# Document Producer

## Administrator's Guide

# Contents

# Overview

*Lexmark<sup>TM</sup> Document Producer* is a server-based electronic-forms application used to merge variable data with standard forms. After merging data, you can print the resulting form, send it as an attachment to an e-mail message, or save it to a file on the network.

Lexmark Document Producer is used with a *Lexmark Distributed Intelligent Capture* system. For more information, see the *Lexmark Distributed Intelligent Capture Administrator's Guide*, available at **http://support.lexmark.com**.

Using Document Producer, you can introduce or improve electronic forms in a variety of systems, such as:
- Eliminating preprinted form inventory and improving the appearance of forms in a legacy system, such as AS/400
- Using data from an *enterprise content management* (ECM) system to produce forms
- Adding forms to an existing Lexmark Distributed Intelligent Capture workflow solution

*Formsets*, which are custom files used to store the structure of a standard form, are created with Forms Composer. Activation conditions set during the design of a formset determine which forms are used with received data. If multiple formsets contain activation conditions that apply to a single job, then the formset that comes first alphabetically is used. For more information on creating forms with Forms Composer, see the documentation that came with Forms Composer or the relevant training course.

Lexmark Distributed Intelligent Capture workflow solutions may include scripts that provide advanced management of forms merge operations or modify merge data and output documents. Additionally, formsets may be included with a workflow solution to be installed automatically when the solution is uploaded. Formsets that are not included with a solution may still be linked by a solution developer and used with a solution.

## Understanding the Document Producer architecture

1 An input queue on a print server or workstation, usually a normal Windows print queue configured to deliver output as generic text, accepts text data as a print job.

2 A *virtual forms printer* in the Lexmark Distributed Intelligent Capture system receives the print job from the input queue.

   **Note:** E-forms virtual printer licenses are required for using virtual printers. For more information on adding licenses to an existing Lexmark Distributed Intelligent Capture system, see .

3 The Lexmark Distributed Intelligent Capture system locates the first formset with activation conditions that match the input data and merges the input data with the formset to generate a completed form.

4 The completed form is delivered according to the settings of the virtual forms printer, which may include printing, e-mailing, or saving to a file on the network. Further manipulation of the form and delivery may be included using a Lexmark Distributed Intelligent Capture script.

# Understanding the Lexmark Distributed Intelligent Catpure system

Lexmark Document Producer runs on a Lexmark Distributed Intelligent Capture system.

## System components

- **Clients**—Clients can be either printers or workstations that use *Select'N'Send* (SnS) or the *Lexmark Document Server Port*. The document capture and confirmation stages of a job occur at a client, and, in the case of printer clients, prompts may be presented to the user to collect information during document processing and document routing.
- **Load balancer**—The load balancer receives jobs from clients and balances those jobs across servers, providing a transition between document capture and document processing stages of a job.
- **Lexmark Distributed Intelligent Capture servers**—The servers process incoming jobs, managing document processing and document routing stages of a job.
- **Database**—The database maintains information about clients, solutions, settings, and jobs.

## Lexmark Management Console

*Lexmark Management Console* (LMC) provides system administration for Lexmark Distributed Intelligent Capture. LMC is a Web application hosted on the Lexmark Distributed Intelligent Capture servers and accessed through the computer where the load balancer is installed. LMC is accessible from anywhere on the network using a Flash plug-in with Internet Explorer or Mozilla Firefox.
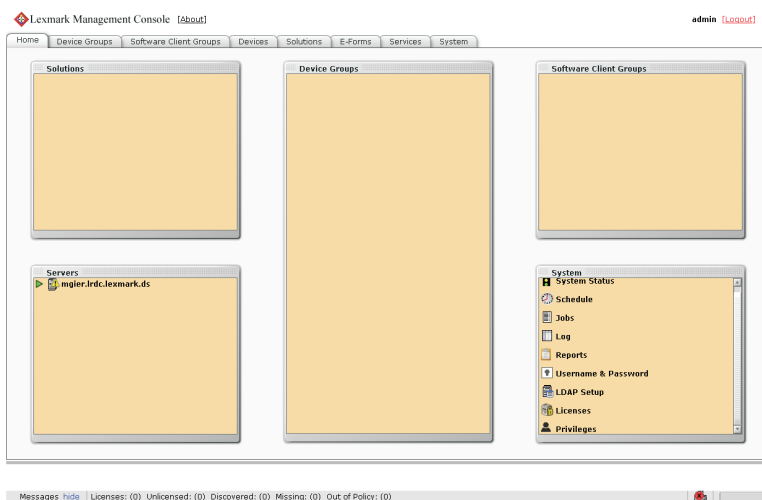
## Supported printers

| e-Task 5 printers[4] | e-Task 4 printers | e-Task 3 printers | e-Task 2+ printers | e-Task 2 printers | e-Task printers[1] | X642 printers |
|---|---|---|---|---|---|---|
| **MFPs**<br>• CX860<br>• CX825<br>• CX820<br>• CX725<br><br>**SFPs**<br>• CS820<br>• CS725<br>• CS720 | **7- or 10-inch screen MFPs**<br>• MX610, MX611<br>• MX6500e<br>• MX710, MX711<br>• MX810, MX811, MX812<br>• MX910, MX911, MX912<br>• CX510<br><br>**4.3-inch screen MFPs**<br>• MX410, MX510, MX511<br>• CX410<br><br>**7-inch screen SFP**<br>• MS812de<br><br>**4.3-inch screen SFPs**<br>• MS610de<br>• CS510<br>• MS810de<br>• MS911 | **MFPs**<br>• X548<br>• 6500e<br>• X746, X748<br>• X792<br>• X925<br>• X950, X952, X954<br><br>**SFPs**<br>• C748<br>• C792<br>• C925<br>• C950 | **MFPs**<br>• X463, X464, X466<br>• X651, X652, X654, X656, X658<br>• X734, X736, X738<br>• X860, X862, X864<br><br>**SFP**<br>• T656[3] | **MFPs**<br>• X644, X646<br>• X772<br>• X782<br>• X850, X852, X854<br>• X940, X945<br><br>**SFPs**<br>• T654[3]<br>• W850[3] | **MFPs**<br>• X620[2]<br>• X632, X634[2]<br>• X752[2]<br>• X820[2]<br>• X830, X832[2]<br>• X912[2]<br><br>**SFPs**<br>• C520, C522, C524[3]<br>• C530, C532, C534[3]<br>• C734, C736[3]<br>• C780, C782[3]<br>• C920[3]<br>• C935[3]<br>• E450[3]<br>• E460, E462[3]<br>• T640, T642, T644[3]<br>• T650, T652[3]<br>• W840[3] | X642 |

[1] These printers do not support eSF applications used in hybrid solutions.

[2] These printers may be identified as "C," "T," or "W" models in Lexmark Management Console.

[3] These single-function printers (SFPs) do not support all prompts supported by MFPs. For a list of supported prompts, see "Prompts supported by single-function printers" on page 57.

[4] Only printers with firmware level 2 or later are supported.

**Notes:**

- For more information on the latest device and firmware level support, see the *Readme* file.
- Some printer models do not support double-byte characters. For more information, see "Double-byte character support" on page 57.

# Installing Lexmark Distributed Intelligent Capture

## Minimum and recommended system requirements

| Category | Required | Recommended for enterprise systems |
| --- | --- | --- |
| Operating system | <ul><li>Windows Server 2008 R2 Standard or Enterprise Edition (x64)</li><li>Windows Server 2008 Standard or Enterprise Edition with SP2 (x86 and x64)</li><li>Windows Server 2003 R2 Standard or Enterprise Edition with SP2 (x86 and x64)</li><li>Windows Server 2003 Standard Edition with SP2 (x86 and x64)</li></ul>**Note:** An x86-based system refers to a 32-bit operating system and an x64-based system refers to a 64-bit operating system. | Windows Server 2008 R2 (x64) |
| Processor | 2GHz dual-core | Dual 2.5GHz quad-core Intel Xeon or AMD Opteron |
| RAM | 2GB | 4GB |
| Hard disk drive | 20GB free space for each system component<br><br>**Note:** The listed space requirement includes both space for the application and free space for operation, but requirements may vary depending on system complexity and number of jobs. | Configuration 1-N, X-N, or X-Y-N:<ul><li>Database and load balancer<ul><li>Operating system and server configured for LMC installed on two 15000 RPM Serial-Attached SCSI drives configured as a RAID 1 array with at least 80GB free space</li><li>Database and load balancer installed on four 15000 RPM Serial-Attached SCSI drives configured as a RAID 5 array, with at least 300GB free space</li></ul></li><li>Servers<ul><li>Operating system and server configured for jobs installed on four 15000 RPM Serial-Attached SCSI drives configured as a RAID 5 array with at least 80GB free space</li></ul></li></ul> |

| Category | Required | Recommended for enterprise systems |
|---|---|---|
| Network speed | 100Mbps network<br><br>**Note:** Network speed affects the time required to perform a solution, and speed requirements depend on each solution. Solutions that require intensive processing and more network traffic may require Gigabit Ethernet to run at a satisfactory speed. | Gigabit Ethernet using dual-port network adapters |
| Network name resolution | *Domain Name System* (DNS) or *Windows Internet Name Service* (WINS)<br><br>**Notes:**<br><br>• Local hosts files can be used instead of external DNS.<br>• Contact Lexmark Professional Services for support of other network systems. | |
| Static addressing | • The database must have a static IP address if it is installed on a cluster.<br>• The load balancer must have a static IP address if:<br>  – It is installed on a cluster.<br>  – Any e-Task printers are used with the system.<br>  – Any printers used with the system do not have a DNS server configured. | Static IP addresses are recommended for all system components and any e-Task printers used with the system. |

**Note:** The database requires the most system resources and disk I/O and therefore should be installed on the fastest hardware with the fastest disk I/O infrastructure available. Second in resource usage is the load balancer.

| Category | Requirement |
|---|---|
| Browser | Internet Explorer 7.0 or later, or Mozilla Firefox 9.0 or later, with Adobe Flash Player 10 or later. Cookies should be enabled for the address where LMC is accessed |
| Video | Capable of displaying 1024 x 768 or higher resolution |

| Category | Requirement |
|---|---|
| Virtual machine monitor | VMware ESX 3.0.1 or later |

**Note:** It is not recommended to install the database on a virtual machine.

**Client software operating system compatibility**

Select'N'Send and the Lexmark Document Server Printer Port can be used on the following operating systems:

- Windows Server 2008 R2 Standard or Enterprise Edition (x86 and x64)
- Windows Server 2008 Standard or Enterprise Edition with SP2 (x86 and x64)
- Windows Server 2003 R2 Standard or Enterprise Edition with SP2 (x86 and x64)
- Windows Server 2003 Standard or Enterprise Edition with SP2 (x86 and x64)
- Windows 7 (x86 and x64)
- Windows Vista with SP2 (x86 and x64)
- Windows XP Professional with SP2 (x86 and x64)

**Notes:**

- An x86-based system refers to a 32-bit operating system and an x64-based system refers to a 64-bit operating system.
- Enterprise Editions and Enterprise x64 Editions of Windows Server support an active/passive or active/active clustered print server with the Lexmark Document Server Printer Port.
- 32-bit Enterprise Editions of Windows Server support Citrix Presentation Server 4.0.

# Avoiding conflicts with other software

- Install each system component on a computer with a new Windows installation and with no other software installed.
- Avoid installing other software that includes these applications on the same computer where Lexmark Distributed Intelligent Capture components are installed:
  - Apache HTTP Server
  - Apache Tomcat
  - Firebird database server
- Microsoft *Internet Information Services* (IIS) may conflict with Apache HTTP Server and should not be installed.

# Ports used by the Lexmark Distributed Intelligent Capture system

Communication using the following ports should be allowed on the network.

