

PREPARING TO UPGRADE TO ADOBE® LIVECYCLE® ES3

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Contents

Chapter 1: About This Document

1.1 What's in this document?	1
1.2 Who should read this document?	1
1.3 Conventions used in this document	1
1.4 Additional information	2

Chapter 2: Introduction to Upgrading to LiveCycle ES3

2.1 Upgrading to LiveCycle ES3 from 8.x	4
2.2 Upgrading task outline	5

Chapter 3: Understanding the Changes in LiveCycle ES3

3.1 How the LiveCycle ES3 upgrade protects your IT investment	6
3.2 Adobe Reader compatibility	6
3.3 Enterprise Readiness Tool	6
3.4 Overview of the upgrade process	7
3.5 Updating client libraries	8
3.6 Upgrading the Connectors for ECM	8

Chapter 4: Preparing Your Environment for Upgrading

4.1 The LiveCycle ES3 upgrade execution workflow	9
4.2 Upgrading your infrastructure	9
4.3 Gathering required information before you start	9
4.4 Export and backup Business Activity Monitoring metadata	11
4.5 Uninstalling the BAM Server manually	11
4.6 Running LiveCycle in maintenance mode	12
4.7 Stop Scheduler Service	13

Chapter 5: System Requirements

5.1 Prepare your server environment	14
5.2 In-place or Out-of-place upgrades	14
5.3 System requirements	17
5.4 LDAP configuration	32
5.5 Global document storage directory	33
5.6 Installation considerations	34
5.7 LiveCycle IPv6 support	35
5.8 Server configuration for enabling CIFS	38
5.9 Upgrade: Processes with document form variables and digital signatures	39
5.10 Central Migration Bridge service	40

Chapter 1: About This Document

1.1 What's in this document?

This document contains the following types of information:

- Information about the changes in LiveCycle ES3 that may affect your upgrade planning and an overview of how the upgrade process works, including an outline of the tasks involved
- All the tasks that must be performed to ensure that the upgrade runs correctly with minimal server downtime (including backing up the existing LiveCycle server and patching the application server as required)
- All hardware and software requirements and configurations that *must* be already in place to ensure a successful LiveCycle ES3 upgrade process

***Note:** If you are planning to perform an upgrade by using the turnkey method for JBoss, you do not need to perform many of the steps in this document. It is recommended that you review the section “[Understanding the Changes in LiveCycle ES3](#)” on page 6. However, all preparatory information for a turnkey upgrade, including system requirements, is included in [Upgrading to Adobe LiveCycle ES3 for JBoss Turnkey](#).*

After you complete the tasks in this document, proceed to the Upgrading to Adobe LiveCycle ES3 document for your application server.

1.2 Who should read this document?

This document provides information for administrators or developers who are responsible for preparing the application and database servers for development, staging, and production environments prior to installing, configuring, upgrading, administering, and deploying LiveCycle ES3.

The information provided is based on the assumption that anyone reading this document is familiar with application servers, operating systems, database servers, and web environments.

1.3 Conventions used in this document

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

Name	Description	Default value
[LiveCycle root]	The installation directory used for all LiveCycle modules. The directory contains subdirectories for LiveCycle ES3 - Configuration Manager, SDK, and licensed modules (along with the product documentation). This directory also includes directories that relate to third-party technologies.	Windows: C:\Adobe\Adobe LiveCycle ES3 Linux and UNIX: opt/adobe/adobe_lifecycle_es3/
[appserver root]	The home directory of the application server that runs the services that are part of LiveCycle ES3.	JBoss on Windows: C:\jboss\ JBoss on Linux: /opt/jboss/ WebSphere on Windows: C:\Program Files\IBM\WebSphere\AppServer\ WebSphere on Linux and UNIX: /opt/IBM/WebSphere/AppServer/ WebSphere on AIX: /usr/IBM/WebSphere/AppServer/ or /opt/IBM/WebSphere/AppServer/ WebLogic Server 11g on Windows: C:\Oracle\Middleware\wlserver_10.3\ WebLogic Server 11g on Linux and Solaris: /opt/Oracle/Middleware/wlserver_10.3/
[appserverdomain]	The domain that you configured on WebLogic application server.	WebLogic Server on Windows: C:\Oracle\Middleware\user_projects\domains\base_domain WebLogic Server on Linux and UNIX: /opt/Oracle/Middleware/user_projects/domains/base_domain

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

1.4 Additional information

The resources in this table can help you learn about LiveCycle ES3.

For information about	See
Performing the upgrade from LiveCycle ES Update 1 or LiveCycle ES2 to LiveCycle ES3 using the turnkey method	Upgrading to LiveCycle ES3 for JBoss Turnkey
Upgrading from LiveCycle ES Update 1 or LiveCycle ES2 for JBoss, WebSphere, and WebLogic servers	Upgrading to LiveCycle ES3
General information about LiveCycle ES3 and the modules	LiveCycle ES3 Overview
Other services and products that integrate with LiveCycle ES3	Adobe Developer Connection
LiveCycle modules	LiveCycle Modules

For information about	See
All documentation that is available for LiveCycle ES3	LiveCycle ES3 documentation
LiveCycle ES3 release information and last-minute changes that occur to the product	LiveCycle ES3 Release Notes
Patch updates, technical notes, and additional information about this product version	Adobe® Enterprise Support

Chapter 2: Introduction to Upgrading to LiveCycle ES3

This section provides information about the documentation that is available to help you understand the upgrade process. It also provides a high-level outline of the tasks that are involved in upgrading LiveCycle ES Update 1 or LiveCycle ES2 to LiveCycle ES3.

Before you read this document, ensure that you have read the [Upgrade Checklist and Planning](#) guide.

2.1 Upgrading to LiveCycle ES3 from 8.x

The documents [Upgrading to LiveCycle ES3 for JBoss](#), [Upgrading to LiveCycle ES3 for WebSphere](#), and [Upgrading to LiveCycle ES3 for WebLogic](#) provide the information that you need to perform the actual installation and migration steps that make up the upgrade process. Each guide is specific to the application server you are using.

2.1.1 Upgrading to LiveCycle ES3 for JBoss Turnkey

The [Upgrading to LiveCycle ES3 for JBoss Turnkey from 8.x](#) document includes all the steps that are required to upgrade to LiveCycle ES3 for JBoss and MySQL from LiveCycle ES (8.x) by using the turnkey method. The turnkey method installs, configures, and upgrades the product.

You can upgrade using the turnkey method if you installed LiveCycle ES (8.x) by using JBoss turnkey and if the modules are deployed to the JBoss instance that was included as part of the turnkey installation.

Note: *The LiveCycle ES3 turnkey option runs on **JBoss 4.2.1** only. The LiveCycle ES3 installation will install and configure this product. Your existing JBoss 4.0.3 SP1 server instance can be removed once you have verified that your upgraded environment is working.*

Perform this type of upgrade to rapidly get a LiveCycle ES3 system up and running for small-scale production, demonstration, evaluation, development, or training purposes. The turnkey method installs and configures a default set of Adobe and third-party products that provide a functioning LiveCycle ES3 environment.

Note: *To perform an upgrade by using the turnkey method, you do not need to perform many of the steps in this document ([Preparing for Upgrading to LiveCycle ES3](#)). It is recommended that you review the section “[Understanding the Changes in LiveCycle ES3](#)” on page 6. However, all preparatory information for turnkey upgrades, including system requirements, are included in [Upgrading to LiveCycle ES3 for JBoss Turnkey](#).*

You can also upgrade using the turnkey method if your LiveCycle ES3 system will reside on a different computer. In this case, however, you will need to configure your database and global document storage (GDS) directory separately. The major tasks involved are:

- Manually copy the GDS directory to the new computer.
- Manually copy the lccs_data directory to the new computer or on a shared network drive.
- Manually restore your database backup to the new computer.
- Provide the details of the new GDS directory and database during configuration.

Note: *While upgrading to LiveCycle ES3 using turnkey method, you must specify the same database credentials as for your LiveCycle ES 8.x turnkey installation.*

2.1.2 Upgrading a LiveCycle ES 8.2 WebLogic Turnkey

There is no support for WebLogic turnkey in LiveCycle ES3. If you have an existing LiveCycle ES 8.2 WebLogic turnkey and need to upgrade, you must perform an out-of-place upgrade as described in the following pages and in the Upgrading to LiveCycle ES3 for WebLogic guide.

2.1.3 Configuration Manager Help

Part of the upgrade is completed by using Configuration Manager, a wizard-like tool that leads you through the upgrade process, prompting you to provide the required information. On each Configuration Manager screen, you can press the F1 key to view the Help dialog box for that screen.

For more information about Configuration Manager, see the Upgrading to LiveCycle ES3 document for your application server, mentioned earlier in this section.

2.2 Upgrading task outline

This section outlines the tasks that are involved in the upgrade process, from the planning stage to the post-deployment stage.

To upgrade from LiveCycle ES Update 1 or LiveCycle ES2 to LiveCycle ES3, you must complete the following tasks.

Task	See
Understand the upgrade process (high-level section).	"Understanding the Changes in LiveCycle ES3" on page 6
Read the Upgrade Checklist and Planning guide	Upgrade Checklist and Planning
Run the Enterprise Readiness Tool and check how ready is your software infrastructure to run LiveCycle ES3.	"3.3 Enterprise Readiness Tool" on page 6
(In-place) Reuse or patch the existing application server instance to ensure that you have the supported version. (Out-of-place) Install the appropriate operating system and application server versions.	"System Requirements" on page 14
Ensure that you have all the information about passwords, directory locations, and credentials that you need.	"4.3 Gathering required information before you start" on page 9
Back up all existing data, resources, directories.	Upgrade Checklist and Planning guide
Install LiveCycle ES3.	Upgrading to LiveCycle ES3 for your application server
Run Configuration Manager to upgrade to and configure LiveCycle ES3.	<ul style="list-style-type: none">Upgrading to LiveCycle ES3 for your application serverConfiguration Manager Help (Press F1 on the Configuration Manager screen)

Chapter 3: Understanding the Changes in LiveCycle ES3

To successfully upgrade to LiveCycle ES3 from LiveCycle ES Update 1 or LiveCycle ES2, you must first understand which parts of your IT organization are involved. This section provides the high-level information that is required to plan for your upgrade.

3.1 How the LiveCycle ES3 upgrade protects your IT investment

The upgrade to LiveCycle ES3 is designed to provide an automated experience with minimal manual tasks. It continues to protect your investment in the forms, processes, and applications that you have built around LiveCycle. By protecting that investment, an IT administrator can upgrade to LiveCycle ES3 without help from the form authors who created your forms, the process authors who created your processes, and the Java™ developers who created custom applications for LiveCycle ES Update 1 or LiveCycle ES2.

