080/contentspace> (local deployment using the default port)
6. Log in using the default user name and password:
User name: *administrator*
Password: *password*

6.9 Accessing User Management

User Management allows administrators to maintain a database of all users and groups. The database can be synchronized with one or more third-party user directories to include users and groups from those databases. User Management provides authentication, authorization, and user management for LiveCycle ES2 modules, including Reader Extensions ES2, Workspace ES2, Rights Management ES2, LiveCycle Process Management ES2, and LiveCycle Forms ES2.

► To access User Management:

1. Open a web browser and enter this URL:
<http://localhost:8080/adminui> (local deployment using the default port)
2. Log in using the default user name and password:
User name: *administrator*
Password: *password*
3. Click **Settings** > **User Management**.

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

6.10 Encrypting the plaintext password

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

6.11 Managing the MySQL database

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

6.12 Configuring LiveCycle ES2 to access LDAP

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

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

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

1. Open a web browser, navigate to <http://localhost:8080/adminui>, and log in. (See [“Accessing module web applications” on page 52.](#))
2. Click **Settings > User Management > Domain Management**, and click **New Enterprise Domain**.
3. In the **ID** box, type a unique identifier for the domain.
4. In the **Name** box, type a descriptive name for the domain.
5. Click **Add Authentication** and, in the **Authentication Provider** list, select **LDAP**.
6. Click **OK** and, on the page that appears, click **Add Directory**.
7. In the **Profile Name** box, type a name, and then click **Next**.
8. Specify values in the **Server, Port, SSL,** and **Binding** boxes, as required.
9. Under **Populate Page With**, select a directory settings option (for example, select **Default Sun ONE values**), and then click **Next**.
10. Configure **User Settings** as required, and then click **Next**.
11. Configure **Group Settings** as required, and then click either **Test** or **Finish**.
12. (Optional) Test your configuration:
 - Click **Test**.
 - In the Test Directory pane, in the **Find** box, enter an object name and, in the **using** box, select the object’s type, such as **Login ID**.
 - Click **Test**. If successful, your object’s details are displayed. You can then click **Back**.
13. Click **Finish** to exit the Add Directory page, and then click **OK** again.

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

6.13 Configuring HTML digital signature

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

► **To enable HTML digital signature:**

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

6.14 Configuring PDF Generator ES2 or PDF Generator 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 57](#)
- ["Configuring the application server to use HTTP proxy server" on page 58](#)
- ["Setting the Adobe PDF Printer as the default printer" on page 58](#)
- ["Configuring Acrobat Professional" on page 58](#)
- ["Installing East Asian characters in Windows Server 2003" on page 59](#)
- ["Setting PDF Generator ES2 or PDF Generator 3D ES2 watched folder performance parameters" on page 60](#)
- ["Configuring user accounts for multi-threaded file conversions" on page 60](#)
- ["Adding fonts to PDF Generator ES2 or PDF Generator 3D ES2" on page 60](#)
- ["Configuring HTML to PDF conversions" on page 62](#)
- ["Modifying Microsoft Visio 2007 default macro settings" on page 63](#)
- ["Installing the PDF Generator ES2 Network Printer client" on page 63](#)

6.14.1 Setting environment variables

If you installed PDF Generator ES2 or PDF Generator 3D ES2 and configured it to convert files to PDF, for some file formats, you must manually set an environment variable that contains the absolute path of the executable that is used to start the corresponding application. This table lists the native applications for which PDF Generator ES2 or PDF Generator 3D ES2 requires you to set up environment variables.

Application	Environment variable	Example
Acrobat 9.3	Acrobat_PATH	C:\Program Files\Adobe\Acrobat 9.3\Acrobat\Acrobat.exe
Adobe FrameMaker®	FrameMaker_PATH	C:\Program Files\Adobe\FrameMaker7.1\FrameMaker.exe
Notepad	Notepad_PATH	C:\WINDOWS\notepad.exe
OpenOffice.org	OpenOffice_PATH	C:\Program Files\OpenOffice.org 3.0
Adobe PageMaker®	PageMaker_PATH	C:\Program Files\Adobe\PageMaker 7.0\PageMaker.exe
WordPerfect	WordPerfect_PATH	C:\Program Files\WordPerfect Office 12\Programs\wpwin12.exe

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

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

6.14.2 Configuring the application server to use HTTP proxy server

If the computer that LiveCycle ES2 is running on uses proxy settings to access external websites, the application server should be started with the following values set as Java Virtual Machine (JVM™) arguments:

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

Choose one of the following procedures to start your application server with HTTP proxy host setting.