**Notes:**

- Ports depend on the implementation of each Lexmark Distributed Intelligent Capture system and may differ from the listing shown here.
- Any ports used by forms printers are determined by the Lexmark Distributed Intelligent Capture administrator.

| Component | Port | Protocol | Function |
|---|---|---|---|
| Database | 3050 | TCP | Database communications |
| | 8001 | TCP | Backup/restore agent |

| Component | Port | Protocol | Function |
|---|---|---|---|
| Load balancer | 4113 | TCP | Web adapter (JMX) |
| | 9700 | TCP | Profile submission to e-Task printers, Web adapter (JMX) |
| | 9705 | TCP | Apache agent |
| | 9780 | TCP | Load balancer communications, including LMC |
| Server | 4111 | TCP | JMX |
| | 5111 | TCP | RMI |
| | 8009 | TCP | AJP/Tomcat connector (load balancer worker) |
| | 9743 | TCP | Profile submission to printers using SSL |
| | 9780 | TCP | Profile submission to printers |
| | 9788 | TCP | Profile submission to printers |
| Printer | 79 | TCP | Finger |
| | 161 | UDP | SNMP, device discovery |
| | 5000 | TCP | Policy updates, ObjectStore plain text communication |
| | 5353 | UDP | Multicast DNS |
| | 6000 | UDP | Device discovery, ObjectStore communication using XML protocol |
| | 6100 | UDP | Device discovery, policy updates, *Lexmark Secure Transport* (LST) encrypted data |
| | 6110 | TCP | Device discovery, policy updates, LST authentication and negotiation |
| | 9100 | TCP | Printing, policy updates |
| | 9300 | UDP | Device discovery, NPA protocol UDP communications |
| | 9500 | TCP | NPA protocol TCP communications |
| Software clients | 9780 | TCP | Profile submission |
| | 9788 | TCP | Profile submission |

# Activating Lexmark Distributed Intelligent Capture licenses

**Notes:**

- If your Lexmark reseller has provided you with license files, then save them in a folder accessible to the server, skip the following procedure, and then continue with the server installation using the provided license files.
- If your Lexmark reseller manages your licenses, then you may not be provided with an entitlement ID. Contact your reseller to obtain the proper licenses.
- When using a failover cluster for the load balancer, a complete set of licenses (including a server license, printer licenses for all printers, a client license if applicable, and e-forms virtual printer licenses if applicable) must be activated for the host ID of *each* node in the cluster and made available on the shared drive.
- Before installing the load balancer, the appropriate licenses must be activated. Activation associates the server license, each printer license, and, if applicable, a client license with the physical address of the load balancer in the Lexmark Distributed Intelligent Capture system and generates license files that will only work with that system.

**1** On the computer where you want to install the load balancer or workgroup system, click **Activate and Download License File(s)** in the installation window.

**2** Enter the entitlement ID provided with the server software package.

**3** Copy the host ID displayed on the installation window.

> **Notes:**
>
> - The host ID is the physical address (MAC address) of the network adapter in the server, without hyphens or other punctuation.
> - If multiple network adapters are present, then a list of host IDs are shown. Any listed host ID is appropriate as long as the associated network adapter remains in the server. However, using the host ID associated with the network adapter connected to the same network as your Lexmark Distributed Intelligent Capture system may help avoid future confusion. For more information, see "Finding the host ID" on page 46.

**4** Click **Launch Lexmark Licensing Portal**.

**5** In your Web browser, click **Manage Entitlements**.
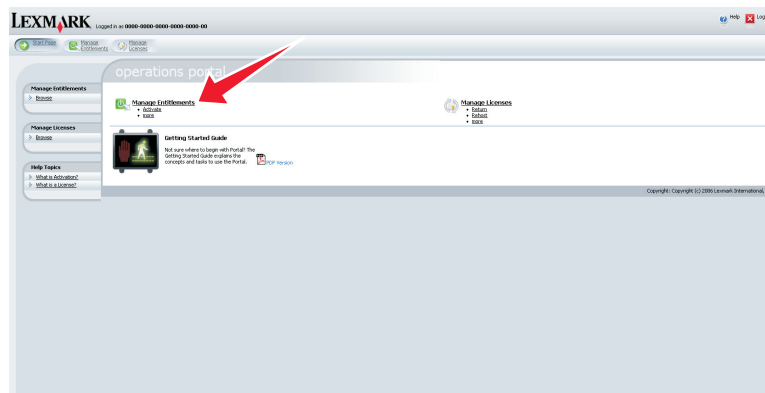
**6** Activate and download the license for your Lexmark Distributed Intelligent Capture server system:

    **a** Select the line for the product Lexmark Distributed Intelligent Capture Server, and then click **Activate**.



    **b** In the first Host ID field, enter the host ID determined in <u>step 3</u>.

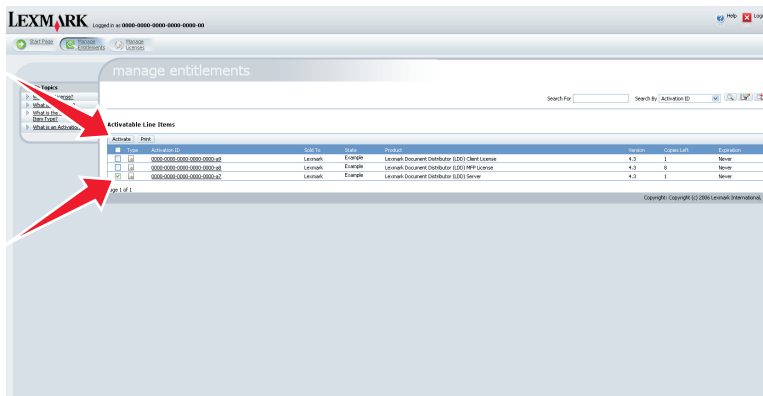       **Note:** The host ID is the physical address (MAC address) of the network adapter in the server, without hyphens or other punctuation.

    **c** In the Fulfill Count field, type **1**.

    **d** Click **Generate**.
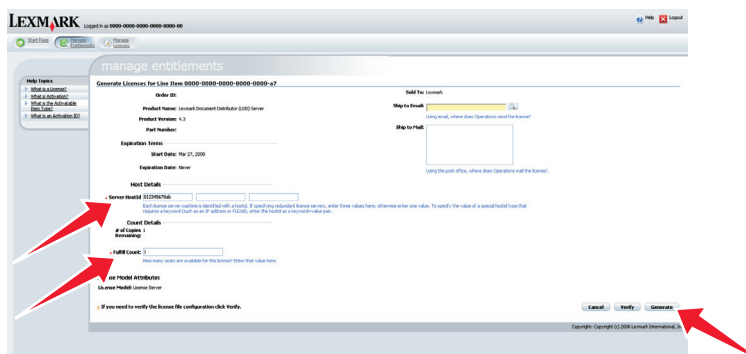


    **e** Click **Save To File**, and then save the file using a descriptive file name, such as `server.lic`, to a folder accessible to the load balancer.
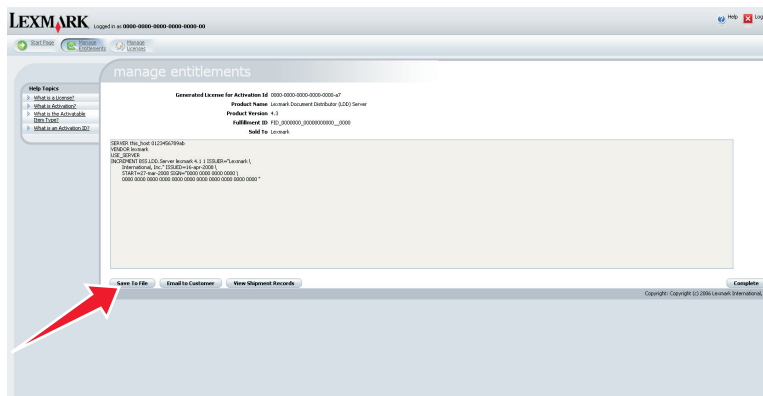


    **f** Click **Complete**.

**7** Activate and download the license for using Lexmark Distributed Intelligent Capture with your printers:

   **a** Select the line for the product Lexmark Distributed Intelligent Capture MFP License, and then click **Activate**.
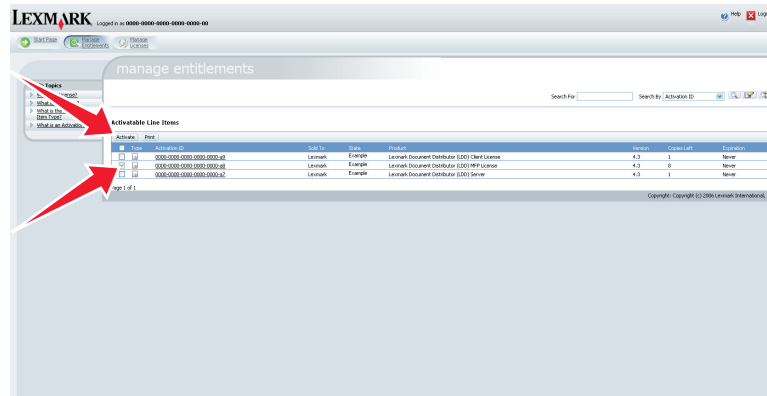


   **b** In the first Host ID field, type the host ID determined in step 3.

   **c** In the Fulfill Count field, type the number of printers associated with the server you are licensing.

   **d** Click **Generate**.
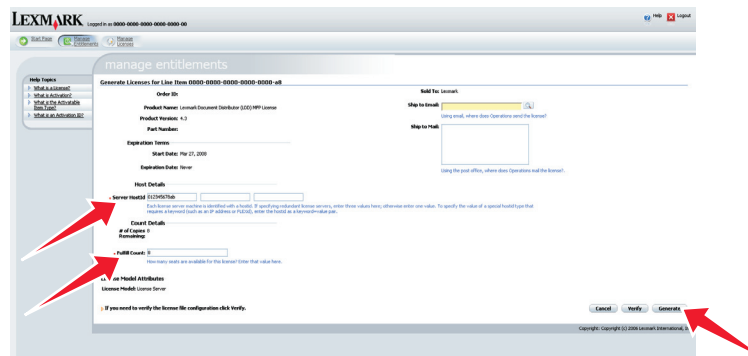


   **e** Click **Save To File**, and then save the file using a descriptive file name, such as `printer.lic`, in the same folder used in step 6.

      **Note:** Use a file name different from any other saved license files so they are not overwritten.
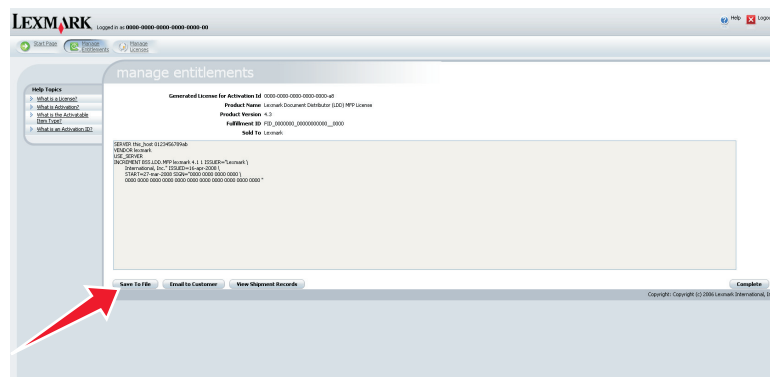


   **f** Click **Complete**.

**8** If you are using e-forms, then activate and download the license for e-forms virtual printers:

    **a** Select the line for the product Lexmark Distributed Intelligent Capture EFVP License, and then click **Activate**.

    **b** In the first Host ID field, type the host ID determined in step 3.

    **c** In the Fulfill Count field, type the number of e-forms virtual printers associated with the server.

    **d** Click **Generate**.

    **e** Click **Save To File**, and then save the file using a descriptive file name, such as `efvp.lic`, in the same folder used in step 6.