The LiveCycle ES3 upgrade limits the changes so that they affect only the middle tier of your enterprise infrastructure. For example, if you are using Adobe Reader®, your organization can continue to use the existing version of Adobe Reader that you deployed across your clients. Keeping the LiveCycle ES3 upgrade restricted to your middle tier minimizes the disruption to the remainder of your enterprise infrastructure.

3.2 Adobe Reader compatibility

One of the key features of the upgrade is that the version of Adobe Reader on the client is independent of the version of LiveCycle ES3 on the server. When LiveCycle ES3 renders a form, it renders it in the version of PDF that you specify. You can create forms that work best in Adobe Reader 8.x or Adobe Reader 9.x, or you can use new features that work best with Adobe Reader X. Form authors are warned if they choose to use a feature that is not appropriate for the particular version of Adobe Reader.

All forms render in LiveCycle ES3 in the same way they rendered in previous versions. All the scripts that you added to your forms will work in LiveCycle ES3. In addition to the LiveCycle ES3 features that support multiple versions of Adobe Reader, Adobe Reader itself also works with multiple versions of LiveCycle ES3. You can roll out Adobe Reader X to your clients without upgrading your server.

3.3 Enterprise Readiness Tool

The Enterprise Readiness Tool (ERT) automatically examines the preparedness of your software infrastructure to install or upgrade to LiveCycle ES3. Software infrastructure signifies the application server, operating system, JDK, database, and other supporting software required to install and run LiveCycle ES3. ERT validates the version of all supporting software against supported platform combinations for LiveCycle ES3. ERT also detects presence of unsupported runtime components and services when validating the target environment for upgrade readiness.

The ERT report that is generated when you run the tool helps you assess the readiness of your software infrastructure and provides you with the ability to plan the next course of action. For more information, see [Using the Enterprise Readiness Tool](#).

3.4 Overview of the upgrade process

Upgrading from LiveCycle ES Update 1 or LiveCycle ES2 to LiveCycle ES3 installs LiveCycle ES3 software that is subsequently configured using settings from the existing LiveCycle server. Configuration settings, user data, and job information are migrated to the LiveCycle ES3 system.

Most of the tasks in the upgrade process are automated and performed (with some user input) by Configuration Manager. *Configuration Manager* is a tool used to configure, deploy, and validate LiveCycle ES3 components for deployment to the application server. When run in upgrade mode, Configuration Manager also performs upgrade specific tasks such as updating configuration settings and data.

The GDS directory, Content Storage Root directory (if applicable), and database must be accessible to Configuration Manager during the upgrade process.

You can continue to use your existing database if it is a version that is compatible with LiveCycle ES3. If your current database version is no longer supported, back up the data and restore it to a compatible version.

If you are not changing major application server version and are performing an in-place upgrade, your existing application server must be running to deploy the new EAR files. For all other upgrades, the old application server does not need to run during the process. For more information on in-place or out-of-place upgrades, see “[5.2 In-place or Out-of-place upgrades](#)” on page 14

3.4.1 Upgrading to LiveCycle ES3 using Configuration Manager

Upgrading to LiveCycle ES3 modules from LiveCycle ES Update 1 or LiveCycle ES2 involves these tasks:

- 1 Installing LiveCycle ES3 product files.
- 2 Running Configuration Manager to initiate the configuration, upgrading, and deployment process. The remaining steps (below) are included in this process.
- 3 Updating and deploying LiveCycle ES3 EAR files to the application server.

Note: For an in-place upgrade, you must manually undeploy the existing LiveCycle EAR files from the application server.

- 4 Starting LiveCycle ES3 on the application server, so that it is available to accept user requests. This is done automatically after the EAR files are deployed. However, you must start the server manually if it does not start automatically.
- 5 Initializing the LiveCycle ES3 database so that LiveCycle ES3 specific schema changes are incorporated in the database without affecting the existing data.

Note: This step is mandatory and must not be skipped during an upgrade. It does not affect existing data in any way.

- 6 Patching existing LiveCycle ES3 components with new versions and deploying new LiveCycle ES3 components, if any.
- 7 Migrating to the database, essential data, as well as all remaining data, such as audit records that are submitted or historical data that are associated with LiveCycle Process Management.

3.5 Updating client libraries

JBoss Application Server

If your custom applications use JAR files (client-libs) that are specific to JBoss, you must ensure that the JBoss-specific client-lib files are also updated within the custom applications to avoid seeing any issues while using them.

The JBoss client libraries are located in the *client* directory in `third_party/jboss.zip` on the LiveCycle ES3 installation media (DVD or ESD).

WebLogic Server

For WebLogic, include the full WebLogic client JAR file (`wlfullclient.jar`) in the classpath of the custom application. If your client applications run on version 5 of the JDK, they use a different JAR file. You must build the full WebLogic client JAR file manually. Follow the steps in the article [Programming Stand-alone Clients to generate the full WebLogic client JAR file](#).

General Issues

If your custom applications use the LiveCycle ES Update 1 `adobe-livecycle-client.jar` file, after upgrade, you may see an exception in your application server logs while using custom applications. The exception may look similar to:

```
java.io.FileNotFoundException: Response: '403: Forbidden' for url:
'http://localhost:8080/DocumentManager'
```

To avoid these errors when running your custom applications, do one of the following tasks (the first task is the preferred method):

- Replace the `adobe-livecycle-client.jar` file used in your custom application with the LiveCycle ES3 `adobe-livecycle-client.jar` file located in `[LiveCycle root]/sdk/client-libs/common`
- Log in to Administration Console and click **Settings > Core System Settings > Configurations**. Select the options **Allow non secured document upload from Flex applications** and **Allow non secured document upload from Java SDK applications**, click **OK** and restart your application server.

3.6 Upgrading the Connectors for ECM

Upgrading connectors is supported in all scenarios. However, the steps are different, depending on support for the server version of your connector, in LiveCycle ES3. Upgrading connectors for ECM is supported:

- If your current ECM server is a version supported in LiveCycle ES3, you can upgrade without any issues.
- If your current ECM server is an unsupported version, run the LiveCycle ES3 upgrade first, skipping the Form Template Import step. Once LiveCycle is upgraded to LiveCycle ES3 and configured, you can then upgrade your ECM server to a supported version and rerun Configuration Manager to import the form templates. Install the new ECM client and then configure your applications to work with the client.

Note: If the ECM content server is upgraded before Connector for IBM FileNet or Connector for EMC Documentum is upgraded to LiveCycle ES3, run-time configuration information for LiveCycle, such as shared locks on the resources, will not be available and migrated to LiveCycle ES3.

See the appropriate section in [“5.3 System requirements”](#) on page 17 to verify supported ECM versions.

Chapter 4: Preparing Your Environment for Upgrading

Before you begin the upgrade process, you must perform several tasks to prepare your environment for upgrading:

- Run the Enterprise Readiness Tool (ERT) on your current LiveCycle ES Update 1 or LiveCycle ES2 installation. See [Using the Enterprise Readiness Tool](#) for more information.
- Read the [Upgrade Checklist and Planning](#) guide and complete all the verification tasks and validation checks on your existing LiveCycle ES Update 1 or LiveCycle ES2 environment.
- Based on the findings of the Upgrade Checklist/ERT, update any QPAC-based workflows to DSC-based workflows either using the Workbench (versions 8.2.1, 9.0, or 9.5 as applicable) Process Upgrade Tool OR manually writing DSC/Service operations for the same.
- Refer to the platform matrix, and prepare the software infrastructure required for the upgrade. Complete any manual steps before upgrading your LiveCycle instance. For example, if a new application server is required, refer to the relevant sections of 'Preparing to Install LiveCycle ES3' guide to prepare the new application server instance. Apply the latest patches to your application server, as required in the [LiveCycle ES3 Supported Platform Combinations](#) document. Or, if a new version of Database server is required then, data from older Database server instance must be migrated to the newer Database server instance.
- Back up the existing LiveCycle environment.

4.1 The LiveCycle ES3 upgrade execution workflow

An upgrade workflow consists of a set of tasks that must be completed to ensure a successful upgrade from your current LiveCycle installation to LiveCycle ES3. For information on this task set, see [Upgrade Workflow](#).

4.2 Upgrading your infrastructure

Some platforms that were supported in the erstwhile versions of LiveCycle continue to be supported in LiveCycle ES3. However, there is support for some new platforms too. For example, LiveCycle ES3 supports more recent versions of application servers, and you may need to apply the latest patches to your application server.

Note: When an existing application server is supported, it is recommended that you apply the latest patches and ensure that the updated application server is running correctly before you upgrade to LiveCycle ES3.

For details about supported platforms, see [LiveCycle ES3 Supported Platform Combinations](#).

4.3 Gathering required information before you start

This section serves as a checklist for the information that you need during the upgrade process. During the upgrade, you will be instructed or prompted to provide this information. If you ensure that it is available before you begin, you can speed up the process and minimize any server downtime.

4.3.1 Determining important ports

Note the JNDI port number for your application server (JBoss, WebLogic, or WebSphere) and listener port for your database instance, which you plan to use for upgrading to LiveCycle ES3.

If you are not sure which ports the database uses, contact your database administrator.

4.3.1.1 JBoss:

- 1 Navigate to the correct directory:
 - If you are using JBoss 4.2.1 when upgrading to LiveCycle ES3, navigate to the right folder:
 - If using JBoss Turnkey, navigate to the [appserver root]/server/lc_turnkey/conf directory
 - If using Adobe pre-configured JBoss, navigate to the [appserver root]/server/lc_<database type>/conf directory
 - If using JBoss downloaded from internet, navigate to the [appserver root]/server/all/conf directory
 - If you are using JBoss 5.1 when upgrading to LiveCycle ES3, navigate to the right folder:
 - If using JBoss Turnkey, navigate to the [appserver root]/server/lc_turnkey/conf directory
 - If using Adobe pre-configured JBoss, navigate to the [appserver root]/server/lc_<database type>/conf directory
 - If using JBoss downloaded from internet, navigate to the [appserver root]/server/standard/conf directory
- 2 Open the jboss-service.xml file.
- 3 Find the `<mbean code="org.jboss.naming.NamingService">` element. The JNDI server port is the value of the `<attribute name="Port">` element.

4.3.1.2 WebSphere

- 1 Log in to the WebSphere Administrative Console.
- 2 In the navigation tree, click **Servers > Server Types > WebSphere application servers**.
- 3 On the right pane, click the server name.
- 4 Under Communications, click **Ports**, and find the value of BOOTSTRAP_ADDRESS.

4.3.1.3 WebLogic

For WebLogic, the JNDI server port is usually the same as the http port for the server that is created to host LiveCycle ES3. If a Managed Server is configured for deployment of LiveCycle ES3, the JNDI port should be same as the http port used by the Managed Server.

4.3.2 Server names

If you are performing a staged installation of LiveCycle ES3 product files, and running Configuration Manager from a different computer than the target server, you must know the hostname of the system that LiveCycle ES3 will be deployed on.