► To add the setting to JBoss:

1. Ensure that the JBoss Application Server is stopped.
2. From command line, edit the run script in the `[JBossES2 root]/bin/` directory:
 - (Windows) run.bat
3. Add the following text to the script file:

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

4. Save and close the file.

6.14.3 Setting the Adobe PDF Printer as the default printer

Set the Adobe PDF Printer to be the default printer on the server. If the Adobe PDF Printer is not set as the default, PDF Generator ES2 or PDF Generator 3D ES2 cannot convert files successfully.

► To set the default printer:

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

6.14.4 Configuring Acrobat Professional

This procedure can be completed after you run LiveCycle Configuration Manager and deploy LiveCycle ES2 to the application server.

► To configure Acrobat Professional Extended for use with PDF Generator ES2 or PDF Generator 3D ES2:

1. If an earlier version (8.1 or earlier) of Acrobat is installed, uninstall it by using Add or Remove Programs in the Windows Control Panel.
2. Do one of the following:
 - If you are using the media, insert the Acrobat Professional Extended CD.

- If you are using the ESD downloads, download Acrobat Professional Extended from your ESD location.
 - 3. Install Acrobat Professional Extended 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:

```
Acrobat_for_PDFG_Configuration.bat [LiveCycleES2 root]/pdfg_config
```
 - 6. Open Acrobat and select **Help > Check for updates > Preferences**.
 - 7. Deselect **Automatically check for Adobe updates**.
- **To validate the Acrobat Professional Extended installation:**
1. Navigate to a PDF file on your system and double-click it to open it in Acrobat. If the PDF file opens successfully, Acrobat Professional Extended is installed correctly.
 2. If the PDF file does not open correctly, uninstall Acrobat and reinstall it.
- Note:** Ensure that you dismiss all the Acrobat dialog boxes that are displayed after the Acrobat installation is completed and disable the automatic updates for Acrobat.
- Set the `Acrobat_PATH` environment variable to point to Acrobat.exe (such as `C:\Program Files\Adobe\Acrobat 9.0\Acrobat\Acrobat.exe`).
- **To configure native application support:**
1. Install and validate Acrobat as described in the previous procedure.
 2. Set Adobe PDF printer as the default printer.
 3. **(PDF Generator 3D ES2)** Register the DLL file located at `[LiveCycleES2 root]\plugins\x86_win32\PDFG3dAddin.dll`.

6.14.5 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.

6.14.6 Setting PDF Generator ES2 or PDF Generator 3D ES2 watched folder performance parameters

To avoid `java.io.IOException` error messages indicating that not enough disk space is available to perform PDF conversions using a watched folder, you can modify the settings for PDF Generator ES2 or PDF Generator 3D ES2 in LiveCycle Administration Console.

► To set performance parameters for PDF Generator ES2 or PDF Generator 3D ES2:

1. Log in to LiveCycle Administration Console and click **Services** > **Application and Services** > **Service Management**, and click **PDFGConfigService** in the list of services.

2. On the Configure PDFGConfigService page, set the following values:

PDFG Cleanup Scan Seconds: 1800

Job Expiration Seconds: 6000

Server Conversion Timeout: 450

6.14.7 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.

► Add a user account:

1. In LiveCycle Configuration Manager, 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.

6.14.8 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.

6.14.8.1 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.

6.14.8.2 Adding new fonts to Windows applications only

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

Therefore, if you plan to add any custom fonts to the 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.

6.14.8.3 Adding new fonts to OpenOffice Suite

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

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

- *OpenOffice Fonts Troubleshooting Guide* at <http://www.openoffice.org/FAQs/fontguide.html>. Some of the text in this guide is applicable only to OpenOffice 1.x and therefore may be obsolete for OpenOffice 3.x and above.
- *Importing Fonts into OpenOffice 2.1* at http://openoffice.blogspot.com/openoffice/2007/02/font_import_wiz.html. Even though this blog mentions OpenOffice 2.1, the instructions that are mentioned should be applicable to OpenOffice 2.2 and later.

6.14.8.4 Adding new fonts to other applications

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

6.14.9 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 58](#).
2. Locate the pdfgen.api file in the `[LiveCycleES2 root]\plugins\x86_win32` directory and copy it to `[Acrobat root]\Acrobat\plug_ins` directory.

6.14.9.1 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 root]\windows\fonts`
 - `[Windows root]\winnt\fonts`
2. Modify the font-name mapping in the `cffont.properties` file located in the `[LiveCycleES2 root]/adobe-generatepdf-dsc.jar` file:
 - Extract this archive, and locate the `cffont.properties` file and open it in an editor.

- In the comma-separated list of Java font names, add a map to your Unicode system font for each font type. In the example below, kochi mincho is the name of your Unicode system font.

```
dialog=Arial, Helvetica, kochi mincho  
dialog.bold=Arial Bold, Helvetica-Bold, kochi mincho ...
```
- Save and close the properties file, and then repackage and redeploy the adobe-generatepdf-dsc.jar file.