        **Note:** Use a file name different from any other saved license files so they are not overwritten.

    **f** Click **Complete**.

**9** If you are using software clients with your Lexmark Distributed Intelligent Capture system, then activate and download the license for software clients:

    **a** Select the line for the product Lexmark Distributed Intelligent Capture Client License, and then click **Activate**.
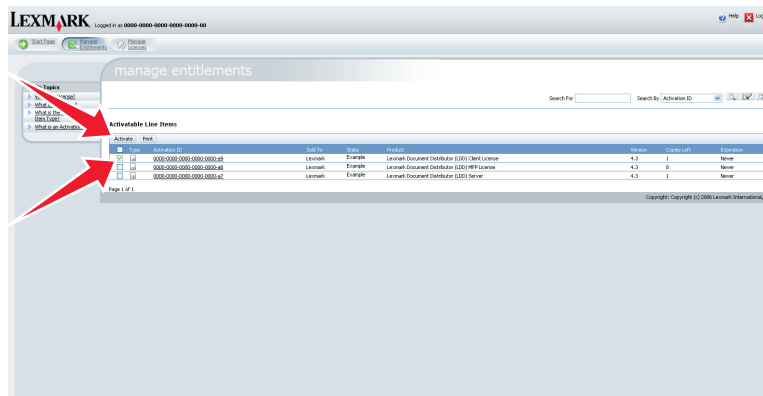


    **b** In the first Host ID field, type the host ID determined in step 3. If you are using a failover cluster for the load balancer, then type the host IDs for standby nodes in the additional host ID fields.

    **c** In the Fulfill Count field, type the number of software clients associated with the server.

    **d** Click **Generate**.
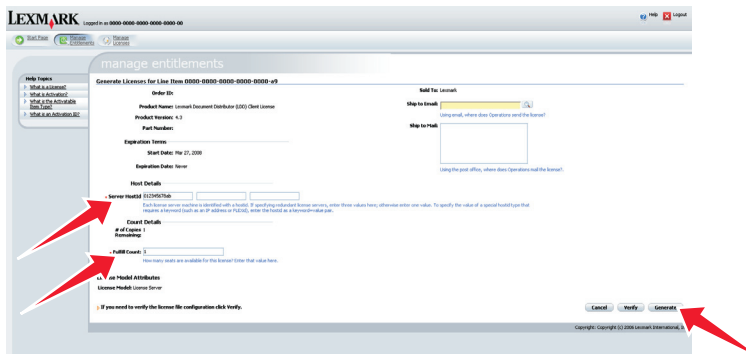


    **e** Click **Save To File**, and then save the file using a descriptive file name, such as `client.lic`, in the same folder used in step 6 and step 7.

        **Note:** Use a file name different from any other saved license files so they are not overwritten.
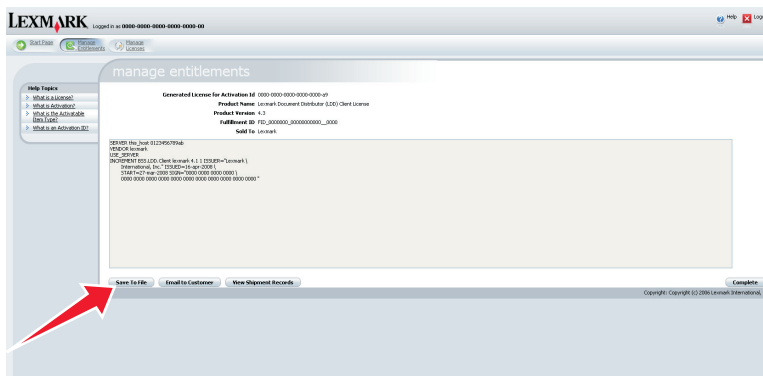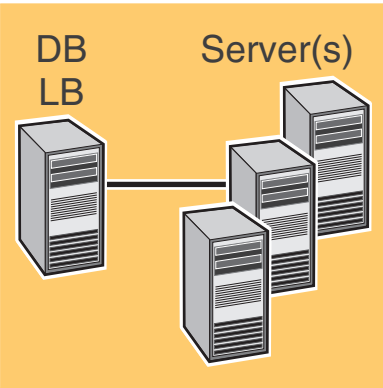
**f** Click **Complete**.
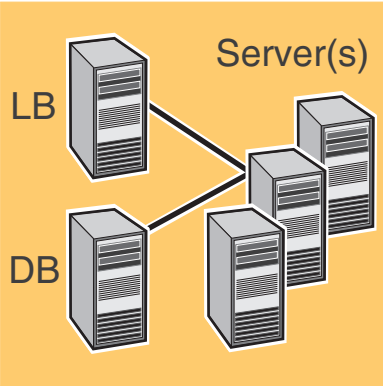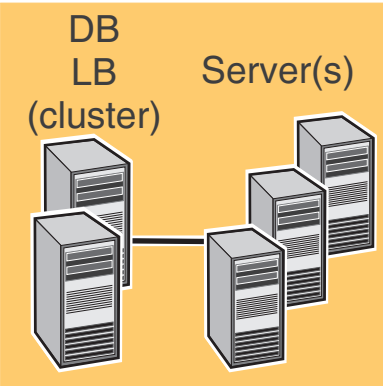
# Installing an enterprise system

An enterprise system is used for Document Producer installations.

## Configuration types for enterprise systems

When installing an enterprise system, Lexmark Distributed Intelligent Capture can be installed using the following hardware configurations:

| Configuration | Description | Advantages | Disadvantages |
|---|---|---|---|
| 1-N | Database (DB) and load balancer (LB) on one computer, server on one or more additional computers (most common setup when failover is not used)<br><br> | Improved performance | Increased hardware needs, no failover for database or load balancer |

| Configuration | Description | Advantages | Disadvantages |
|---|---|---|---|
| 1-1-N | Database (DB) and load balancer (LB) on separate computers, server on one or more additional computers<br><br><br><br>**Note:** An external Oracle database may be installed in place of the standard database, resulting in an E-1-N configuration. The external database (E) and load balancer (LB) are on separate computers, and the server is on one or more additional computers. | Further improved performance | Further increased hardware needs, no failover for database or load balancer |
| X-N | Database (DB) and load balancer (LB) together on X computers in a Microsoft Cluster Server for failover, server on one or more additional computers (most common setup when using failover)<br><br> | High availability, improved performance | Increased hardware needs, cluster licensing |

| Configuration | Description | Advantages | Disadvantages |
|---|---|---|---|
| X-Y-N | Database (DB) on X computers in a Microsoft Cluster Server for failover, load balancer (LB) on Y other computers in a Microsoft Cluster Server for failover, server on one or more additional computers<br><br>**Note:** An external Oracle database may be installed in place of the standard database, resulting in an E-Y-N configuration. The external database (E) on X computers and the load balancer (LB) on Y other computers are in a Microsoft Cluster Server for failover. The server is on one or more additional computers. | High availability, further improved performance | Further increased hardware needs, cluster licensing |

## Using multiple systems for high availability

When configuring multiple Lexmark Distributed Intelligent Capture systems, you can connect them to a hardware load balancer or Global Site Selector (GSS) to provide high availability, without using clustering, as well as increased capacity.
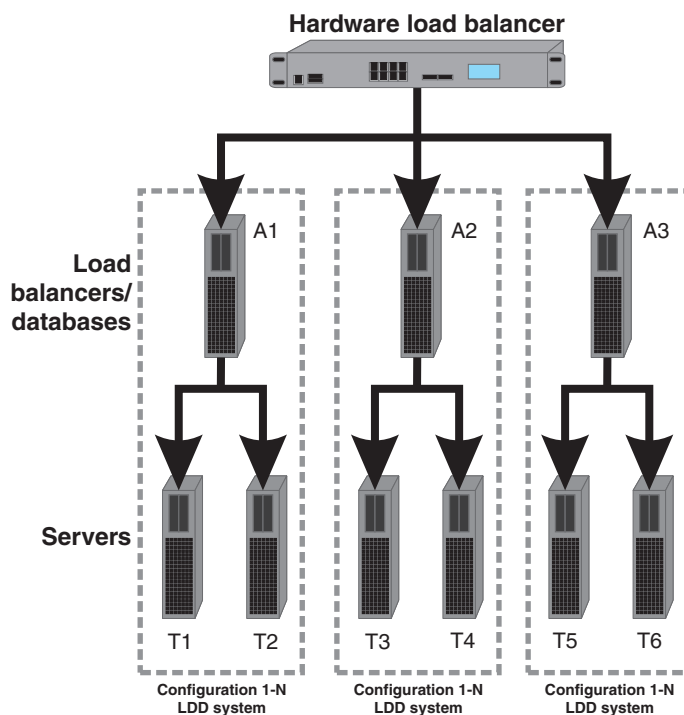
Each system group contains two identical Lexmark Distributed Intelligent Capture systems. Jobs are balanced between these systems in each group by the hardware load balancer or GSS. If a failure occurs in one system in a group, then the other system in the group receives all incoming jobs until the failed system can be restored.

With this type of setup, you need additional computers, as well as a hardware load balancer or GSS. You also need to manually configure these systems to be identical.

**Note:** Printers that do not support eSF applications cannot be used with a Lexmark Distributed Intelligent Capture system that uses a hardware load balancer or GSS.

When a hardware load balancer is used with multiple Lexmark Distributed Intelligent Capture systems, the hardware load balancer must be configured as follows:

- The X-Forwarded-For HTTP header must be inserted into incoming packets.

  The packets going into the Lexmark Distributed Intelligent Capture systems from the HW LB should not appear to be from the hardware load balancer of the packet headers so that device or clients groups and their settings will work properly.

- Cookie-based session persistence must be disabled.

  This is needed in case one of the Lexmark Distributed Intelligent Capture systems is down. If this is enabled, then LMC may not work properly when one of the Lexmark Distributed Intelligent Capture systems is down.

- The load balancing algorithm should be set to Round Robin.

  Based on tests made on hardware balancing algorithms, Lexmark Distributed Intelligent Capture systems work better with round robin than the other algorithms.

## Installation overview for an enterprise system

**1** Select a system configuration, and then configure the appropriate hardware on the network.

**2** Make sure the time on all computers used in the Lexmark Distributed Intelligent Capture system is synchronized using a *Network Time Protocol* (NTP) server.

**3** Install the system components.

  **Note:** If you are installing Lexmark Distributed Intelligent Capture using the default database (Firebird), then the system components can be installed in any order. However, if you are using Oracle database, then see "Using Oracle database with Lexmark Distributed Intelligent Capture" on page 21 before installing Lexmark Distributed Intelligent Capture.

  **a** Install the database.

  **b** Activate and download licenses on the computer where the load balancer will be installed.

  **c** Install the load balancer.

  **d** If you are using one or more Microsoft Cluster Servers, then extend the database and load balancer to standby nodes.

  **e** Install servers.

   **Note:** Multiple servers should not be installed at the same time. Let each server installation complete before beginning another server installation.

**4** Change the administrator password. You can also change the administrator user name.

**5** Temporarily set servers online to test function.

**Notes:**

- The database requires the most system resources and disk I/O, and therefore should be installed on the fastest hardware with the fastest disk I/O infrastructure available. Second in resource usage are the servers.
- Lexmark Distributed Intelligent Capture components can be installed on virtual servers using VMware ESX 3.0.1 or later. However, the best performance can be achieved only by using separate physical servers.

# System sizing guidelines

There are two main factors for determining the number of servers required to process jobs efficiently:

- **Peak demand**—This is usually the deciding factor when the average execution time for a solution is under 30 seconds.
- **Concurrency**—This is usually the deciding factor when the average execution time for a solution is over 30 seconds.

Additionally, the database, when installed on the recommended hardware and connected using Gigabit Ethernet, can process 200,000 logged messages per hour, which is approximately 40,000 jobs per hour when using a typical solution (five logged messages per job). If this limit is reached, then it may be necessary to use multiple systems.

## Peak demand

Use the following formulas to determine the number of servers necessary to handle peak loads for a particular solution:

**(System-wide hourly job rate)** = (system printer capacity) x (jobs per printer per day) / (length of business day)

**(Peak demand)** = 2 x (system-wide hourly job rate)

**(Minimum number of servers)** = (peak demand) / (single-server throughput for current solution)

Consider the following example:

- Each server in your system can process 3000 jobs per hour using the solution.
- There is capacity for 300 printers in your system.
- Each printer in your system averages 100 jobs per day.