4.4 Export and backup Business Activity Monitoring metadata

***Note:** Do not perform the procedure described in this section if you wish to continue using BAM and the old BAM database with LiveCycle ES3. If you wish to use a new database for BAM with LiveCycle ES3, perform the procedure and reinstall BAM using LiveCycle ES or LiveCycle ES2 installation media after upgrading to LiveCycle ES3.*

This task is required only if you wish to reuse an existing Business Activity Monitoring installation.

Before you begin, export the metadata so that the customized BAM objects are available to be imported into LiveCycle ES3. This applies customized objects only - do not export auto-generated objects. If you installed BAM Server manually, you must uninstall it manually as well.

4.4.1 Export the BAM Server metadata

- 1 In a browser, type `http://[hostname]:[BAM port]/bam/workbench` and log in to BAM Workbench.
- 2 Click **Application Workbench > Event**.
- 3 Select all events except for `VC_SYSTEM_EVENTS`, `VC_TASK_EVENTS` and your customized events.
- 4 Click **Delete Event(s)** and then click **Delete Dependencies** when prompted.
- 5 Delete all views except for `VC_SYSTEM_VIEW`, `VC_TASK_VIEW` and your customized views.
- 6 Click **Delete View(s)** and then click **Delete Dependencies** when prompted.
- 7 Repeat steps 5 and 6 for Contexts, Dimensions and Cubes, substituting the appropriate `VC_SYSTEM_<>`, `VC_TASK_<>` objects.
- 8 Delete all JAR files except for your customized JAR files. Click **Delete This Jar...** and then click **Delete Dependencies** when prompted.
- 9 Click the **Administration Console** tab and click **Import/Export**.
- 10 When prompted, choose **Export Metadata to a JAR file on the server**, enter the server location and click **OK**.
***Note:** Save the exported JAR file to a location available to the LiveCycle ES2 installer.*
- 11 Stop the application server and delete the 3 tables in BAM metadata database.

4.5 Uninstalling the BAM Server manually

***Note:** LiveCycle ES3 is the last release to support BAM. If you wish to continue using BAM with LiveCycle ES3, skip this section. If you do not wish to continue using BAM, it is recommended that you uninstall it by performing the steps described in the section below.*

When you uninstall your existing LiveCycle installation, BAM will be removed along with it. Because some folders might not be removed during uninstallation, you should ensure that BAM has been cleanly uninstalled before you attempt to reinstall BAM.

***Important:** If you wish to continue using BAM with LiveCycle ES3, do not perform the steps below.*

Uninstall BAM Server:

- 1 Stop BAM Server.

- 2 Undeploy the BAM Server EAR file by doing one of the following:
 - **(JBoss only)** Removing Lava_Adoe.ear from [bam root]/server/<profile_name>/deploy directory.
 - **(WebLogic only)** Undeploy and delete the old BAM Server EAR file using WebLogic Server Administration Console
 - **(WebSphere only)** Undeploy the BAM Server EAR file using WebSphere Administrative Console.
- 3 **(JBoss only)** Remove the following files:
 - [bam root]/server/<profile_name>/log/*
- 4 Delete all the files from the recovery log directory and logging directory that have names similar to the following patterns:
 - filestore*.dat
 - DEFAULTRECOVERYLOGGER_*
 - chkpoint*
- 5 Review the contents of the [bam root]\bin folder and, if any chkpoint* files exist, delete them.
- 6 Use your database management tools to drop the database tables that store the BAM Server metadata.
 - UNCOMMITTED_TID
 - ALLOCATED_UID
 - METADATA_OBJECTS

4.6 Running LiveCycle in maintenance mode

Maintenance mode is useful when performing tasks such as patching a DSC, upgrading LiveCycle, or applying a service pack.

4.6.1 Put LiveCycle in maintenance mode

Note: Applicable only if you are upgrading from LiveCycle ES2.

In a web browser, enter:

```
http://[hostname]:[port]/dsc/servlet/DSCStartupServlet?maintenanceMode=pause&user=[administrator_username]&password=[password]
```

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

Note: If you shut down the server while it is in maintenance mode, it will still be in maintenance mode when it is restarted. You must turn off maintenance mode when you are finished your maintenance tasks.

4.6.2 Check whether LiveCycle is running in maintenance mode

In a web browser, enter:

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

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

Note: Returns "true" only if you had put the LiveCycle ES2 system in maintenance mode.

4.7 Stop Scheduler Service

Note: Applicable only if you are upgrading from LiveCycle ES Update 1.

- 1 Before starting the upgrade, log in to Workbench ES Update 1 and click **Window > Show View > Components**
- 2 Scroll to the **SchedulerService**, right click on it and select **Stop Component**.
- 3 Log out of Workbench ES Update 1.

Chapter 5: System Requirements

5.1 Prepare your server environment

Do the following tasks to prepare your server environment:

- 1 Verify that the installation media is not damaged. It is recommended that you copy the installer files to the hard disk of the computer where you intend to install LiveCycle, instead of installing directly from the installation media. Also verify the MD5 checksum of the installation media matches the checksum posted at [Adobe Website](#).
- 2 Read “[5.3 System requirements](#)” on page 17, and ensure that your software infrastructure is compliant.
- 3 Read System requirements, and ensure that your hardware infrastructure is in place, as per your requirements.
- 4 Install the operating system and update with all necessary patches and service packs.
- 5 Install and configure the database server.
- 6 Install and configure the application server.
- 7 Ensure that your target computer has at least the required amount of RAM as described in “[5.3.1 Minimum hardware requirements](#)” on page 17.

5.2 In-place or Out-of-place upgrades

In-place upgrades: If you are upgrading a WebSphere 7.0 system, apply the latest Fix Packs from IBM. If you are upgrading a JBoss 4.2.1 system, it can be used as is with some modifications.

Out-of-place upgrades: If you are performing an out-of-place upgrade, prepare the application server according to the instructions in the Preparing to Install LiveCycle document.

When you are ready to upgrade to LiveCycle, refer to the following document for instructions on performing the upgrade:

- [Upgrading to LiveCycle for JBoss](#)
- [Upgrading to LiveCycle for WebLogic](#)
- [Upgrading to LiveCycle for WebSphere](#)
- [Upgrading to LiveCycle for JBoss Turnkey](#)

5.2.1 Supported LiveCycle platforms for in-place upgrade

The ability to perform an in-place upgrade to LiveCycle depends on the version of LiveCycle you are upgrading from.

5.2.1.1 Upgrading from LiveCycle ES Update 1

If you are upgrading from LiveCycle ES Update 1, you cannot perform an in-place upgrade. To upgrade to LiveCycle, you must perform an out-of-place upgrade.

5.2.1.2 Upgrading from LiveCycle ES2

If LiveCycle ES2 is installed in an environment described in the table below, you can perform an in-place upgrade:

Operating System	App Server	Database	Hardware
AIX 6.1	WebSphere 7.0.0.5	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
AIX 6.1	WebSphere 7.0.0.5	Oracle 11g / 10g	64 OS / 64 JVM
RedHat EL Server & AP 5.0	JBoss 4.2.1	Oracle 11g / 10g	64 OS / 64 JVM
RedHat EL Server & AP 5.0	JBoss 4.2.1	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
RedHat EL Server & AP 5.0	WebSphere 7.0.0.5	Oracle 11g / 10g	64 OS / 64 JVM
RedHat EL Server & AP 5.0	WebSphere 7.0.0.5	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
Solaris 10	JBoss 4.2.1	Oracle 11g / 10g	64 OS / 64 JVM
Solaris 10	JBoss 4.2.1	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
Solaris 10	WebSphere 7.0.0.5	Oracle 11g / 10g	64 OS / 64 JVM
Solaris 10	WebSphere 7.0.0.5	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
SUSE 10	JBoss 4.2.1	Oracle 11g / 10g	64 OS / 64 JVM
SUSE 10	JBoss 4.2.1	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	JBoss 4.2.1	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	JBoss 4.2.1	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	JBoss 4.2.1	MS SQL Server 2005 SP2 / 2008	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	WebSphere 7.0.0.5	MS SQL Server 2005 SP2 / 2008	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	WebSphere 7.0.0.5	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	WebSphere 7.0.0.5	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
Windows Svr 2008	JBoss 4.2.1	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
Windows Svr 2008	JBoss 4.2.1	MS SQL Server 2005 SP2 / 2008	64 OS / 64 JVM
Windows Svr 2008	JBoss 4.2.1	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2008	WebSphere 7.0.0.5	MS SQL Server 2005 SP2 / 2008	64 OS / 64 JVM
Windows Svr 2008	WebSphere 7.0.0.5	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2008	WebSphere 7.0.0.5	DB2 9.1 and later 9.x updates	64 OS / 64 JVM

5.2.1.3 Upgrading from LiveCycle ES2 SP2

If LiveCycle ES2 SP2 is installed in an environment described in the table below, you can perform an in-place upgrade:

Operating System	App Server	Database	Hardware
AIX 6.1	WebSphere 7.0.0.9	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
AIX 6.1	WebSphere 7.0.0.9	Oracle 11g / 10g	64 OS / 64 JVM
RedHat EL Server & AP 5.0	JBoss 4.2.1/EAP 4.3	Oracle 11g / 10g	64 OS / 64 JVM
RedHat EL Server & AP 5.0	JBoss 4.2.1/EAP 4.3	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
RedHat EL Server & AP 5.0	WebSphere 7.0.0.9	Oracle 11g / 10g	64 OS / 64 JVM
RedHat EL Server & AP 5.0	WebSphere 7.0.0.9	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
RedHat EL Server & AP 5.0	WebLogic 11gR1 - 10.3.3	Oracle 11g / 10g	64 OS / 64 JVM
Solaris 10	JBoss 4.2.1/EAP 4.3	Oracle 11g / 10g	64 OS / 64 JVM
Solaris 10	JBoss 4.2.1/EAP 4.3	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
Solaris 10	WebSphere 7.0.0.9	Oracle 11g / 10g	64 OS / 64 JVM
Solaris 10	WebSphere 7.0.0.9	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
Solaris 10	WebLogic 11gR1 - 10.3.3	Oracle 11g / 10g	64 OS / 64 JVM
SUSE 10	JBoss 4.2.1/EAP 4.3	Oracle 11g / 10g	64 OS / 64 JVM
SUSE 10	JBoss 4.2.1/EAP 4.3	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
SUSE 11	JBoss 4.2.1/EAP 4.3	Oracle 11g / 10g	64 OS / 64 JVM
SUSE 11	JBoss 4.2.1/EAP 4.3	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
SUSE 11	WebSphere 7.0.0.9	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
SUSE 11	WebSphere 7.0.0.9	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	JBoss 4.2.1/EAP 4.3	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	JBoss 4.2.1/EAP 4.3	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	JBoss 4.2.1/EAP 4.3	MS SQL Server 2005 SP2 / 2008	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	WebSphere 7.0.0.9	MS SQL Server 2005 SP2 / 2008	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	WebSphere 7.0.0.9	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2003 SP2 & R2 SP2	WebSphere 7.0.0.9	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
Windows Svr 2008	JBoss 4.2.1/EAP 4.3	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2008 R1/R2	JBoss 4.2.1/EAP 4.3	MS SQL Server 2005 SP2 / 2008	64 OS / 64 JVM
Windows Svr 2008 R1/R2	JBoss 4.2.1/EAP 4.3	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
Windows Svr 2008 R1/R2	WebSphere 7.0.0.9	MS SQL Server 2005 SP2 / 2008	64 OS / 64 JVM

Operating System	App Server	Database	Hardware
Windows Svr 2008 R1/R2	WebSphere 7.0.0.9	Oracle 11g / 10g	64 OS / 64 JVM
Windows Svr 2008 R1/R2	WebSphere 7.0.0.9	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
Windows Svr 2008 R2	WebLogic 11gR1 - 10.3.3	MySQL 5.0.18 / 5.1.30	64 OS / 64 JVM
Windows Svr 2008 R2	WebLogic 11gR1 - 10.3.3	DB2 9.1 and later 9.x updates	64 OS / 64 JVM
Windows Svr 2008 R2	WebLogic 11gR1 - 10.3.3	MS SQL Server 2005 SP3 / 2008	64 OS / 64 JVM
Windows Svr 2008 R2	WebLogic 11gR1 - 10.3.3	Oracle 11g / 10g	64 OS / 64 JVM

5.3 System requirements

5.3.1 Minimum hardware requirements

This table provides the minimum hardware requirements that LiveCycle supports.