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

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

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

6.14.10 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

6.14.11 Installing the PDF Generator ES2 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, 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 64.](#)

➤ **To install the PDF Generator ES2 Network Printer Client:**

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

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

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

Upon successful installation, a dialog box appears, indicating that "The Printer Adobe LiveCycle PDF Generator ES2 has been successfully installed."

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

► **To configure PDFG Network Printer on Windows using the native Add Printer wizard:**

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

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

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

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

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

► **To install and configure the PDF Generator 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.

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.

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

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

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

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

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

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

3. If your deployment uses the Process Engine Connector service, copy the file `[appserver root]\client\logkit.jar` to the following directory:
 - **(Manually-configured JBoss)** `[appserver root]/server/all/lib`
 - **(Adobe-preconfigured JBoss)** `[appserver root]/server/lc_<db-name>/lib`
4. Locate the `adobe-component-ext.properties` file in the `[appserver root]/bin` folder (if the file does not exist, create it).
5. Add a new system property that provides the location of these FileNet Application Engine JAR files:
 - `javaapi.jar`
 - `soap.jar`
 - `wasp.jar`
 - `builtin_serialization.jar` (FileNet 4.0 only)
 - `wSDL_api.jar`
 - `jaxm.jar`
 - `jaxrpc.jar`
 - `saaj.jar`
 - `jetty.jar`
 - `runner.jar`
 - `p8cjares.jar`
 - `Jace.jar`
 - (optional) `pe.jar`

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

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

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

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

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

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

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

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

Note: For FileNet 5.0, add following .jar files

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

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

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

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

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

Note: The filename is case-sensitive.

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

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

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

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

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

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

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

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

User name: administrator

Password: password

13. Click **Services > LiveCycle ES2 Connector for IBM FileNet.**
14. Provide all of the required FileNet repository information and, under Repository Service Provider Information, select **IBM FileNet Repository Provider.**

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

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

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

16. Select the check box next to each of these services and then click **Start**:
 - IBMFileNetAuthProviderService
 - IBMFileNetContentRepositoryConnector
 - IBMFileNetRepositoryProvider
 - IBMFileNetProcessEngineConnector (if configured)If any of the services do not start correctly, verify the settings entered in step 14.
17. Do one of the following tasks:
 - To use the FileNet Authorization service (IBMFileNetAuthProviderService) to display content from a FileNet object store in the Resources view of Workbench ES2, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle ES2 authorization and must be configured to log in to Workbench ES2 by using FileNet credentials.
 - To use the LiveCycle ES2 repository, log in to Workbench ES2 by using the LiveCycle ES2 super administrator credentials (by default, *Administrator* and *password*). The credentials provided in step 14 use the default LiveCycle ES2 authorization service for accessing the default repository in this case.
18. Restart your application server.
19. Log in to LiveCycle Administration Console and click **Settings > User Management > Domain Management**.
20. Click **New Enterprise Domain** and then type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

Note: When using MySQL for your LiveCycle ES2 database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in [LiveCycle ES2 Administration Help](#).)
21. Add a custom authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **Custom**.
 - Select **IBMFileNetAuthProviderService** and then click **OK**.
22. Add an LDAP authentication provider:
 - Click **Add Authentication**.
 - In the **Authentication Provider** list, select **LDAP** and then click **OK**.
23. Add an LDAP directory:
 - Click **Add Directory** and, in the **Profile Name** box, type a unique name, and then click **Next**.
 - Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields.
 - (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required. When finished, click **Next**.
 - Configure the user settings, click **Next**, configure group settings as required, and then click **Next**.
For details about the settings, click **Help** link in the upper-right corner of the page.
24. Click **OK** to exit the Add Directory page, and then click **OK** again.

25. Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.
(Optional) To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.
26. Navigate to **Settings > User Management > Users and Groups**.
27. Search for users that were synchronized from LDAP and perform these tasks:
 - Select one or more users and click **Assign Role**.
 - Select one or more LiveCycle ES2 roles and click **OK**.
 - Click **OK** a second time to confirm the role assignment.Repeat this step for all users you want to assign roles to. For more information, click the **Help** link in the upper-right corner of the page.
28. Start Workbench ES2 and log in using the following credentials for the IBM FileNet repository:
User name: *[username]@[repository_name]*
Password: *[password]*
The FileNet object store should now be visible in the Resources view within Workbench ES2. If you do not log in using the *username@repository name*, Workbench ES2 attempts to log in to the default repository specified in step 14.
29. (Optional) If you intend to install the LiveCycle ES2 Samples for Connector for IBM FileNet, create a FileNet object store named *Samples* and install the samples in that object store.