Perform the following calculations:

**1** Determine the system-wide hourly job rate:

(300 printers) x (100 daily jobs/printer) / (8 hours/day) = **3750 jobs/hour**

**2** Determine the peak demand:

2 x (3750 jobs/hour) = **7500 jobs/hour**

**3** Determine the minimum number of servers:

(7500 jobs/hour) / (3000 jobs/hour) = **2.5**

Rounding up, the system should include three servers to reliably handle the peak load for a solution with average execution time below 30 seconds.

The single-server throughput for a solution must be determined by the solution developer, though the following typical throughputs on a server with the recommended hardware may help determine a rough estimate:

| Solution processing load | Functions used | Average single-server throughput |
|---|---|---|
| Typical | • Some image processing<br>• Printing | 6000–8000 jobs per hour |
| Heavy | • Extensive image processing<br>• Bar codes<br>• External processes<br>• Small to medium Document Producer (e-forms) jobs | 2000–3000 jobs per hour |
| Very heavy (OCR) | • OCR<br>• Large Document Producer (e-forms) jobs | 100–200 jobs per hour |

**Note:** Using less than the recommended RAM significantly reduces throughput. For example, a dual-processor server with only 2GB of RAM can process only 600–800 jobs/hour when using a "heavy" solution.

For more information, see the *Lexmark Document Distributor SDK Guide*.

## Concurrency

Each server that meets recommended requirements can process 30 concurrent jobs from clients. The following formula determines the number of servers necessary to meet concurrency requirements:

**(minimum number of servers)** = (number of printers expected to submit jobs near the same time) / 30

For example, assume that 1/3 of the 300 printers in the last example might be active at the same time:

100 / 30 = **3.33**

Rounding up, the system should include four servers to allow for 100 active printers for a solution with average execution time below 30 seconds.

# Using Oracle database with Lexmark Distributed Intelligent Capture

If you are using Oracle as the back-end database, then make sure:
• The Oracle database 10g or later is completely installed before proceeding with the Lexmark Distributed Intelligent Capture installation.
• Lexmark Distributed Intelligent Capture system components are not installed on the server running Oracle.
• The internal Lexmark Distributed Intelligent Capture database is not installed.

For Lexmark Distributed Intelligent Capture to work with Oracle, six databases should be created before the load balancer and server are installed. To help the database administrator create these databases, Lexmark Distributed Intelligent Capture includes the following in the installation package:
• Database templates—These are Database Configuration Assistant (DBCA) templates used to create databases. Your database administrator can launch these templates through DBCA, and then configure parameter settings as needed.
• Scripts—These are user configuration scripts for adding users. Users are added to access and manage Lexmark Distributed Intelligent Capture databases.

- Pfiles—These files contain information about the database configuration parameters. The values of database configuration parameters may vary, except the parameter value for **nls_timestamp_format** and **nls_timestamp_tz_format** of the MONITOR database.

  These parameters should have the following values:

  **nls_timestamp_format string YYYY-MM-DD HH24:MI:SS:FF3**

  **nls_timestamp_tz_format string YYYY-MM-DD HH24:MI:SS:FF3**

  **Note:** Make sure to follow the correct time-stamp format when configuring time-stamp parameters.

## Installing the database and load balancer without clustering (configurations 1, 1-N, and 1-1-N)

### Installing the database

**Note:** If you are installing an Oracle database, then do not install the default database.

Do the following on the computer that will run the database:

1 From the installation package, run **Setup.exe**.

2 From the Lexmark Solutions installation window, click **Install Enterprise System** > **Install Database**.

3 Click **Agree** to accept the license agreement.

4 If necessary, specify a location for the installation, and then click **Next**.

   **Note:** The installation path cannot contain double-byte characters.

5 Select the IP address of the computer that will run the database.

6 If you want to use only IP addresses for a system without reliable DNS, then select **IP address only install**, and then click **Next**.

7 If you are installing a system to recover a backup, then do the following:

   a Select **Restore Install (RI)**.

   b Type the path of the folder containing the .ri file from the backup, or click the folder icon, and then locate the .ri file.

8 Click **Finish**.

9 Allow the installation to complete, and then click **Done**.

### Installing the load balancer

Do the following on the computer that will run the load balancer:

1 If the Lexmark Solutions installation window is not open, then run **Setup.exe** from the installation package.

2 From the Lexmark Solutions installation window, click **Install Enterprise System** > **Install Load Balancer**.

3 Click **Agree** to accept the license agreement.

4 If necessary, specify a location for the installation, and then click **Next**.

   **Note:** The installation path cannot contain double-byte characters.

5 Select the IP address of the computer that will run the load balancer.

**6** If you want to use only IP addresses for a system without reliable DNS, then select **IP address only install**, and then click **Next**.

**7** Type the fully qualified domain name or IP address of the computer where the database is installed.

> **Notes:**
>
> - If you are installing the load balancer on the same computer as the database, then you must still use the fully qualified domain name or IP address of the computer on the network. Do not use localhost or the loopback IP address (127.0.0.1) for the location of the database.
> - When installing any configuration other than configuration 1, the location of the database can be set most conveniently during installation. If the database is moved, or the IP address of the database changes for any other reason, then you must uninstall, and then reinstall the load balancer. For more information about changing the IP address of a Configuration 1 system, see .

**8** Select the type of database, and then click **Next**.

> **Note:** If you are using an Oracle database, then make sure the database is already installed before proceeding with the installation.

**9** Specify the folder that contains your license files, and then click **Next**.

> **Notes:**
>
> - If the license files are located on a network share that requires authentication, then you must supply authentication before specifying the license location. To authenticate with the remote server, click **Start** > **Run**, type the *Uniform Naming Convention* (UNC) path to the share (for example, `\\myserver\myshare\`), and then type the user name and password when prompted.
> - During installation, the license files are copied to the program folder. You can safely move the license files from the temporary location where you saved them.

**10** If you are installing a system to recover a backup, then do the following:

> **a** Select **Restore Install (RI)**.
>
> **b** Type the path of the folder containing the .ri file from the backup, or click the folder icon and then locate the .ri file.

**11** Click **Finish**.

**12** Allow the installation to complete, and then click **Done**.

# Installing the database and load balancer with clustering (configurations X-N, and X-Y-N)

**Notes:**

- Before installing Lexmark Distributed Intelligent Capture, set up the failover clusters using Microsoft Windows Server Clustering Services.
- Make sure to set up all firewall exceptions on all physical and logical nodes in the cluster before installing Lexmark Distributed Intelligent Capture.

**Setting up firewall exceptions on a Windows Server 2008 cluster node**

**1** Create a temporary directory.

**2** From the install\Cluster_Config_Script of the Lexmark Distributed Intelligent Capture installation package, copy all the batch files (2008-cluster-*.bat) to the temporary directory.

**3** Open a command prompt window as an administrator.

    **a** Click **Start** > **All Programs** > **Accessories**.

    **b** Right-click **Command prompt**, and then click **Run as administrator**.

    **c** If the User Account Control dialog appears, then confirm that you want to start the command prompt as an administrator, and then click **Continue**.

**4** From the command prompt window, change the current directory to the temporary directory you created.

**5** Run the batch files (2008-cluster-*.bat) by typing the batch file name and then pressing **Enter**.

    **Note:** If you are using an Oracle database for Lexmark Distributed Intelligent Capture, then do not run the Lexmark Distributed Intelligent Capture DB firewall batch file (2008-cluster-firewall-config-DB.bat).

**Installing the database**

If you are installing the Lexmark Distributed Intelligent Capture database on a Microsoft server cluster, then install the Microsoft C++ 2005 Redistributable package on all physical nodes or servers in the cluster. If these files are not installed, then the Lexmark Distributed Intelligent Capture database cluster resource will not initiate failover to the cluster node where Lexmark Distributed Intelligent Capture is not installed.

Depending on the operating system installed on the cluster node (x86 or x64), run the Microsoft C++ 2005 Redistributable package, found in the packages folder of the Lexmark Distributed Intelligent Capture installation package (vcredist_x86*.exe or vcredist_x64*.exe).

**Note:** If you are using an Oracle database, then do not install the Lexmark Distributed Intelligent Capture database.

Do the following on the primary node of the failover cluster that will run the database:

**1** From the Lexmark Distributed Intelligent Capture installation package, run **Setup.exe**.

**2** From the Lexmark Solutions installation window, click **Install Enterprise System** > **Install Database**.

**3** Click **Agree** to accept the license agreement.

**4** Specify a location on a shared cluster disk for the installation, and then click **Next**.

    **Note:** The installation path cannot contain double-byte characters.

**5** Select the IP address or host name of the logical host of the cluster.

**6** If you want to use only IP addresses for a system without reliable DNS, then select **IP address only install**, and then click **Next**.

**7** If you are installing a system to recover a backup, then do the following:

   **a** Select **Restore Install (RI)**.

   **b** Type the path of the folder containing the .ri file from the backup, or click the folder icon and then locate the .ri file.

**8** Click **Finish**.

**9** Allow the installation to complete, and then click **Done**.

## Installing the load balancer

Do the following on the primary node of the failover cluster that will run the load balancer:

**1** If the Lexmark Solutions installation window is not open, then run **Setup.exe** from the Lexmark Distributed Intelligent Capture installation package.

**2** From the Lexmark Solutions installation window, click **Install Enterprise System** > **Install Load Balancer**.

**3** Click **Agree** to accept the license agreement.

**4** If necessary, specify a location on a shared cluster disk for the installation, and then click **Next**.

   **Note:** The installation path cannot contain double-byte characters.

**5** Select the IP address or host name of the logical host of the cluster.

**6** If you want to use only IP addresses for a system without reliable DNS, then select **IP address only install**, and then click **Next**.

**7** Type the fully qualified domain name or IP address of the logical host where the database is installed.

   **Notes:**

   - If you are installing the load balancer on the same computer as the database, then you must still use the fully qualified domain name or IP address of the logical host on the network. Do not use localhost or the loopback IP address (127.0.0.1) for the location of the database.
   - For installation on a cluster, the location of the database can be set most conveniently during installation. If the database is moved, then you must uninstall, and then reinstall the load balancer, or contact Lexmark Professional Services to assist in modifying your current installation.

**8** Select the type of database, and then click **Next**.

   **Note:** If you are using an Oracle database, then make sure that the database is already installed before proceeding with the installation.

**9** Specify the folder that contains your Lexmark Distributed Intelligent Capture license files, and then click **Next**.

   **Notes:**

   - If the license files are located on a network share that requires authentication, then you must supply authentication before specifying the license location. To authenticate with the remote server, click **Start** > **Run**, type the UNC path to the share (for example, **\\myserver\myshare\**), and then type the user name and password when prompted.
   - For cluster installation, the folder must contain the license files for all of the cluster nodes with their appropriate network card MAC addresses.

- During installation, the license files are copied to the program folder. You can safely move the license files from the temporary location where you saved them.

**10** If you are installing a system to recover a backup, then do the following:

    **a** Select **Restore Install (RI)**.

    **b** Type the path of the folder containing the .ri file from the backup, or click the folder icon and then locate the .ri file.

**11** Click **Finish**.

**12** Allow the installation to complete, and then click **Done**.

## Extending the database and load balancer to standby nodes

Do the following on the primary node of each failover cluster:

**1** Run the Lexmark Solutions Cluster Configuration script:

**In Windows Server 2003**

From the install\Cluster_Config_Script folder of the Lexmark Distributed Intelligent Capture installation package, run the **LexmarkSolutionsClusterConfigScript.vbs** script.

**In Windows Server 2008**

    **a** Create a temporary directory.

    **b** From the install\Cluster_Config_Script of the Lexmark Distributed Intelligent Capture installation package, copy **LexmarkSolutionsClusterConfigScript.vbs** to the temporary directory.

    **c** Open a command prompt window as an administrator.

        **1** Click **Start** > **All Programs** > **Accessories**.

        **2** Right-click **Command prompt**, and then click **Run as administrator**.

        **3** If the User Account Control dialog appears, then confirm that you want to start the command prompt as an administrator, and then click **Continue**.