Operating system	Minimum hardware requirement
Microsoft Windows Server® 2008 R1/R2 (64-bit architecture)	Intel® Pentium® 4, 2.8 GHz processor or equivalent VMWare ESX 3.0 or later RAM: 4 GB (64-bit OS with 64-bit JVM) Free disk space: 5.4 GB of temporary space plus 3.4 GB for LiveCycle
Microsoft Windows Server® 2003 Enterprise Edition or Standard Edition SP2 and R2 SP2 (64-bit architecture)	Intel® Pentium® 4, 2.8 GHz processor or equivalent VMWare ESX 3.0 or later RAM: 4 GB (64-bit OS with 64-bit JVM) Free disk space: 5.4 GB of temporary space plus 3.4 GB for LiveCycle
Sun Solaris 10 (64-bit architecture)	UltraSPARC® IIIi, 1.5 GHz processor Solaris Containers (Zones) partitioning RAM: 4 GB (64-bit OS with 64-bit JVM) Free disk space: 5.4 GB of temporary space plus 3.4 GB for LiveCycle

Operating system	Minimum hardware requirement
IBM AIX 6.1	P5 pSeries 520 (Model 52A) 9131-52A, 1.8 GHz processor LPAR partitioning RAM: 4 GB (64-bit OS with 64-bit JVM) Free disk space: 5.4 GB of temporary space plus 3.4 GB for LiveCycle
SUSE Linux Enterprise Server 10.0 and 11.0 (64-bit edition only)	Dual core, 1 GHz processor VMWare ESX 3.0 or later RAM: 4 GB (64-bit OS with 64-bit JVM) Free disk space: 5.4 GB of temporary space plus 3.4 GB for LiveCycle
Red Hat Enterprise Linux AP or ES 5.5 (64-bit edition only)	Dual core, 1 GHz processor VMWare ESX 3.0 or later RAM: 4 GB (64-bit OS with 64-bit JVM) Free disk space: 5.4 GB of temporary space plus 3.4 GB for LiveCycle

5.3.1.1 Intel x86 compatibility

On supported Windows and UNIX -like environments, LiveCycle supports Intel and AMD64 compatible chipsets running either 32-bit or 64-bit supported operating systems.

Note: 32-bit platforms are supported only for development and evaluation purposes.

5.3.1.2 Recommended hardware requirements

For a small production environment:

Intel environments: Pentium 4, 2.8 GHz or greater. Using a dual core processor will further enhance performance.

Sun SPARC environments: UltraSPARC V or later.

IBM AIX environments: Power4 or later

Memory requirements: 4 GB of RAM.

5.3.1.3 Additional hardware requirement for Adobe LiveCycle Content Services (deprecated)

If you are installing Content Services for use with a DB2 database, you must have a minimum of 2 GB of RAM on the computer hosting the DB2 database.

5.3.1.4 Recommended hardware requirements for client-side computers

Adobe® LiveCycle® Workbench 10

- Disk space for installation:

1.5 GB for Workbench only

1.7 GB on a single drive for a full installation of Workbench, Adobe® LiveCycle® Designer 10, and the samples assembly

400 MB for temporary install directories - 200 MB in the user temp directory and 200 MB in the Windows temporary directory

Note: If all of these locations reside on a single drive, there must be 1.5 GB of space available during installation. The files copied to the temporary directories are deleted when installation is complete.

- Memory for running Workbench: 2 GB of RAM
- Hardware requirement: Intel® Pentium® 4 or AMD equivalent, 1 GHz processor
- Minimum 1024 X 768 pixels or greater monitor resolution with 16-bit color or higher
- TCP/IPv4 or TCP/IPv6 network connection to the LiveCycle server

Note: You must have Administrative privileges to install Workbench on Windows. If you are installing using a non-administrator account, the installer will prompt you for the credentials for an appropriate account.

Designer

- Adobe® Reader® X and Adobe® Acrobat® X Pro (recommended) is required to benefit from all the new features in Designer.
- Adobe® Flash® Player 10.2 or later.
- (Optional) Adobe® Flash® Builder® 4.5 or later.
- (Optional) Adobe® Flex® SDK 4.1 (required for customizing form guide components that are shipped with Designer).

Note: Use the Flex SDK 4.1 included with the Designer installer only. Do not use any other version of Flex SDK obtained from the Adobe web site.

Note: For more information, see [Installing Your Development Environment](#).

End-user hardware requirements:

- Adobe® LiveCycle® Workspace 10: 1 GB of RAM (includes requirements for Adobe Flash and Adobe Reader)
- Adobe Flash Player 9 or later: 512 MB of RAM (1 GB recommended)
- Adobe Reader 8.x or later: 128 MB of RAM (256 MB recommended)

Note: For web browser requirements, see [LiveCycle Supported Platform Combinations](#).

5.3.2 Supported Platforms

For detailed information about the supported combinations of operating systems, application server, databases, JDKs, and so on, see [LiveCycle Supported Platform Combinations](#).

5.3.3 Additional requirements for AIX, Linux, and Solaris

Note: On AIX, Linux and Solaris machines, the LiveCycle installer uses the JDK installed on the machine. Therefore, you must ensure to install the supported JDK version. On other operating systems, the installer uses the JVM bundled with the installer.

5.3.3.1 Installing and configuring UTF-8

When installing LiveCycle on AIX, Linux, or Solaris operating systems, you must install and configure the US English version of UTF-8 locale if it is not already installed. You will need the install media (CDs or DVDs) for the operating system to perform this task.

Note: On Linux platforms, this locale is installed by default and is called `en_US.utf8`. It can be verified by using the `locale -a` command.

Installing UTF-8 on AIX

- 1 Verify the US English UTF-8 locale is not installed by typing `locale -a` in a command prompt. Verify that the command output does not contain the entry `EN_US.UTF-8`.
- 2 Access the AIX SMIT utility (in text mode) by typing `smitty mle_add_lang` at the root in the command prompt.
- 3 On the screen that appears, select **UTF-8 US English (United States) [EN_US]** from both the **CULTURAL CONVENTION** and **LANGUAGE TRANSLATION** drop-down lists.

Note: Keep the `INPUT DEVICE/DIRECTORY` as the default `/dev/cd0` setting.

- 4 Press **Enter** to proceed. A message such as the following will appear:

```
installp: Device /dev/cd0 not ready for operation.  
Please insert media and press Enter to continue.
```

- 5 Insert the appropriate AIX install disk in the disk drive.
- 6 When the command is complete, exit the SMIT utility and type `locale -a` to verify that `EN_US.UTF-8` is set as the locale.

Installing UTF-8 on Solaris

- 1 Verify the US English UTF-8 locale is not installed by typing `locale -a` in a command prompt. Verify that the command output does not contain the entry `EN_US.UTF-8`.

- 2 Insert the Solaris install CD #1 in the disk drive and mount it to an appropriate location, for example:

```
/cdrom/sol_10_807_sparc/s0
```

- 3 Type the following command as root: `localeadm -a nam -d /cdrom/sol_10_807_sparc/s0`

Note: This command installs all locales in the North America (*nam*) region even if you specify only the `en_US.UTF-8` locale.

- 4 When the command is complete, type `locale -a` to verify that `EN_US.UTF-8` is set as the locale.

Note: See this link for [FAQs on Solaris Locales](#).

5.3.3.2 Solaris

Note: Ensure that X Window libraries are installed on your operating system. This is required for Adobe® LiveCycle® PDF Generator 10 and Adobe® LiveCycle® Forms 10. See the documentation for your operating system for more information.

Important: Do not use the Solaris `tar` command to extract files or errors (such as missing files) will occur. Download the GNU `tar` tool and use it to extract all files on a Solaris environment.

5.3.3.3 Linux

On Linux operating systems, ensure the following:

- **All Linux distributions:** Ensure that X Window libraries are installed on your operating system. This is required for PDF Generator and Forms. See documentation for your operating system for more information.
- **SUSE Linux:** You must install the `glibc-locale-32bit` library that ships with SUSE Linux Enterprise Server; otherwise, LiveCycle will not generate PDF files. This library file is not installed by default, you must use YaST to install it. (See the [SUSE Linux Enterprise Server documentation](#) for details.)

If you plan to install LiveCycle on SUSE Linux 11, you must also install the `libstdc++-libc6.2-2.so.3` libraries. SUSE Linux 11 does not include these libraries by default. For more information, see this [Novell Web](#) page. These libraries are required for running Adobe Central Pro Output Server

5.3.3.4 Configuring the file limit values on Solaris and Linux

To avoid StuckThread issues on a Solaris or Linux environment, add or increase the `rlim` values in the `/etc/system` file.

- 1 **(Linux)** Locate and open the `/etc/security/limits.conf` file.

(Solaris) Locate and open the `/etc/system` file.

- 2 **(Linux)** Add the following lines to the `/etc/security/limits.conf` file:

```
<app_group> soft nofile 8192
<app_group> hard nofile 8192
```

Replace `<app_group>` with the user group who will run the application server. You may also replace `<app_group>` with an asterisk (*) to match all users and user groups.

(Solaris) Locate and modify the `rlim` values in the `/etc/system` file as follows:

`set rlim_fd_cur`: The initial (soft) maximum number of file descriptors per process. Set this value to 8192 or more.

`set rlim_fd_max`: The hard maximum number of file descriptors per process. Set this value to 8192 or more. (This modification is required only if the default value is lower than 8192). You must have super user privileges to change this value.