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

6.15 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:

6.15.1 Obtain and edit the share.war file

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

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

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

6.15.2 Deploy the share.war file

1. Open the archive file `adobe-contentservices.ear` using an archive utility such as WinRar from the `[JBossES2 root]/server/lc_turnkey/deploy/` directory.
2. Add the updated `share.war` file to the `adobe-contentservices.ear` archive that is opened in the archive utility window.
3. From the file archive utility window, extract the file `application.xml` to a folder in the local file system, and open it using a text editor. This file is in the `adobe-contentservices.ear\META-INF` directory.
4. Add the following lines under the `<application >` tag:

```
<module id="Share">
  <web>
    <web-uri>share.war</web-uri>
    <context-root>/share</context-root>
  </web>
</module>
```
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 by copying the updated EAR file to the `[JBossES2 root]/server/lc_turnkey/deploy/` directory.

6.16 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.

6.16.1 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.

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

6.17 Performing 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](#).

6.18 Uninstalling LiveCycle ES2

The LiveCycle ES2 uninstaller allows you to selectively remove JBoss, MySQL or LiveCycle ES2 components if you have a turnkey installation. Before removing MySQL, back up any data you want to keep.

► **To remove the product files:**

1. Select **Start > Control Panel > Add or Remove Programs**, click **LiveCycle ES2** and click **Remove**.
2. Select JBoss and MySQL to remove these components along with the LiveCycle ES2 components.
3. Follow the on-screen instructions and then click **Finish**.
4. Restart your computer if prompted to do so.

Note: If you choose to retain JBoss/MySQL while uninstalling LiveCycle ES2, you can remove these applications later using the **Add or Remove Programs** utility in Microsoft Windows. Attempts to remove JBoss/MySQL may fail if a JDK is not installed on the server.

This section describes advanced post-installation tasks that you may require for your LiveCycle ES2 environment. The following topics are discussed:

- “Enabling Federal Information Processing Standard (FIPS)”
- “Enabling AES-256 encryption”

7.19 Enabling Federal Information Processing Standard (FIPS)

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).

7.20 Enabling AES-256 encryption

To use AES 256 encryption for PDF files, obtain and install the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy files. These files replace the `local_policy.jar` and `US_export_policy.jar` files in the `[JAVE_HOME]/lib/security` folder. For example, if you are using Sun JDK 1.6, copy the downloaded files to the `[LiveCycleES2 root]/Java/jdk1.6.0_14/lib/security` folder.

You can download these files from [Java SE Downloads](#).

This section provides details about troubleshooting LiveCycle ES2.

8.1 Viewing the log files

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

8.1.1 JBoss Application Server logs

The JBoss Application Server log files are in the `[LiveCycleES2 root]/jboss/server/all/log` directory. These log files are provided:

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

8.1.2 LiveCycle ES2 installation logs

The installation log files, `adobe_ES2_server_install.log` and `adobe_ES2_server_install_jboss_service.log` are in the `temp\tmp` directory.

8.1.3 LiveCycle Configuration Manager logs

The LiveCycle Configuration Manager log files are in the `[LiveCycleES2 root]\configurationManager\log` directory.

8.2 Additional troubleshooting

For additional troubleshooting information, refer to [Troubleshooting LiveCycle ES2](#).

A

Appendix - Turnkey Environment Overview

This table provides an overview of the environment for each of the LiveCycle ES2 turnkey installations.

Turnkey installation for JBoss	Partial Turnkey for JBoss
J2EE application server: <ul style="list-style-type: none">● JBoss 4.2.1	J2EE application server: <ul style="list-style-type: none">● JBoss 4.2.1
Servers: <ul style="list-style-type: none">● All	Servers: <ul style="list-style-type: none">● All
Database: <ul style="list-style-type: none">● MySQL 5.1.30	Database: <ul style="list-style-type: none">● MySQL 5.0.18, 5.1.30 (recommended)● Microsoft SQL Server 2005 SP2, 2008● Oracle 10g, 11g
Windows services: <ul style="list-style-type: none">● MySQL for Adobe LiveCycle ES2● JBoss for Adobe LiveCycle ES2● JBoss for Adobe LiveCycle BAM ES2	Windows services: <ul style="list-style-type: none">● JBoss for Adobe LiveCycle ES2● JBoss for Adobe LiveCycle BAM ES2
Primary Ports: <ul style="list-style-type: none">● 8080 (Web port)● 8888 (BAM port)	Primary Ports: <ul style="list-style-type: none">● 8080 (Web port)● 8888 (BAM port)
Processes: <ul style="list-style-type: none">● Mysqld-max-nt.exe [MySQL]● java.exe (JBoss all server)	Processes: <ul style="list-style-type: none">● java.exe (JBoss all server)