    **d** From the command prompt window, change the current directory to the temporary directory you created.

    **e** Run the VBScript file by typing `cscript LexmarkSolutionsClusterConfigScript.vbs` and then pressing **Enter**.

**2** Click **Yes** to begin the installation.

**3** Enter a number to select a resource group as shown in the dialog, and then click **OK**.

**4** Enter a number to select an IP address for the logical host as shown in the dialog, and then click **OK**.

**5** Allow the installation to complete, and then click **OK**.

The configured cluster contains the necessary Lexmark services.

# Installing servers

**Note:** Multiple servers should not be installed at the same time. Complete each server installation before beginning another one.

Do the following on each computer that will run a server:

**1** If the Lexmark Solutions installation window is not open, then run **Setup.exe** from the installation package.

**2** From the Lexmark Solutions installation window, click **Install Enterprise System** > **Install Server**.

**3** Click **Agree** to accept the license agreement.

**4** If necessary, specify a location for the installation, and then click **Next**.

**5** If the computer contains multiple network adapters, then select the IP address to bind to the installed server.

**6** If you want to use only IP addresses for a system without reliable DNS, then select **IP address only install**, and then click **Next**.

**7** Type the fully qualified domain name or IP address of the computer or cluster logical host where the database is installed.

    **Notes:**

- If you are installing the server on the same computer as the database and/or the load balancer, then you must still use the fully qualified domain name or IP address of the computer on the network. Do not use **localhost** or the loopback IP address (**127.0.0.1**) for the location of the database or load balancer.

- If you are using DNS aliases for connection to a backup system during a recovery, then use the DNS aliases of the database and load balancer.

**8** Select the type of database, and then click **Next**.

    **Note:** If you are using an Oracle database, then make sure that the database is already installed before proceeding with the installation.

**9** Select the **Same as Database** check box if the load balancer is installed on the same computer as the database, or type the fully qualified domain name or IP address of the computer or cluster logical host where the load balancer is installed.

    **Notes:**

- If you want to type the fully qualified domain name or IP address of the computer or cluster logical host, then clear the **Same as Database** check box.

- When installing any configuration other than configuration 1, the location of the database and load balancer can be set most conveniently during installation. If the database or load balancer is moved, or the IP address of the database or load balancer changes for any other reason, then you must uninstall and then reinstall the load balancer. For more information about changing the IP address of a Configuration 1 system, see .

**10** If you want to set the Globe Site Selector (GSS) IP address, then do the following:

    **a** Click **Advanced**.

    **b** Type the GSS IP address, and then click **OK**.

    **Note:** You can type a GSS IP address only if all the printers in the system are e -Task 2 or later. GSS is not supported in e -Task and earlier printers.

**11** Click **Finish**.

**12** Allow the installation to complete, and then click **Done**.

After all servers are installed, log on to LMC, then change the administrator password, and then set the servers online.

# Administration of Lexmark Document Producer

## Uploading formsets to the Lexmark Distributed Intelligent Capture system

**1** Click the **E-Forms** tab.

**2** Select **Formsets** from the list, and then click **Add/Update**.

**3** In the window that appears, type a path to a formset file, or click **Browse** to select a formset file.

If the selected formset already exists in the system, then it is overwritten with the newly uploaded version by default. If you do not want to overwrite the formset, then clear the **Overwrite if file already exists** check box.

**4** Click **Upload**.

## Removing formsets

**1** Click the **E-Forms** tab.

**2** Select **Formsets** from the list.

**3** Select the formset from the list in the main section, and then click **Remove**.

**Note:** Removing forms that are still used by solutions will stop those solutions from working correctly.

## Creating forms printers

A *forms printer* is a virtual printer in the Lexmark Distributed Intelligent Capture system to which print queues on other computers can send data files for forms merge. The forms printer can print, e-mail, or save the results, or run a script using the input data.

**1** If necessary, install e-forms virtual printer licenses on the Lexmark Distributed Intelligent Capture system. For more information, see <u>"Adding an MFP, e-forms virtual printer, or software client license to an existing server" on page 50</u>.

**2** Click the **E-Forms** tab.

**3** Select **Forms Printers** from the list.

**4** Click **Add**.

**5** Enter the port number to be used by print queues that connect to the forms printer.

**Notes:**

- Each forms printer in the system must have a unique port number, and the port number must not be used by any other network traffic. For a list of ports used by Lexmark Distributed Intelligent Capture, see <u>"Ports used by the Lexmark Distributed Intelligent Capture system" on page 10</u>, and for a list of commonly used ports, see the Internet Assigned Numbers Authority (IANA) list of port numbers at **http://www.iana.org/assignments/port-numbers**. Do not use well-known ports (port numbers 0–1023), and make sure that other applications using the network are not using the selected port number.

- Communication using the selected port number must be allowed on the network.

**6** Type a description of the forms printer, and then click **Next**.

**7** Configure an action to perform when a user submits a job:

**Notes:**

- If you do not want to perform an action, then select **None** from the Action drop-down menu.
- Actions can also be included in forms merge scripts. If an action is both selected in LMC and specified by a script, then it is executed twice. For information on actions included in a forms merge script, contact the person who developed the solution.

**a** Select an action to perform:

- **Email**—This sends an e-mail message with the output attached.
- **File**—This saves the output to a file.
- **Print**—This prints the output to a printer.

**b** Click **Action Settings**.

**c** Configure the action settings.

- **E-mail**

  **Note:** To use the e-mail action, make sure the e-mail service is correctly configured from the Services tab.

  **1** Type the addresses in the To, CC, BCC, and From fields, and then type the e-mail subject and message.

  **Note:** If you want to use the formset e-mail addresses when merging with the To, CC, and BCC fields, then select the **Use 'To' defined in formset**, **Use 'CC' defined in formset**, and **Use 'BCC' defined in formset** check boxes in the e-mail action settings of the virtual form printer.

  **2** Click **OK**.

- **File**

  **1** Type the file path and name to use for each saved file.

  **2** To add a time stamp to the file name of each saved file, select **Append Time Stamp**.

  **3** If **Append Time Stamp** is not selected, then select the **Overwrite** check box to overwrite the existing file each time. If neither option is selected, then only the first output file is saved.

  **4** To create the folder specified by file path and name if it does not already exist, select the **Create Directory** check box.

  **5** Click **OK**.

- **Print**

  **1** Type the name of the output printer queue where jobs are to be printed. This name must match the name of a printer in the Printers folder on each server computer. When multiple servers are used, the same print queue should be installed with the same name on each server.

  **2** Type the number of physical copies to print for each print job that is processed by the forms printer.

  **3** Select the settings for duplex, paper type, paper size, and orientation.

  **4** Select the appropriate printer type for your output printer:

| Printer type | Description | Printer support | Relative speed |
|---|---|---|---|
| Lexmark PCL | Sends jobs using PCL data | All models, including those without PostScript support | Slow |
| Lexmark PostScript | Sends jobs using PostScript with PJL commands | Most models | Slow |
| Lexmark printer with PDF support | Sends jobs using unformatted PDF data and PJL commands | Specific models | Faster |
| Lexmark printer with PDF and page formatting support | Sends jobs using formatted PDF data | Specific models | Fastest |

**Note:** For more information on the type of data supported by your printer, see the documentation that came with your printer.

  **5** Click **OK**.

**8** If you want to run a script when a user submits a job, then select a script from the list. If you do not want to run a script, then select **None**.

**9** If a particular type of input data is expected, then select an appropriate Datatype filter to remove commands and data not needed by Lexmark Distributed Intelligent Capture. If you do not want to filter input data, then select **None**.

**10** Click **Finish**.

# Creating input queues for forms printers

**1** On a Windows computer connected to the Lexmark Distributed Intelligent Capture system, add a new printer using the Control Panel.

**2** Select a local printer, and then do not allow Windows to search for Plug and Play printers.
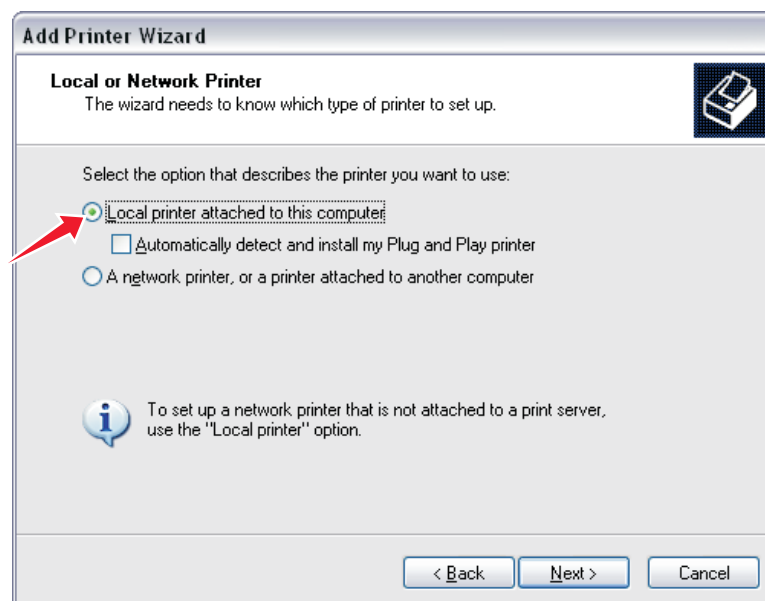
**3** Click **Next** > **Create a new port** > **Standard TCP/IP Port** > **Next**.

**4** When the Add Standard TCP/IP Printer Port Wizard appears, click **Next**.

**5** In the Printer Name or IP Address field, type the address of the Lexmark Distributed Intelligent Capture server.

> **Notes:**
>
>   - If servers are installed on computers other than the load balancer, then do not use the load balancer address or Lexmark Distributed Intelligent Capture system address.
>   - You can use Windows printer pooling with multiple servers in the system for failover.

**6** Type a descriptive port name, and then click **Next**.

**7** Select **Custom**, and then click **Settings**.

**8** In the Port Number field, enter the port number used to create the forms printer in LMC, and then click **OK**.

**9** Click **Next** > **Finish**.

**10** In the Manufacturer list, select **Generic**, and then make sure the **Generic / Text Only** check box is selected in the Printers list.

**11** Click **Next**.

**12** Type a descriptive printer name for the input queue.

**13** Select whether the new input queue should be the default printer, and then click **Next**.

**14** Make sure the **Do not share this printer** check box is selected, and then click **Next**.

**15** When asked whether to print a test page, select **No**, and then click **Next**.

**16** Confirm the settings shown, and then click **Finish**.

# Providing failover for forms merge jobs

**1** Click the **E-Forms** tab.

**2** Create a forms printer. For more information, see "Creating forms printers" on page 29.

**3** In the Printers folder on a computer connected to the Lexmark Distributed Intelligent Capture system, create an input queue using the IP address of any server in the system. For more information, see "Creating input queues for forms printers" on page 31.

**4** Right-click the newly created print queue, and then click **Properties** > **Ports** tab > **Enable printer pooling**.

**5** Add a port for each additional server in the system.

**6** Make sure all servers are selected in the ports list, and then click **OK**.

# Providing load balancing and failover for forms merge jobs using OM Plus

If you have multiple servers in your Lexmark Distributed Intelligent Capture system, then you can use OM Plus for load balancing and failover. OM Plus is advanced print management software available from Plus Technologies.

**1** Click the **E-Forms** tab.

**2** Do the following on a computer connected to the Lexmark Distributed Intelligent Capture system:

    **a** Use OM Plus Define Destination to create an OM Plus destination for the forms printer on each server, using the IP address of each server and the port number of the forms printer for the destination device. Select **termserv** as the destination mode for each destination.

    **b** Use OM Plus Dynamic Class Maintenance to create a dynamic class that includes all the newly created destinations.

    **c** In the Printers folder, create an input queue. For more information, see "Creating input queues for forms printers" on page 31.