Note: The `rlim_fd_max` value must be equal to or greater than the `rlim_fd_cur` value.

- 3 Save and close the file.

- 4 Restart your computer.

Verify the updated settings

- 1 Launch a new shell.
- 2 Type `ulimit -n` and press **Enter**.
- 3 Verify the value returned matches the `rlim` values you have set.

5.3.4 Privileges required to install on Windows

When installing on Windows, you must use an account that has administrator privileges. If you run the installer using a non-administrator account, enter the credentials of an account that has administrator privileges.

5.3.5 Configuring Windows installation

On 64-bit Windows Server 2008 R1, Windows Server 2008 R2 or Vista operating systems, modify the Admin Approval Mode security option as follows:

- 1 (On Windows 2008 R1 and Vista) Go to **Start > Control Panel > Administrative Tools > Local Security Policy > Local Policies > Security Options**.

(On Windows 2008 R2 and Windows 7) Go to **Start > 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.

5.3.5.1 Disable the Windows UAC on Vista and Windows Server 2008 R1

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

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

5.3.5.2 Disable the Windows UAC on Windows Server 2008 R2 and Windows 7

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

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

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

5.3.6 Minimum database user permissions

Database	Initialization permissions	Runtime permissions
Oracle	CREATE SESSION CREATE CLUSTER CREATE TABLE CREATE VIEW CREATE SEQUENCE UNLIMITED TABLE SPACE	CREATE SESSION UNLIMITED TABLE SPACE (only needed if you do not configure user quotas) CREATE TABLE
MySQL	SELECT INSERT UPDATE DELETE CREATE DROP REFERENCES INDEX ALTER CREATE_TEMP_TABLE LOCK_TABLES	SELECT INSERT UPDATE DELETE
SQL Server - DB level	Create Table Create View Connect	Connect
SQL Server - Schema level	Alter Insert References Select Update Delete	Insert Select Update Delete
DB2	See DB2 user account for complete description.	See DB2 user account for complete description.

5.3.7 Additional requirements for PDF Generator

Note: You cannot use the Shared Printer Protocol for the SendToPrinter API on Windows 2008 machines that have PDF Generator deployed on them. Use alternate protocols like CIFS or Direct IP.

5.3.7.1 User account for Windows

You must use a user account with administrator privileges for the following tasks:

- Installing Microsoft Office
- Installing PDF Generator

- Installing Acrobat for PDF Generator
- Running the application server process

5.3.7.2 Using 64-bit application servers with PDF Generator

If you are using a 64-bit application server on a system with PDF Generator, ensure that a 32-bit Java 6 JDK is installed in addition to the 64-bit one the application server uses. Set the environment variable `JAVA_HOME_32`. This variable is required to point to a 32-bit JDK on systems where a 64-bit application server is in use. The specific path varies based on the installation directory you specified and the operating system you are installing on.

Note: You need to install the 32-bit Sun JDK and configure `JAVA_HOME_32` to point to the directory where it resides. Review *Sun Java 6 Release Notes > Supported System Configurations* and download the 32-bit version for your operating system. However, if you are using AIX, do not set `JAVA_HOME_32`.

Important: Ensure that `JAVA_HOME_32` is set only as an environment variable and is not included in the `PATH`. If `JAVA_HOME_32` is included in the `PATH`, Java core dumps may appear during EAR deployment or when you restart the server.

5.3.7.2.1 Set the Windows `JAVA_HOME_32` variable

- 1 Select **Start > Control Panel > System**.
- 2 Click the **Advanced** tab.
- 3 Click **Environment Variables** and, under System Variables, click **New**.
- 4 Enter the environment variable `JAVA_HOME_32`. This value is the directory that contains the JDK. For example, type the following:

```
D:\Program Files (x86)\Java\jdk1.6.0_26
```

5.3.7.2.2 Set the `JAVA_HOME_32` variable on Linux or Solaris

Set the `JAVA_HOME_32` variable for the supported JDK for Bourne and Bash shells as shown in this example:

```
JAVA_HOME_32=/opt/jdk1.6.0_26
export JAVA_HOME_32
```

5.3.7.3 Native file conversion software installation

Before you install PDF Generator, install the software that supports the file formats for which PDF conversion support is required and manually activate the licenses for the software using the user account that is used for running the application server process.

Refer to the individual licensing agreement for each native application that your LiveCycle deployment will support, and ensure that your LiveCycle deployment meets the licensing requirements specified. Typically, each LiveCycle user who will use native application support must also have an activated license on their own computer for the native application.

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

Note: PDF Generator supports only English, French, German, and Japanese versions of the supported applications.

- Microsoft Office 2007, 2010 (DOC, DOCX, XLS, XLSX, PPT, PPTX, RTF, TXT, Microsoft Office open XML Formats)
- Microsoft Office Visio 2007, 2010 (VSD)
- Microsoft Publisher 2007, 2010 (PUB)
- Microsoft Project 2007, 2010 (MPP)

- AutoCAD 2008 and 2009 (DWG, DWF)

Note: LiveCycle supports only 32-bit editions of all the above mentioned software.

Note: Native file conversions using AutoCAD for DWG, DXF, and DWF files are supported only on 32-bit environments. Conversions for these file types using Acrobat are supported on both 32-bit and 64-bit platforms.

- Corel WordPerfect 12, X4 (WPD)
- Adobe Photoshop® CS3
- Adobe FrameMaker® 7.2, 8.0 (FM)
- Adobe PageMaker® 7.0 (PMD, PM6, P65, PM)
- OpenOffice 3.3 (ODT, ODP, ODS, ODG, ODF, SXW, SXI, SXC, SXD, SXM)

Note: OpenOffice 3.3 or later must be installed on the server to convert the documents created in version 3.3.

Note: On Linux platform, OpenOffice must be installed under /root user. If OpenOffice is installed for specific users, PDFG might not be able to convert OpenOffice documents.

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

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

5.3.7.4 Installing Acrobat for PDF Generator

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

Note: Ensure that Acrobat is installed using the same user account that you will use to install LiveCycle.

However, if LiveCycle is installed and Acrobat X is not installed, install Acrobat X and then run the Acrobat_for_PDFG_Configuration.bat script, located in the folder [LiveCycle root]\pdfg_config. Otherwise, PDF conversions may fail.

The Configuration Manager sets the Acrobat_PATH (case-sensitive) environment variable automatically. You can also choose to set it manually, see “5.3.7.7 Setting environment variables” on page 26. Restart your application server after setting the environment variable.

Note: Depending on the JDK that you use, download the required JAR files from either Sun or IBM website.

5.3.7.5 Configure Acrobat to use SHX fonts (Windows only)

Note: Perform these steps to configure Acrobat if you want PDF Generator to use SHX fonts to convert AutoCAD DWG files without installing AutoCAD. Also, these steps need to be performed for all user accounts configured in Administration Console.

- 1 Open Acrobat.
- 2 Select **Edit > Configurations**.
- 3 Select **Convert to PDF > Autodesk AutoCAD**.
- 4 Click **Edit Settings**.
- 5 Click **Configuration Preferences**.
- 6 Click **Browse** next to the SHX Font File Search Path and specify the path to the SHX font file.

7 Click **OK** on each opened dialog.

5.3.7.6 QuickTime 7

PDF Generator requires that QuickTime 7 (Player or Pro) be installed if you want to convert video embedded in files, such as PowerPoint presentations to PDF multimedia files. This application is available from the Apple Downloads site.

5.3.7.7 Setting environment variables

You must set the environment variables in Windows if you plan to create PDF documents from applications such as FrameMaker, Photoshop, PageMaker, and WordPerfect.

The names of these environment variables are listed here:

- FrameMaker_PATH
- Notepad_PATH (This should be left blank)
- OpenOffice_PATH
- PageMaker_PATH
- Photoshop_PATH
- WordPerfect_PATH
- Acrobat_PATH

These environment variables are optional and need to be set only if you plan to use the corresponding application to convert PDF files through PDF Generator. The value of the environment variable should contain the absolute path of the executable that is used to start the corresponding application.

For example, the variable `FrameMaker_PATH` may contain the value `C:\Program Files\Adobe\FrameMaker7.2\FrameMaker.exe`. However, `OpenOffice_PATH` is different from others. This variable must be set to the OpenOffice installation folder (instead of the path to the executable). A typical value of `OpenOffice_PATH` on Windows would be `C:\Program Files (x86)\OpenOffice.org 3\`.

Paths for Microsoft Office applications such as Word, PowerPoint, Excel, Visio, and Project or for AutoCAD are not required. The Generate PDF service starts these applications automatically if they are installed on the server.

To set the Windows environment variables

- 1 Select **Start > Control Panel > System**.
- 2 Click the **Advanced** tab.
- 3 Click **Environment Variables** and, under System Variables, click **New**.
- 4 Enter the environment variable name you need to set (for example, `FrameMaker_PATH`). This value is the directory that contains the executable file. For example, type the following:

```
C:\Program Files\Adobe\FrameMaker7.2\FrameMaker.exe
```

5.3.7.8 Service Control Manager command line tool

Before you complete an automatic installation of PDF Generator on Windows, ensure that the Service Control Manager command line tool, `sc.exe`, is installed in the Windows environment. Some Windows servers do not have this software preinstalled. By default, the `sc.exe` file is installed in the `C:\Windows\system32` directory. Most OS installations have this tool installed. If you do not have the tool installed, it is available in the Windows Resource Kit for your specific version of Windows. To confirm that the tool is installed on your server, type `sc.exe` from a command prompt. The tools usage is returned.

5.3.7.9 Headless mode configuration

If you are running PDF Generator in a headless mode environment (that is, on a server without a monitor, keyboard, or mouse), the x11 libraries must be installed. Some flavors of Linux do not install these libraries by default; therefore, you must obtain the libraries and install them manually.

Note: *Activating x11 forwarding on a shell session causes the SOAP UI to create UI elements during SOAP requests, leading to request failures. To avoid request failures, you must add the `-Djava.awt.headless=true` JVM argument.*

5.3.7.10 Enabling multi-threaded file conversions and multi-user support for PDF Generator

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

Note: *Multi-threaded file conversions are not supported with Microsoft Word 2003 and PowerPoint 2003. In addition, Microsoft Excel (2003, 2007 and 2010 versions) is not supported. To enable multi-threaded file conversions, upgrade to Microsoft Word 2007 or 2010 and PowerPoint 2007 or 2010.*

Note: *Microsoft Excel and Microsoft Visio files are not converted simultaneously. During conversion, EXCEL.exe and VISIO.exe are watched in the task manager. The Visio file is processed only after processing on the Excel file is complete.*

Each instance of OpenOffice or PDFMaker is launched using a separate user account. Each user account that you add must be a valid user with administrative privileges on the LiveCycle Server computer. On 64-bit Windows, disable Windows UAC. For more information, see [“5.3.5 Configuring Windows installation”](#) on page 21

After your LiveCycle Server is configured, add LiveCycle user accounts in Administration Console. See the User accounts for multi-threaded file conversions section in the LiveCycle installation guide for your application server. To enable multiuser support for native files and OpenOffice files on a Windows environment, add a minimum of three users with the following permissions.

When you add users for PDF Generator native conversions, grant the user running the application server with the Replace a process level token privilege. For more information, see [“5.3.7.12 Granting the Replace a process level token privilege \(Windows only\)”](#) on page 29

Dismiss initial dialogs and automatic updates for native applications

Converting native files from PDF Generator requires dismissing any initial registration, activation, and Improvement program dialogs with the option to not show them again. Automatic updates for these applications also needs to be disabled as these update dialogs can cause failures on a running server.

The dialogs and automatic update need to be disabled for the user running the server and all user accounts configured under PDFG Accounts for multi-user support. The dialogs need to be dismissed for the following applications if installed on the server:

- Microsoft Word (Windows)
- Microsoft Excel (Windows)
- Microsoft PowerPoint (Windows)
- Microsoft Project (Windows)
- Microsoft Publisher (Windows)
- Microsoft Visio (Windows)
- OpenOffice (Windows/ Solaris / Linux)
- Adobe Acrobat (Windows)

- Adobe Photoshop (Windows)
- Adobe FrameMaker (Windows)
- Adobe PageMaker (Windows)
- Autodesk AutoCAD (Windows)
- Corel WordPerfect (Windows)

Disable error reporting on Windows Server 2003 or 2008 (Optional but recommended)

While converting a document to PDF using PDF Generator on Windows Server 2003 or 2008, Windows may report that the executable has encountered a problem and needs to close. However, it does not impact the PDF conversion as it continues in the background.

To avoid receiving the error, you can disable the Windows error reporting. For more information on disabling error reporting, see the following articles:

- Windows Server 2003 - <http://technet.microsoft.com/en-us/query/cc773392>
- Windows Server 2008 - <http://technet.microsoft.com/en-us/library/cc754364.aspx>

Additional configuration required for OpenOffice on Linux or Solaris

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

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

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

- 2 Allow all the LiveCycle users to make connections to the LiveCycle Server. For example, to allow a local user named `user1` the permission of making the connection to the LiveCycle Server, use the following command:

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

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

- 3 Restart the server.

5.3.7.11 Multi-user support for PDF Generator

To enable multi-user support for native files and OpenOffice files on a Windows environment, a minimum of three users with the following permissions must be added. On a AIX, Linux, or Solaris platform, create at least one user.

Platform	User permissions
Windows 2008 Server	Users with administrative privileges, UAC disabled and with replace a process level token privilege
Windows 2003 Server	Users with administrative privileges
AIX, Linux, and Solaris	Users with <code>sudo</code> privileges

When you add users for PDF Generator native conversions, you must grant the user running the application server with the *Replace a process level token* privilege. See “[5.3.7.12 Granting the Replace a process level token privilege \(Windows only\)](#)” on page 29.

5.3.7.12 Granting the Replace a process level token privilege (Windows only)

User accounts that are used to start the application server from a command prompt and not as a Windows service requires the *Replace a process level token* privilege. This setting is required for PDF Generator.

- 1 Click Start > Run, and then type `gpedit.msc`.
- 2 On the Group Policy dialog box, select **Computer Configuration > Windows Settings > Security Settings > Local Policies > User Rights Assignment**, and double click **Replace a process level token**.
- 3 Click **Add User or Group**, add the Windows user account that is used to open the command prompt from which the application server is started.
- 4 Restart Windows, and then start the application server.

5.3.8 Additional requirements for Connector for Documentum

If LiveCycle is connecting to Documentum, you must install Document Foundation Classes on machine hosting LiveCycle.

5.3.9 Additional requirements for Connector for IBM Content Manager

Note: For upgrade, these configurations are only required if you do not have Adobe® LiveCycle®10 Connector for IBM® Content Manager installed on your existing LiveCycle installation but will license it on LiveCycle or if you are performing an out-of-place upgrade on a new operating system.

Connector for IBM Content Manager requires the following software installed (both available from the IBM website):

- DB2 Universal Database Client
- IBM Information Integrator for Content (II4C)

See “Post-Deployment Activities” chapter in the Upgrading LiveCycle document for your application server.

5.3.9.1 Configure the connection for a single IBM Content Manager datastore

- 1 Start the DB2 Configuration Assistant.
- 2 Click **Selected > Add Database Using Wizard**.
- 3 Select **Manually Configure a Connection to a Database** and click **Next**.
- 4 Select **TCP/IP** and click **Next**.
- 5 Specify the following TCP/IP communication options and then click **Next**:
 - In the **Host Name** box, type the host name of the server hosting DB2 Content Manager.
 - Leave the Service Name box empty.
 - In the **Port Number** box, type the port number. The default DB2 Content Manager port number is 50000.
- 6 In the **Database Name** box, type the IBM Content Manager datastore name and, in the **Database Alias** box, type the alias name for the datastore and then click **Next**.
- 7 Click **Next** to accept the default data source settings.
- 8 In the **Operating System** list, select the operating system you are using and then click **Next**.
- 9 Specify the following system options and then click **Next**:
 - In the **System Name** box, type the server name hosting DB2. If you click **Discover**, DB2 Content Manager searches for the system name you specified and, if the system is not found, all of the DB2 instances are listed.

- In the **Host Name** box, type the name of the host, or click View Details to show the domain and IP address of the system you named in the previous step.
 - In the **Operating System** list, select the operating system (Windows, Linux, or AIX) on which you deployed DB2 Content Manager.
- 10 (Optional) To specify Security options, select **Use Authentication Value in Server's DBM Configuration** and click **Finish**.
- 11 In the Test Connection dialog box, test the connection as required.

5.3.9.2 Configure connections for multiple IBM Content Manager datastores

- 1 Configure the initial connection by following the steps in “[5.3.9.1 Configure the connection for a single IBM Content Manager datastore](#)” on page 29.
- 2 Add additional database connections by modifying the cmbicmsrvs.ini file (the file that stores the datastore information) as follows:
 - From a command prompt window, change the directory to *[II4C home]/bin* (for example, C:\Program Files\db2cmv8\ on Windows **or** /opt/IBM/db2cmv8 on AIX, Linux, or Solaris).
 - Run the cmbenv81.bat (Windows) or cmbenv81.sh (AIX, Linux, or Solaris) file to set the environment and the classpath for the Java Utilities of II4C.
 - Change the directory to *[II4C working directory]/cmgmt/connectors* where *[II4C working directory]* is one of the following paths:
(Windows) C:/Program Files/db2cmv8
(Linux, AIX) /home/ibmcmadm
(Solaris) /export/home/ibmcmadm
 - Run the command

```
java com.ibm.mm.sdk.util.cmbsrvsadm -a add -s <library server database name> -sm <database schema name>
```

where *<library server database name>* is the same as Database Alias configured in step 6 above.

Note: The following procedure allows users without DB2 rights to share the connection credentials through the *cmbicmenv.ini* file.

5.3.9.3 Configure a multiuser connection to the IBM Content Manager datastore

- 1 From a command prompt window, change the directory to *[II4C home]/bin* (for example, C:\Program Files\db2cmv8\ on Windows **or** /opt/IBM/db2cmv8 on AIX, Linux, or Solaris).
- 2 Run the cmbenv81.bat (Windows) or cmbenv81.sh (AIX, Linux, or Solaris) file to set the environment and the classpath for the Java Utilities of II4C.
- 3 Change the directory to *[II4C working directory]/cmgmt/connectors*, where *[II4C working directory]* is one of the following paths:
(Windows) C:/Program Files/db2cmv8
(Linux, AIX) /home/ibmcmadm
(Solaris) /export/home/ibmcmadm
- 4 Run the command

```
java com.ibm.mm.sdk.util.cmbenvicm -a add -s <library server database name> -u <database user ID> -p <database password>
```

where <library server database name> is the same as Database alias configured in step 6 above.

5.3.10 Additional requirements for Connector for IBM FileNet

These requirements are optional and required only if you are installing Adobe® LiveCycle® 10 Connector for IBM® FileNet.

Note: For upgrade, these configurations are only required if you do not have Connector for IBM FileNet installed on your existing LiveCycle installation but will license it on LiveCycle or if you are performing an out-of-place upgrade on a new operating system.

IBM FileNet 4.0

If LiveCycle is connecting to IBM FileNet 4.0 Content Engine, you must install the Content Engine Java Client. Use the IBM FileNet 4.0 content engine client installer located by default in C:\Program Files\FileNet\CEClient. During installation, select only the Java client component on the component selection screen.

For IBM FileNet 4.0 Process Engine settings, copy the pe.jar file from the Process Engine directory to the computer that will host LiveCycle. Create the directory C:\FileNetPE\files and copy the pe.jar file there. The Process Engine client install directory is now C:\FileNetPE.

IBM FileNet 4.5

If LiveCycle is connecting to IBM FileNet 4.5 Content Engine, you must install the Content Engine Java Client. Use the IBM FileNet 4.5 content engine client installer located by default in C:\Program Files\FileNet\CEClient. During installation, select at least one of the components from Application Engine or Process Engine on the component selection screen.

For IBM FileNet 4.5 Process Engine, you must install the IBM FileNet 4.5 Process Engine Client located by default in C:\Program Files\FileNet\BPMClient. During installation, select the **Other** option on the component selection screen.

IBM FileNet 5.0

If LiveCycle is connecting to IBM FileNet 5.0 Content Engine, you must install the Content Engine Java Client. Use the IBM FileNet 5.0 content engine client installer located by default in C:\Program Files\FileNet\CEClient. During installation, select at least one of the components from Application Engine or Process Engine on the component selection screen.

For IBM FileNet 5.0 Process Engine, you must install the IBM FileNet 5.0 Process Engine Client located by default in C:\Program Files\FileNet\BPMClient. During installation, select the Other option on the component selection screen.

5.3.11 Additional requirement for Adobe LiveCycle Content Services (deprecated)

PDF Generator must be installed on the server for Content Services to index Microsoft Office 2007 and 2010 documents (DOCX, XLSX, and PPTX files).

5.3.12 Additional upgrade requirements for Content Services (deprecated)

If your current LiveCycle environment includes a DB2 database and you are installing Content Services with your upgrade, you must create and run the following script before you perform your installation.

5.3.12.1 Prepare for installing Content Services with your upgrade

- 1 In a text editor, copy the following script:

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.