    **d** Use Link Windows Printer & OM Plus to create a link between the input queue and the OM Plus dynamic class that includes the input destinations.

**3** If you are using the Print action for the forms printer, and you want to load balance multiple output printers using OM Plus, then do these steps on each server computer:

    **a** Use OM Plus Define Destination to create an OM Plus destination for each output printer. Select **netprint** as the destination mode for each destination.

    **b** Use OM Plus Dynamic Class Maintenance to create a dynamic class that includes all the newly created destinations.

    **c** Use Link Windows Printer & OM Plus to create a link between the existing output queue and the OM Plus dynamic class that includes the output destinations.

# Sending test jobs

Any text editor that adds characters to a generic text print job, such as Notepad, cannot be used to send data to a virtual forms printer. You can use the Java application SpoolIt to send test jobs without any modification.

**1** Make sure the Java Resource Environment (JRE) is installed. For downloads or more information, go to **www.java.com**.

**2** Extract **SpoolIt.zip** into the folder C:\spoolit\.

**3** Open **SpoolIt.properties** in a text editor, and then change these settings as necessary:

    **a** Set `printer` to the name of the print queue.

        For example: `printer=my Local Queue` or `printer=\\myServer\my Remote Queue`

    **b** Set `numJobs` to the number of times the input file should be sent.

    **c** Set `dataFile` to the path and file name of the input file. Each backslash (`\`) must be succeeded by a second backslash.

        For example: `dataFile=C:\\myTestFolder\\myTestFile.txt`

**4** Save and close the file.

**5** Run **spoolit.bat**.

# Using directives in merge data

You can include the following directives in the merge data to override activation conditions and other settings associated with formsets in the system:

| Directive | Effect | Overrides | Valid location |
|---|---|---|---|
| `#!FORM_SET=`*`name`*`!#` * | Specifies a formset to use for the print job. Page activation conditions within the specified formset will be used. | Project activation conditions in the formsets loaded in the system | Within first page of data (Only one formset is used for the print job.) |
| `#!DEFAULT_FIELD_MAP=`*`name`*`!#` | Specifies the name of the field map file to use for the page of data within which the directive appears and all following pages until a `FIELD_MAP` directive or another `DEFAULT_FIELD_MAP` directive is found | The field map specified in the formset | Anywhere; valid once per page |
| `#!FIELD_MAP=`*`name`*`!#` | Specifies the name of the field map file to use for the page of data within which the directive appears | The field map specified in the formset and any `DEFAULT_FIELD_MAP` directive | Anywhere; valid once per page |
| `#!FORM_NAMES=`<br>`(1, `*`PPF_file_name_1`*`),`<br>`(2, `*`PPF_file_name_2`*`)…!#` | Specifies the page numbers of the forms from the specified formset to create from the page of data in which the directive appears and the page print profile (PPF file, created in Forms Composer) to use. Page print profiles are optional and may be blank; in such a case, parentheses are still required, but the comma inside each set of parentheses is optional.<br><br>**Note:** You can save up to 255 characters for the page print profile file name. | Page activation conditions in the formset and any `DEFAULT_FORM_NAMES` directive | Anywhere; valid once per page |
| * The `FORM_SET` directive is required when any other directives are used. | | | |

| Directive | Effect | Overrides | Valid location |
|---|---|---|---|
| `#!DEFAULT_FORM_NAMES=` `(1, PPF_file_name_1),` `(2, PPF_file_name_2)…!#` | Specifies the page numbers of the forms from the specified formset to create from the page of data in which the directive appears and all following pages until a **FORM_NAMES** directive or another **DEFAULT_FORM_NAMES** directive is found<br><br>**Note:** You can save up to 255 characters for the page print profile file name. | Page activation conditions in the formset | Anywhere; valid once per page |
| `#!FIRST_PAGE!#` | Identifies the first page of a job; if a job is already in progress, it is completed, and a new one is started for the page in which the directive appears. | Job properties in the formset | Anywhere; valid once per page |
| `#!LAST_PAGE!#` | Identifies the last page of a job; the job is completed and a new job is started for any following page. | Job properties in the formset | Anywhere; valid once per page |
| * The **FORM_SET** directive is required when any other directives are used. | | | |

# Monitoring and maintaining the system

## Using Lexmark Management Console

### Accessing Lexmark Management Console

**1** Launch LMC from your Web browser using the URL **http://loadbalancer:9780/lmc**, where **loadbalancer** is the computer where the load balancer is installed.

The load balancer selects a server to host the LMC session, indicated by a green arrow beside a server in the Servers list on the Home tab after logging in.

**Notes:**

- On a computer where a server is installed, you can use the desktop shortcut to access LMC.
- To access LMC on a particular server, use the URL **http://server:9788/lmc**, where **server** is the computer where the chosen server is installed.
- It may take several minutes to start all services after the system boots. If LMC cannot be accessed immediately after booting the system, wait a few minutes, and then try again.
- Cookies must be enabled on your Web browser in order to use LMC.
- Adobe Flash Player 10 or later is required. If your Web browser settings do not allow ActiveX controls to run, then you must upgrade manually by visiting the Adobe Web site.

**2** Enter the administrator user name and password, and then click **Login**.
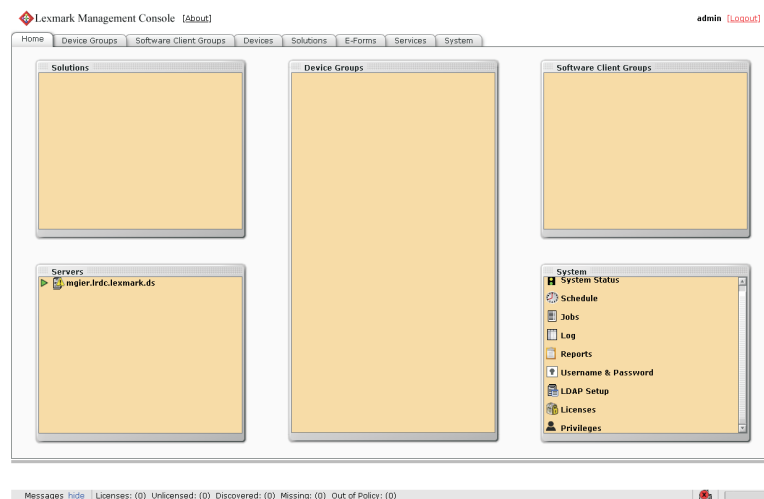


**Notes:**

- The default user name and password are both **admin**.
- If LMC is configured to connect to an LDAP server, any valid user name and password may be used.

The Home tab is displayed after a successful login.

# Changing the administrator user name

**1** In LMC, click the **System** tab.

**2** Select **Username & Password** from the System list.

**3** Type the new user name.

**4** Re-type the new user name to confirm it.

**5** Click **Apply**.

# Changing the administrator password

**1** Click the **System** tab.

**2** Select **Username & Password** from the System list.

**3** Type the current password.

**4** Type the new password, and then re-type it to confirm.

**5** Click **Apply**.

# Enabling LDAP server authentication for LMC

The administrator can set up a connection with an LDAP server to authenticate user names and passwords other than those for the administrator account.

**1** Select **LDAP Setup** from the System list.

**2** Select the **Enable LDAP Authentication** check box.

**3** If your LDAP server requires a secure connection, then select **Use Secure Connection (SSL/TLS)**.

**4** Type the LDAP server address and server port.

> **Note:** Port 389 is typically used for non-secure communication, and Port 636 is typically used for secure communication.

**5** In the User Search Filter field, type the attribute used in the directory to identify a user name, such as `cn`, `sn`, `uid`, or `sAMAccountName`.

**6** In the User Search Base field, type the relative distinguished name where a subtree search for a user should begin in the directory, such as `ou=Employees`.

**7** Do the following to filter the search to users in specific groups:

   **a** In the Group Search Filter field, type the attribute used to identify a member of the group, such as `member` or `uniquemember`.

   **b** In the Group Search Base field, type the relative distinguished name where a subtree search should begin in the directory for groups, such as `ou=Groups`.

   **c** In the "Member of Groups" field, type a comma-delimited list of group names to search. The user name must be a member of at least one of the groups listed.

   **d** In the Group Identifier field, type a name for the object class.

     > **Note:** The object class name can be used to search for the group base when assigning privileges to groups.

**Example**

- User Search Filter: `uid`
- User Search Base: `ou=Employees`
- Group Search Filter: `uniquemember`
- Group Search Base: `ou=Groups`
- Group Identifier: `groupOfNames`
- Member of Groups: `Dept A,Dept C`

    If the user name `testuser` is used to log in to LMC, then the user can be authenticated if each of the following is true:

    – The distinguished name `uid=testuser,ou=Employees,o=MyOrganization` is found in the directory.
    – The distinguished name `cn=Dept A,ou=Groups,o=MyOrganization` *or* `cn=Dept C,ou=Groups,o=MyOrganization` is found in the directory and contains the attribute `uniquemember: uid=testuser,ou=Employees,o=MyOrganization`.
    – The object class is `groupOfNames` .
    – The correct password is supplied for the user.

**8** Select an authentication method:

- If the LDAP server accepts anonymous connections, then select **Anonymous**.
- If the LDAP server requires authentication, then do the following:
    **a** Select the **Username** option.
    **b** In the Username field, type a distinguished name used to log on to the LDAP server, such as `uid=ldapuser,ou=Employees,o=MyOrganization`.
    **c** Type the password associated with the selected user name.

**9** If you want to test the connection settings, then click **Test Settings**.

**Note:** If the LDAP server accepts anonymous connections but you want to authenticate with a user name and password, then the test cannot determine whether the user name and password are correct. If the test reports an anonymous connection when you have chosen to use a user name and password, then you should check the user name and password.

**10** In the Search Base field, type the distinguished name where the directory search should begin, such as `o=MyOrganization`.

**11** Click **Save Settings**.

## Assigning privileges to groups

You can add access control to users accessing LMC. This feature allows you to restrict system access to authorized groups. The Privileges settings depend on the role assigned to the user.

**Notes:**

- You need to add a group first before defining privileges. By default, the Default Group is already added to the group list. This group has access to all tabs and tasks of LMC. The administrator can modify the privileges of the default group.

- If a user belongs to multiple groups, then group privileges are combined. Privileges can be modified for LDAP users only. The default administrator has access to all tabs and tasks, and these settings cannot be modified.

**1** Select **Privileges** from the System list.

**2** Select a group from the "Group Names from LDAP" list, or add a new group.

> **To add a group:**

> **a** Click **Add**, then type the first few characters of the group name, and then click **Search**.

> **b** Select a group name from the list, and then click **Add**.