For DB2 9.1

```
connect to dbname;  
CREATE BUFFERPOOL BP32K SIZE 4000 PAGESIZE 32768 NOT EXTENDED STORAGE;  
CREATE TEMPORARY TABLESPACE dbname_TEMP_32K IN DATABASE PARTITION GROUP IBMTEMPGROUP  
PAGESIZE 32768 MANAGED BY SYSTEM USING ('DB2_root\dbname32k_TEMP') EXTENTSIZE 32  
PREFETCHSIZE 16 BUFFERPOOL BP32K;  
CREATE REGULAR TABLESPACE dbname_DATA_32K IN DATABASE PARTITION GROUP IBMDEFAULTGROUP  
PAGESIZE 32768 MANAGED BY DATABASE USING (FILE'DB2_root\dbname32k_DATA'9000) EXTENTSIZE 16  
PREFETCHSIZE 16 BUFFERPOOL BP32K;  
commit work;  
deactivate database dbname;  
activate database dbname;
```

For DB2 9.5

```
connect to dbname;  
CREATE BUFFERPOOL BP32K SIZE 500 PAGESIZE 32768;  
CREATE TEMPORARY TABLESPACE dbname_TEMP_32K IN DATABASE PARTITION GROUP IBMTEMPGROUP  
PAGESIZE 32768 MANAGED BY SYSTEM USING 'DB2_root\dbname32k_TEMP') EXTENTSIZE 32 PREFETCHSIZE  
16 BUFFERPOOL  
BP32K;  
CREATE REGULAR TABLESPACE dbname_DATA_32K IN DATABASE PARTITION GROUP IBMDEFAULTGROUP  
PAGESIZE 32768 MANAGED BY DATABASE USING (FILE'DB2_root\dbname32k_DATA'9000) EXTENTSIZE 16  
PREFETCHSIZE 16 BUFFERPOOL BP32K;  
commit work;  
deactivate database dbname;  
activate database dbname;
```

- 2 Make the following changes to the script:

- Replace the instances of *dbname* with the name of your LiveCycle database.
- Replace *DB2_root* with the path to the root directory where DB2 is installed.
- Ensure that no commands include line breaks and each command is terminated by a semicolon (;).
- Change 9000 in the following line based on your database size:

```
FILE'DB2_root\dbname32k_DATA'9000
```

This number specifies the minimum number of pages that is required to initialize the database. You can also change this number by using the DB2 administration tools after you initialize the database.

- 3 Save the text file in a location that DB2 Command Line Processor can access.
- 4 Open a DB2 command prompt and type the following command to run the script:

```
db2 -tf <path_to_script_file>/<script_file_name>
```

5.4 LDAP configuration

This configuration is optional and required only if you are using an LDAP directory to authenticate users.

When you upgrade LiveCycle Rights Management, LDAP configuration settings are automatically migrated.

If you do not have an existing LDAP server and database, install and configure your LDAP server and database according to the vendor's documentation. Make note of the LDAP administrator name and password to use during the LiveCycle configuration process. Configure LiveCycle to connect with the LDAP database after you install and deploy your services that are part of LiveCycle. This configuration is done by using the User Manager service.

See the [Upgrading to LiveCycle](#) document for your application server.

5.5 Global document storage directory

Note: Tasks in this section are required only if you are changing the location of your GDS directory on the system you plan to upgrade to LiveCycle.

The global document storage (GDS) directory is used to store long-lived files that are used within a process as well as critical LiveCycle product components. The lifetime of long-lived files is intended to span multiple restarts of a LiveCycle system, and can span days and even years. These files may include PDF files, policies, or form templates.

Long-lived files are a critical part of the overall state of many LiveCycle deployments. If some or all long-lived documents are lost or corrupted, the existing LiveCycle server may become unstable and unusable for an upgrade. Input documents for asynchronous job invocation are also stored in the GDS directory and must be available in order to process requests.

You must create the GDS directory before you initialize the LiveCycle database. See “[5.5.1 Location of the global document storage directory](#)” on page 33 for information.

You can reuse the existing GDS directory or copy it's contents to a new location.

5.5.1 Location of the global document storage directory

You configure the location of your GDS directory with Configuration Manager after you install LiveCycle. The GDS directory you specify should be highly available and should have low access time to enhance performance. If the GDS directory is on a shared network drive, it is recommended that you specify the location as `\\computer_name\GDS`.

If you changed the GDS location while installing LiveCycle, you can determine the location of the directory as follows:

- 1 Log in to LiveCycle Administration Console and click Settings > Core System Settings > Configurations.
- 2 Note the location that is specified in the Global Document Storage Directory box.

If you must change the GDS directory location after completing the installation (see [LiveCycle Administration Help](#)), you should plan an appropriate location for the GDS directory.

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

5.5.2 Sizing factors for the global document storage directory

The size of the global document storage directory depends on expected LiveCycle usage factors for the deployment. You should allocate a minimum of 10 GB of disk space for the GDS directory.

While upgrading to LiveCycle from a previous version of LiveCycle, you must factor in the existing GDS data while allocating space for the GDS directory. This actual size required for the GDS directory may be in excess of 10 GB.

The following factors also affect the sizing:

- The typical volume of documents that LiveCycle processes. Processing high volumes of documents requires a larger GDS directory.
- The typical size of documents that LiveCycle processes. Processing large documents requires a larger shared GDS directory.
- The complexity of documents that LiveCycle processes. Processing complex documents, such as documents that are processed by multiple services that are part of LiveCycle, require a larger GDS directory.

5.5.3 Securing the global document storage directory

Access to the GDS directory must be secure. The long-lived documents in this directory may contain sensitive user information, such as information that requires special credentials when accessed by using the LiveCycle SDK or user interfaces.

Use a security method that is appropriate to your operating system. It is recommended that only the operating system account that is used to run the application server has read and write access to this directory.

Note: *Deleting files or directories from the GDS directory can render the LiveCycle server inoperative.*

5.5.4 Backing up the global document storage directory

The global document storage directory should be backed up to allow administrators to restore LiveCycle in case of failure.

If the global document storage directory becomes unavailable or is lost due to failure, LiveCycle will not run until the GDS directory and database are restored by a consistent back up or LiveCycle is reinitialized with a new installation.

5.6 Installation considerations

5.6.1 Disabling Virus scans (Windows only)

To improve the speed of the installation, you may choose to disable any on-access virus scanning software for the duration of the installation.

5.6.2 Installing from network drives

It is recommended that you install LiveCycle only from the installation media or a local disk drive. Attempting to install the software over a network results in considerable delays in starting and installing. It is also likely that installing from a network drive will add to the length of the directory path, which will cause the LiveCycle installer to prevent the installation from proceeding.

5.6.3 Manual use of Acrobat restricted

If you installed the PDF Generator for native document conversion, use of the bundled Acrobat installation is restricted to the Generate PDF service and is not licensed for any other use.

5.6.4 Temporary directory

LiveCycle requires a temporary directory to store documents that are larger than the maximum inline size set for document objects. For detailed information on how you can improve the performance of your LiveCycle Server by specifying an appropriate value for this setting, see this [blog on the Document Max Inline Size performance knob](#).

(AIX, Linux, and Solaris only) If a non-root user is running the application server, the user must have read, write, and execute permissions on the specified temporary directory.

Important: (For cluster deployments only) Future upgrades might fail if you specify a shared network directory as the temporary directory.

5.7 LiveCycle IPv6 support

LiveCycle includes IPv6 support. The default configurations defined in the installation documentation for LiveCycle set IPv4 as the default IP protocol because this protocol has the most compatibility with third-party infrastructure.

Do not enable IPv6 unless your deployment must use it. The number of supported platform configurations is reduced when enabling IPv6 support with LiveCycle. You should verify that all third-party software, hardware, and networks that you plan to use have IPv6 support before you attempt to enable IPv6.

Note: If you are enabling CIFS in an IPv6 environment, you must explicitly enable IPv6 configuration after you configure your LiveCycle installation using Configuration Manager. See “Enabling CIFS in IPv6 mode” in the guide for your application server.

5.7.1 Supported IPv6 configurations

Not all infrastructure components support IPv6. For example, Oracle database does not support IPv6. You can use these databases by configuring the connection between the application server and the databases with IPv4, and the remaining communications over IPv6.

- Databases that support IPv6: Microsoft SQL Server 2005 and 2008, DB2 9.1 or later versions of 9.x
- Application servers that support IPv6: JBoss 5.1.0, Weblogic 11g, WebSphere 7.0.0.15.

5.7.2 IPv6 implementation guidelines

When you use IPv6 implementation either partially or fully, keep the following points in mind:

- After installing LiveCycle, do not use the option to start the Configuration Manager directly from the LiveCycle installer. Instead, navigate to the `[LiveCycle root]\configurationManager\bin\IPv6` directory, and run the IPv6-specific script (`ConfigurationManager_IPv6.bat` or `ConfigurationManager_IPv6.sh`) to launch the Configuration Manager.
- If you have chosen to validate the application server configuration using the Configuration Manager, the validation will fail after you enable IPv6 for the application server. You can ignore this error message during the process. After you restart the application server in the IPv6 mode, the application server can connect to the database.
- *(WebLogic only)* You need to enable IPv6 for the managed servers only. The Admin Server can continue to run on IPv4, and can be accessed with its IPv4 address. However, the managed server that you have started in IPv6 environment can only be accessed through its IPv6 address or a hostname resolved through DNS.
- *(WebLogic only)* Even if you are running Configuration Manager on the same computer that hosts the application server, you must provide the listen address of the managed server for bootstrapping and deploying LiveCycle modules. This listen address must be the DNS name that resolves to IPv6 address of the computer.

- To have a pure IPv6 communication with the database server, modify both EDC_DS and IDP_DS connection settings to use the hostname of the database which resolves to a numeric IPv6 address.
- Many software components such as database drivers do not completely support numeric IPv6 addresses. So, it is recommended that you use a DNS-resolved hostname instead of numeric IPv6 addresses.
- Ensure that name used for mapping IPv6 is added to the CSRF filter section. If the name is not added, see Preventing CSRF attacks in [Administration Help](#).

Note: Name used for mapping IPv6 must not contain square brackets ([]).

- In an IPv6 environment, if you are using Microsoft SQL Server, you should specify the database server IP address in the following format. Note that in this string, ;serverName is a keyword, and so must not be replaced with the actual server name.

```
jdbc:sqlserver://;serverName=<IPv6 address>; portNumber=<port>;databaseName=<db_name>
```

Here, instead of the numeric IPv6 address, you can specify the hostname of the SQL Server database.

5.7.3 Configuring IPv6 for JBoss

- 1 You can download and install JBoss from <http://www.jboss.org/jbossas/downloads/> or obtain the jboss.zip file from the third-party directory on the installation media and extract the bundled JBoss.
- 2 Modify adobe-ds.xml and the database-specific data source configuration file to connect to the LiveCycle database.
- 3 Modify the login-config.xml file to connect to the LiveCycle database.
- 4 Modify the following files to enable IPv6:

- **(JBoss 5.1 on Windows)** [appserver root]\bin\run.conf.bat
- **(JBoss 5.1 on other platforms)** [appserver root]\bin\run.conf
- **(JBoss 4.2.1 on Windows)** [appserver root]\bin\run.bat
- **(JBoss 4.2.1 on other platforms)** [appserver root]\bin\run.sh

Do the following in this file:

- Change -Djava.net.preferIPv4Stack=true to -Djava.net.preferIPv6Stack=true
 - Add the -Djava.net.preferIPv6Addresses=true argument.
 - [appserver root]\bin\service.bat: Replace - b 0.0.0.0 with -b <hostname mapped to IPv6 address>
- 5 Launch Configuration Manager by invoking the [LiveCycle root]\configurationManager\bin\IPv6\ ConfigurationManager_IPv6.bat or ConfigurationManager_IPv6.sh script.
 - 6 In the Configuration Manager, select the steps to configure EAR files, bootstrap and deploy LiveCycle modules.
 - 7 After the Configuration Manager process is completed, copy these EAR files to the [appserver root]\server\<profile_name>\deploy directory.
 - 8 Start JBoss from a command line.
 - 9 Provide Configuration Manager hostname of the computer that is mapped to its IPv6 address and then bootstrap the application server to deploy the LiveCycle modules.

5.7.4 Configuring IPv6 for WebLogic

- 1 Install LiveCycle using the installer.

- 2 Do not launch the Configuration Manager when the installer finishes. Launch Configuration Manager by invoking the `[LiveCycle root]\configurationManager\bin\IPv6\ConfigurationManager_IPv6.bat` or `ConfigurationManager_IPv6.sh` script.
- 3 Select the options to configure LiveCycle EARs, WebLogic application server, and verify the application server settings using Configuration Manager.

Note: You will get an error message that the Configuration Manager validation of data source has failed. This is because the application server is not yet started in the IPv6 mode, and the data source is now configured in the IPv6 mode. You can ignore this warning at this stage.

- 1 From the WebLogic Server Administration Console, change the application **Server Start** arguments of the managed server to enable IPv6.
 - Change `-Djava.net.preferIPv4Stack=true` to `-Djava.net.preferIPv6Stack=true`.
 - Add the `-Djava.net.preferIPv6Addresses=true` argument.
- 2 Change the listen address of the managed server to enable it using IPv6 address.
 - In the WebLogic Server Administration Console, select **Environment** > **Servers** > **[managed server name]/Configuration** tab.
 - In the Listen Address field, enter the hostname of the computer. Ensure that this hostname resolves to the IPv6 address of this computer.
- 3 Save the changes, and then restart the managed server.
- 4 Launch Configuration Manager by invoking the `[LiveCycle root]\configurationManager\bin\IPv6\ConfigurationManager_IPv6.bat` or `ConfigurationManager_IPv6.sh` script.
- 5 In the Configuration Manager, select the steps to deploy EAR files, bootstrap, deploy LiveCycle modules.
- 6 Enter the same hostname as provided in the listen address field of the managed server.

Note: Even if you are running Configuration Manager on the same computer, you must provide the listen address of the managed server for bootstrapping and deploying LiveCycle modules.

5.7.5 Configuring IPv6 for WebSphere

- 1 Install LiveCycle using the installer script. After the installation is complete, do not start the Configuration Manager when the installer prompts.
- 2 Navigate to the `[LiveCycle root]\configurationManager\bin\IPv6` directory, and run the IPv6-specific script (`ConfigurationManager_IPv6.bat` or `ConfigurationManager_IPv6.sh`) to launch LCM.
- 3 Use the Configuration Manager options to configure EAR and the application server.
- 4 Follow the steps in the Configuration Manager to configure the application server. While configuring database, provide hostname of database that is mapped to IPv6 address.
- 5 Validate the application server configuration by Configuration Manager. Ignore the warning if data source validation fails. You can validate data sources from WebSphere Administrative Console.
- 6 On the WebSphere Administrative Console, select **Servers** > **Server Types** > **WebSphere application servers** > **[server name]** > **Java and Process Management** > **Process definition** > **Java Virtual Machine**. In **Generic JVM arguments**, add the `-Djava.net.preferIPv6Addresses=true` argument.
- 7 Select **Servers** > **Server Types** > **WebSphere application servers** > **[server name]** > **Java and Process Management** > **Process definition** > **Java Virtual Machine**, and click **Custom Properties**. Change `java.net.preferIPv4Stack=true` to `java.net.preferIPv6Stack=true`.

- 8 Manually deploy the EAR files to WebSphere Application Server by using WebSphere Administrative Console. Configured EAR files are available at `[LiveCycle root]/configurationManager/export` folder.
- 9 Restart WebSphere Application Server.
- 10 Navigate to the `[LiveCycle root]\configurationManager\bin\IPv6` directory, and run `ConfigurationManager_IPv6.bat` or `ConfigurationManager_IPv6.sh` to launch Configuration Manager.
- 11 In the Configuration Manager, select the options to bootstrap and deploy LiveCycle modules. Provide the application server hostname that is mapped to IPv6 address.

Note: After you start the application server in an IPv6 environment, (with the flag - `Djava.net.preferIPv6Stack=true`), you can access it only through its IPv6 address or hostname mapped to IPv6 address.

5.8 Server configuration for enabling CIFS

To enable file access to Content Services as a network folder for Windows clients of LiveCycle, you need to enable Common Internet File System (CIFS) in Content Services.

Note: If you are enabling CIFS in an IPv6 environment, you must explicitly enable IPv6 configuration after you configure your LiveCycle installation using Configuration Manager. See “Enabling CIFS in IPv6 mode” in the guide for your application server.

5.8.1 Creating a virtual interface (AIX, Linux, and Solaris only)

If you want to enable CIFS on LiveCycle deployed on AIX, Linux, or Solaris platform, you must create a virtual interface and assign it an IP address on the server that runs LiveCycle. This is required because the CIFS protocol uses the same ports that are used by Samba service on AIX, Linux, or Solaris computers. You specify this virtual IP address as the alternate IP address when you enable CIFS using the Configuration Manager.

If your LiveCycle implementation is on IPv6, you should create virtual IPv6 interfaces on the CIFS server. The interfaces that you create should be within the same network as the CIFS clients. See the documentation related to your operating system for more information.

Note: You should add the virtual interface that you create to the `/etc/hosts` file to make them persist across reboots.

5.8.2 Configuring Windows Server for CIFS

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

Note: Ensure that the CIFS server has a static IP address for Java-based CIFS implementation. For Windows native implementation, a static IP address is not required.

Note: The user who has enabled **remember password** would be able to log in to the repository even after his Contentspace role is revoked.

5.8.2.1 Enable NetBIOS over TCP/IP

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

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

5.8.2.2 Add additional IP address

Note: This step is required only for Java-based CIFS implementation.

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

5.8.2.3 Disable SMB over NetBIOS registry (Windows 2003 only)

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

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

5.8.2.4 Disable File and Printer Sharing (Windows Server 2008 only)

Important: After you disable file and printer sharing with this step, you will not be able to access the server directly using Windows file sharing protocol. This computer will not display in the Windows network view.

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

For additional settings to enable CIFS on Windows Server 2008, see [this](#) article.

5.9 Upgrade: Processes with document form variables and digital signatures

If you are upgrading from a previous version of LiveCycle and changing your LiveCycle Server, you may disrupt any processes that use the document form variable or digital signatures. This is because these forms are rendered only once, setting the submit URL. Changing the server breaks the certificate.

Choose the solution that is most appropriate for your LiveCycle environment from the following solutions:

Solution 1: Complete all processes that use a form document variable before you upgrade or move to the remote server. Use this method if you maintain legacy LiveCycle servers after the upgrade. This approach also eliminates the need for *throw-away* work to be done to manage the redirection of the form submissions. This method is not practical if you have many outstanding processes.

Solution 2: If the server being upgraded is not being decommissioned, a reverse proxy approach is preferable. With this method, you maintain the reverse proxy on the old system until all the migrated processes are completed.

Solution 3: You can use the Apache `mod_rewrite` module to modify the embedded URLs in each form as they are delivered to the client.

Note: If your LiveCycle implementation is on IPv6, clients using EJB invocation for PDF creation report exceptions. This is a [known issue](#) attributed to Sun JDK 6.

5.10 Central Migration Bridge service

The Central Migration Bridge service helps you to migrate existing applications from your Adobe Central Pro Output Server or Adobe Web Output Pak products to work with the Output service. The Central Migration Bridge service allows you to use your current IFD/MDF templates, data transformation scripts, and DAT files in a LiveCycle environment as part of an overall migration strategy.

Note: The Central Migration Bridge is useful only if you have existing Central Pro applications to migrate.

Authorized use of Central Migration Bridge

To use the Central Migration Bridge service, you must have a valid license for Central Pro Output Server 5.7 or an executed Central Pro Output Server 5.7 migration agreement. To install Central Pro Output Server 5.7, use your existing media and existing product authorization code (PAC). Your PAC is for a specific operating system platform; if this differs from the operating system platform on which you are installing LiveCycle, you will need to acquire a PAC for that operating system. Contact your Adobe representative for more information regarding migration, or acquiring Central Pro Output Server 5.7 media or PAC.

Installation considerations

The Central Migration Bridge service interacts directly with the Central Pro (version 5.7) executable files. You must have Central Pro installed on the same server as LiveCycle, but it is not a prerequisite to installing LiveCycle (that is, it can be installed before or after LiveCycle). Consult the Central Pro documentation set for installation instructions.

Important: Do not start Central Pro or change its properties to run automatically.

On Windows, the Central Pro service *Adobe Central Output Server* is installed as a manual service. Do not run the service or change its properties to run automatically.

On AIX, Linux, or Solaris, do not start the Central Pro daemon *jfdaemon*. If you edited the start-up script of your computer to launch *jfdaemon* when restarting the computer, change the script to prevent the daemon from being launched automatically. (See the Central Pro installation documentation.) Do not start Central from the command line by launching the *jfserver* process.

Note: The LiveCycle User that invokes the Central Migration Bridge service must have access rights to the Central Pro install directory as well as execute permissions on the Central Pro executable files.

LiveCycle turnkey installations

If you are installing and configuring a LiveCycle turnkey environment using Express mode, the Central Migration Bridge service will be installed and configured by default - you will not be prompted for any input.

Note: Ensure that the Adobe Central Pro product is installed in the default directory.

LiveCycle custom installations

If you are installing and configuring LiveCycle using the Custom mode (Partial turnkey or Manual), Configuration Manager will prompt you to include Central Migration Bridge in the deployment.

By default, the service will use the default Central Pro installation path. If Central Pro is installed in a different location, update the [Central Install Dir] configuration for the Central Migration Bridge Service by going to Administration Console.

When you have finished installing LiveCycle, if Central Pro is not installed in the default location, do the following steps to point LiveCycle to the correct directory:

- 1 Log in to Administration Console.
- 2 Click **Services > Applications and Services > Service Management**.
- 3 Click the **Central Migration Bridge:1.0** service.
- 4 Type the correct path to the Central Pro install directory.
- 5 Click **Save**.

Note: This configuration can also be made in Workbench. See *Creating and managing processes*.