**3** Select the tabs and tasks the group is allowed to access and perform.

When assigning privileges, you can select specific tasks under each tab.
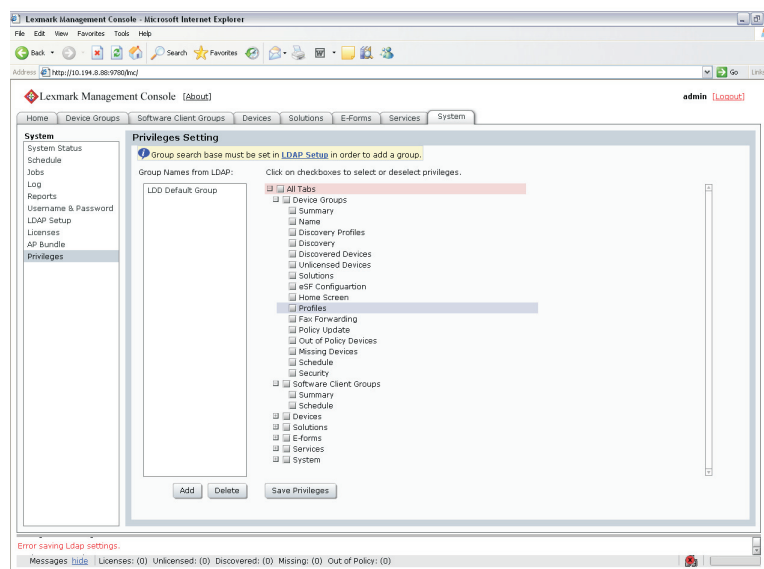


**4** Click **Save Privileges** to save settings.

# Finding basic information

## Understanding the Home tab

The Home tab provides shortcuts to tasks on the System tab and individual items on other tabs, as well as indicating the status of each server and device group in the system.

| Home tab section | Description |
|---|---|
| Solutions | Lists all solutions available in the system. Clicking a solution in the list links to that solution on the Solutions tab. |
| Servers | Lists all servers connected to the system. The icon of each server indicates the status of that server. Clicking a server in the list links to the System Status task on the System tab. |

| Home tab section | Description |
|---|---|
| Device Groups | Lists all device groups that have been created. A yellow exclamation mark icon appears on the icon of a device group that contains out-of-policy printers. Clicking a device group in the list links to that device group on the Device Groups tab. |
| Software Client Groups | Lists all groups of software clients connected to the system. Clicking a software client group in the list links to that group on the Software Client Groups tab. |
| System | Provides shortcuts for all tasks on the System tab. Clicking a task in the list links to that task on the System tab. |

## Understanding the status bar

The status bar appears on all tabs and shows the number of licenses, discovered printers, unlicensed printers, missing printers, and printers known to be out-of-policy, as well as the overall system status. The message bar above the status bar also appears on all tabs. This area provides feedback when the system setup or device discovery changes and lists any errors or warnings.



| Status bar item | Description |
|---|---|
| Messages | Toggles the message bar by clicking **show** or **hide** |
| Licenses | Displays the number of licenses available on the system |
| Discovered | Displays the number of discovered printers currently stored in the database |
| Unlicensed | Displays the number of discovered printers that do not have a license available in the system |
| Missing | Displays the number of previously discovered printers that are no longer responding on the network |
| Out of Policy | Displays the number of discovered printers known to have settings different from profiles required by solutions deployed to those printers |
| System status icon | Indicates the overall status of the system |
| Progress bar | Shows the progress of the current operation |

## System status information on the status bar and Home tab

The overall system status is indicated by the icon showing three server boxes in the status bar. If any servers are offline or not communicating, then a yellow exclamation mark icon appears on the system status icon to indicate the system is operating at reduced capacity. If all servers are offline or not communicating, then a red X icon appears on the system status icon.

More detailed system status information is available through the System Status task on the System tab. Click **System Status** in the System section of the Home tab to access this information.

# Viewing information summaries for Lexmark Distributed Intelligent Capture elements

Summaries of essential information are available for device groups, software client groups, printers, and solutions.

**1** Click the **Device Groups**, **Software Client Groups**, **Devices**, **Solutions**, or **cSF Apps** tab.

**2** Select an item from the list, or when on the Devices tab, perform a search.

**3** Click **Summary** from the Tasks list.

A summary of basic information about the selected element appears. The summary includes links to find more information or settings about the included information.

# Viewing jobs or system logs

You can view all jobs initiated in the system, including both tasks performed in LMC and print jobs initiated using a printer or software client. Additionally, a log is available showing any messages reported by jobs, such as printers discovered during a discovery task. Data for both jobs and logs are saved for seven days.

**1** Click the **System** tab.

**2** Select **Jobs** from the System list to view jobs, or select **Log** to view logs.

Optionally, apply a filter to the jobs list or log:

- To apply a filter, make selections or entries in the applicable fields, and then click **Refresh**. If you want to access less commonly used filter fields, then click **Filters**.
- To remove a previously applied filter, click **Reset Filter**, and then click **Refresh**.

**Note:** You can also view jobs and logs for specific solutions or printers through the Jobs and Log tasks on the Solutions and Devices tabs.

While viewing the jobs list, you can view all log entries that apply to a specific job by clicking the task ID of a job. The log is automatically filtered for the selected task ID. Additionally, to quickly filter the list to view only jobs in progress, click **Running Tasks**.

To stop a job, click **Stop Task**.

To refresh the jobs list or log, click **Refresh**. To set the jobs list to automatically refresh on a timed interval, select the **Auto Refresh** option, and then select a time interval.

To change the number of entries that appear on each page of the jobs list or log, select a new value for **Number of Jobs per Page**.

To export the jobs list or logs in *comma‑separated values* (CSV) format, click **Export Report**.

# Customizing columns for jobs and system logs

**1** Click the **System** tab.

**2** Select **Jobs** or **Log**.

**3** Click **Customize Table**.

All columns are shown by default.

**4** From the Customize Jobs Table or Customize Log Table, adjust the columns as necessary:

- To remove a column from view, select it in the Current Columns list, and then click **Remove**.
- To add a column back to the Current Columns list, select it in the Available Columns list, and then click **Add**.
- To adjust the position of a column, select it in the Current Columns list, and then click **Move Up** or **Move Down**.
- To return all columns to view in the default order, click **Reset**.

**5** Click **OK** to save your changes, or click **Cancel** to keep the current view.

Custom selections for columns are saved in a cookie in your browser so they are available each time you use LMC.

## Viewing forms associated with a solution

Solutions that include forms merge functionality are associated with forms that are installed along with the solution.

**1** Click the **Solutions** tab.

**2** Select a solution from the Solutions list.

**3** Select **EForms** from the Tasks list.

## Viewing version information

You can view version numbers for all system components, which may help you to troubleshoot problems and make sure all components are up to date.

**1** Click the **System** tab.

**2** Select **System Status** from the System list.

**3** In the Components column, click **VersionInfo**. You may have to scroll to the right to see the Components column.

To export component version information along with system status information, click **Export Report** in the System Status window.

# Managing the Lexmark Distributed Intelligent Capture system

To perform system tasks, such as creating reports on the overall performance of the system, setting servers offline, changing the administrative user name and password, or viewing the overall job schedule, use the System tab in Lexmark Management Console.

## Viewing and changing server status

To view server status, click the **System** tab, and then select **System Status** from the System list.

A table is displayed with information about each server in the system. The Status column indicates whether the server is online, offline, or has a communication problem. A yellow exclamation mark icon appears beside the status when the server is offline, and a red X icon appears to indicate a communication problem.

**Note:** Multiple non-communicating servers may impact system performance. If you do not expect a non-communicating server to quickly reestablish communication, then you should remove it.

The server where the current LMC session is running is indicated by a green arrow beside the Server Address.

You can perform the following tasks:

- To change the online status of a server, select the check box of a server from the table, and then click **Set Online** or **Set Offline**.
- To export all system status information and component version information, click **Export Report**.
- To remove a server that is not communicating, select the check box beside it in the table, and then click **Remove Server(s)**. If the server later reestablishes communication, then it automatically reappears in the server list.

## Adding servers to the system after initial installation

New servers may be added to an existing system to increase capacity, or servers may be replaced without reinstalling other components. When a new server is installed on a system that already has solutions, the solutions and all associated settings are added to the new server. However, any third-party services used with existing solutions must be installed manually. If the new server is left without the same services as existing servers, any jobs that use the solution that is missing services on the new server will fail.

**1** Add the computer where the server will be installed on the network, and make sure the time is synchronized using an NTP server.

**2** Install the server. For more information, see .

**3** Install any third-party services required by existing solutions on the new server.

**4** From the System tab in LMC, set the new server online. For more information, see .

## Changing the IP address on a configuration 1 system

If an incorrect IP address or fully qualified domain name is used when installing a configuration 1 system, or the IP address of the computer on which the components of a configuration 1 system are installed changes for any reason, then the IP address of the components can be changed without reinstallation.

**1** From the command line on the computer where all components are installed, navigate to the Lexmark \Solutions\InstallHelper folder in the location where the components are installed. (The default is C:\Program Files\Lexmark\Solutions\InstallHelper.)

**2** Type **update-addr.bat -hostname** to use the fully qualified domain name of the local computer, and then press **Enter**

*or*

Type **update-addr.bat -ip** to use the IP address of the local computer, and then press **Enter**.

**3** The desktop shortcut must be changed to the new address manually:

    **a** On the desktop of the computer where the components are installed, right click the **Lexmark Management Console (LMC)** icon, and then click **Properties**.

    **b** Click **Find Target**.

    **c** In the folder that appears, right click the shortcut **lmc**, and then click **Properties**.

    **d** Change the IP address or host name part of the URL to the new IP address or host name of the local computer. The complete URL should be `http://hostname:9780/lmc/`, where *hostname* is the host name or IP address of the computer where the components are installed.

# Rebooting the Lexmark Distributed Intelligent Capture system

**1** Click the **System** tab.

**2** Set all servers offline. For more information, see .
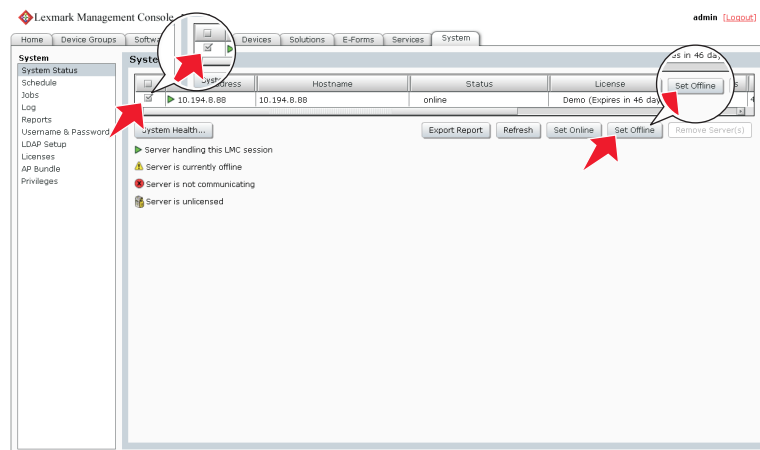


**3** Shut down all server computers, load balancer computers, and database computers.

**4** Boot the database computers, load balancer computers, and server computers.

    **Note:** You can boot the server components in any order.

**5** From the System tab in LMC, set all servers online. For more information, see .
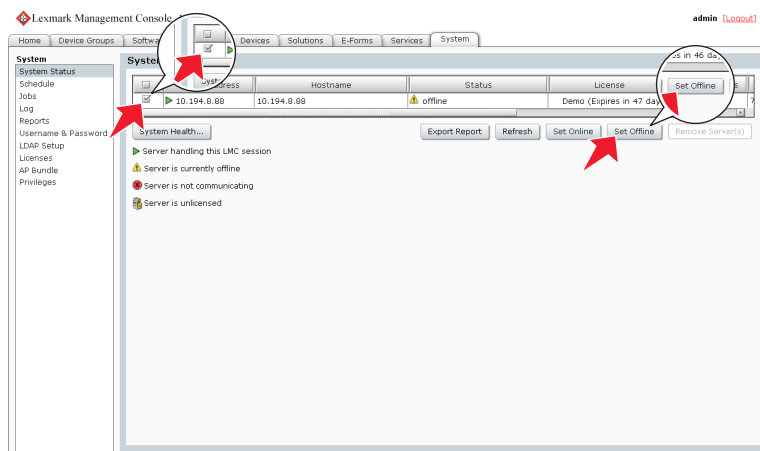
**Note:** It may take several minutes to start all services when the Lexmark Distributed Intelligent Capture system is first booted. If LMC cannot be accessed immediately after booting the system, then wait a few minutes, and then try again.

## Restarting the Lexmark Solutions Application Server

If you install a workflow solution that includes a component, then you may need to restart the Lexmark Solutions Application Server for the solution to fully function.

Before restarting the Lexmark Solutions Application Server, set the server offline on the System tab in LMC. Make sure the server is offline before proceeding. Click **Refresh**, and then make sure **offline** is reported in the Status column for the server.

You can restart the Lexmark Solutions Application Server from the Windows Services control panel.

**Note:** When you restart the Lexmark Solutions Application Server service, any solution-related file in the \Lexmark\Solutions\apps\wf-ldss\ or \Lexmark\Solutions\apps\wf-ldss\solutions folders, such as a property file for a solution, is reverted to the version stored with the solution package as it was initially installed or upgraded, and any manual changes are lost.

## Uninstalling Lexmark Distributed Intelligent Capture components

1 Click the **System** tab.

2 Set all servers offline. For more information, see .
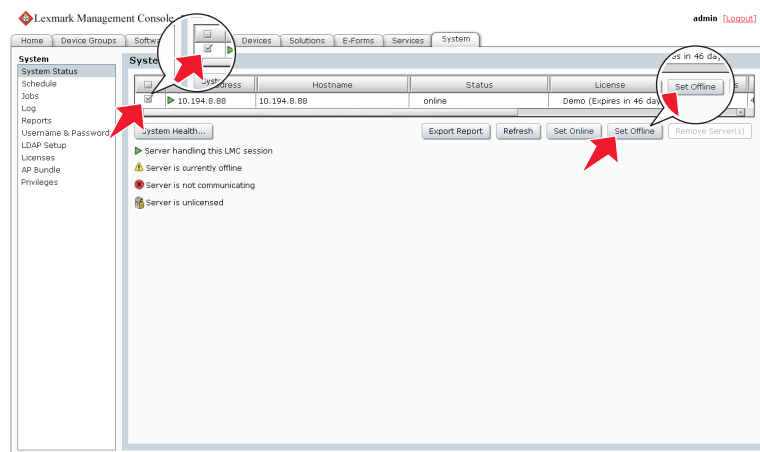


**Notes:**

- Make sure all servers are offline before proceeding. Click **Refresh**, and then make sure **offline** is reported in the Status column for each server.
- Any jobs running or queued on a server must be completed before the server goes offline.
- If a server does not change from the status **setting offline** after all jobs have been completed, restart the server computer, and then make sure the status of the server is **offline**.

**3** If the database or load balancer is installed on a failover cluster, then do the following:

   **a** On the primary node in each cluster, close all unnecessary applications, and make sure no applications are using the shared drive where Lexmark Distributed Intelligent Capture components are installed.

   **b** In the Cluster Administrator, move all cluster resources to the primary node where the system components are originally installed.

   **c** Stop the cluster service on standby nodes.

      Wait for confirmation from the Cluster Administrator that the standby nodes are disabled before continuing the upgrade.

**4** From the computer where the component(s) are installed, do the following:

   **a** Click **Start**.

   **b** Click **Programs** or **All Programs**.

   **c** Click **Lexmark** > **Solutions Software Uninstall**.

**Note:** If a database or load balancer is installed on a failover cluster, then use the node where the component is originally installed.

**5** Select the components to uninstall, and then click **Finish**.

**6** Allow the process to complete, and then click **Done**.

## Configuring connection to an SMTP server

**1** Click the **Services** tab.

**2** Select **Email** from the Services list.

**3** Select **Parameters** from the Tasks list.

**4** Type the password and user ID used to log on to your SMTP server.

**5** Type the e-mail server connection timeout in seconds. The default is 60.

**6** Type the e-mail server host name or IP address.

**7** Enter the e-mail server I/O timeout in seconds.

**8** Click **Apply**.

# Managing licenses

## Finding the host ID

Each license file installed on the server is associated with a host ID on the server, which is the physical address (MAC address) of a network adapter in the load balancer without hyphens or other punctuation. During installation, the host ID is shown by clicking **Activate and Download License File(s)**. If you do not have access to the installation files, or if you have multiple host IDs and want to determine which is associated with the network adapter connected to the same network as your printers, then do following:

**1** Click , or click **Start** and then click **Run**.

**2** In the Start Search or Run box, type `cmd`.

**3** Press **Enter**, or click **OK**.

**4** From the command prompt window, type `ipconfig /all`, and then press **Enter**.

```
Ethernet adapter Local Area Connection:

        Connection-specific DNS Suffix  . : test.company.ds
        Description . . . . . . . . . . . : Broadcom NetXtreme 57xx Gigabit Cont
roller
        Physical Address. . . . . . . . . : 00-1A-A0-B4-D5-E6
        Dhcp Enabled. . . . . . . . . . . : Yes
        Autoconfiguration Enabled . . . . : Yes
        IP Address. . . . . . . . . . . . : 10.194.8.88
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 10.194.8.1
        DHCP Server . . . . . . . . . . . : 157.184.63.8
        DNS Servers . . . . . . . . . . . : 157.184.63.8
                                            157.184.80.10
        Primary WINS Server . . . . . . . : 157.184.84.10
        Secondary WINS Server . . . . . . : 157.184.80.194
        Lease Obtained. . . . . . . . . . : Tuesday, November 16, 2010 9:45:53 A
M
        Lease Expires . . . . . . . . . . : Saturday, November 20, 2010 9:45:53
AM
```

**5** If you want to use the host ID associated with the network adapter connected to the same network as your system, then determine the correct network adapter using the description and IP address.

**Note:** The host ID of any listed network adapter is appropriate for creating license files as long as the associated network adapter remains in the server. However, using the host ID associated with the network adapter connected to the same network as your system may help avoid future confusion.

**6** Write down the physical address shown with the selected network adapter, removing the hyphens, and store it in a safe place for use as the host ID in the Lexmark Licensing Portal.

## Viewing or downloading existing licenses

**1** Open the Lexmark Licensing portal at **http://software.lexmark.com**.

**2** Type the entitlement ID you received when you purchased your licenses, and then click **Login**.

**3** Click **Manage Licenses**.

Each record represents a license file generated using the current entitlement ID.

**4** Select the line for the license you want to view or download, and then click **View Licenses**.

**5** To download the license file, click **Save To File**.

**6** To return to the start page of the Lexmark Licensing Portal, click **Complete**.

# Upgrading the license of an existing server

**Note:** Back up your current license files before updating with new files.

**1** Open the Lexmark Licensing portal at **http://software.lexmark.com**.

**2** Type the entitlement ID you received when you purchased your license, and then click **Login**.
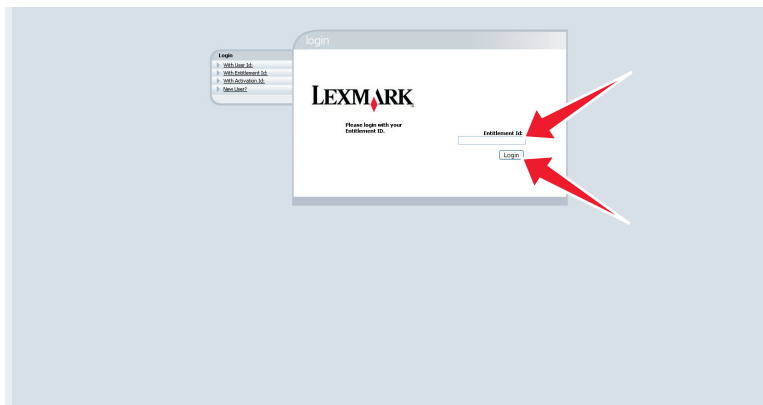


**3** Click **Manage Entitlements**.
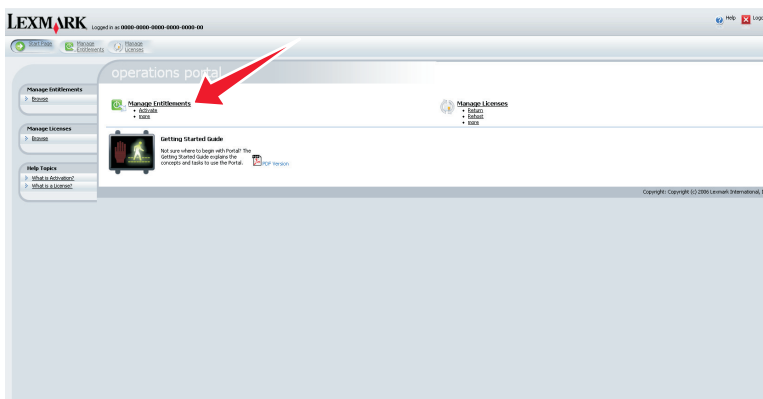


**4** Select the line for the product Lexmark Distributed Intelligent Capture Server License that indicates one or more licenses in the Copies Left column, and then click **Activate**.
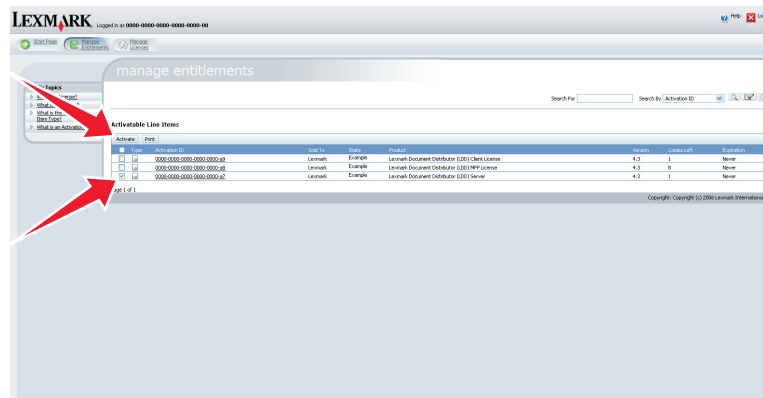


**5** In the Host ID field, type the host ID of your server. For more information, see .

**6** In the Fulfill Count field, type **1**, and then click **Generate**.
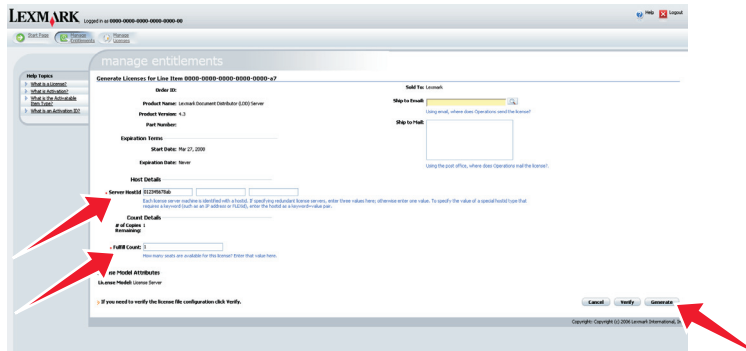


**7** Click **Save To File**, and then save the file using a descriptive file name, such as `server.lic`, to a folder accessible to the load balancer.
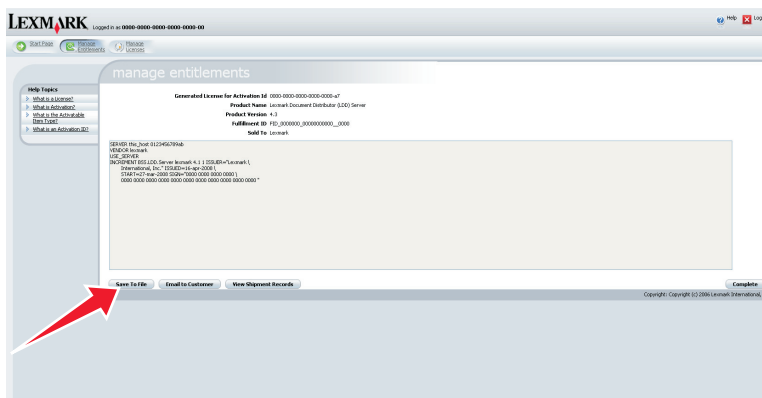


**8** Click **Complete**.

**Note:** If you are using a failover cluster for the load balancer, then repeat steps through 1 through 7, using the host ID of each standby node of the failover cluster. Use unique file names to avoid overwriting existing license files.

**9** From the System tab in LMC, select **Licenses** from the System list.

**10** Click **Add License**.

**11** In the window that appears, type a path to a license file, or click **Browse** to browse for a license file, and then click **Upload**.

**Note:** Uploading license files copies them to the program folder. You can safely move or delete the license files from the temporary location where you saved them.

# Adding an MFP, e-forms virtual printer, or software client license to an existing server

**Note:** Back up your current license files before updating with new files.

**1** Open the Lexmark Licensing portal at **http://software.lexmark.com**.

**2** Type the entitlement ID you received when you purchased your licenses, and then click **Login**.
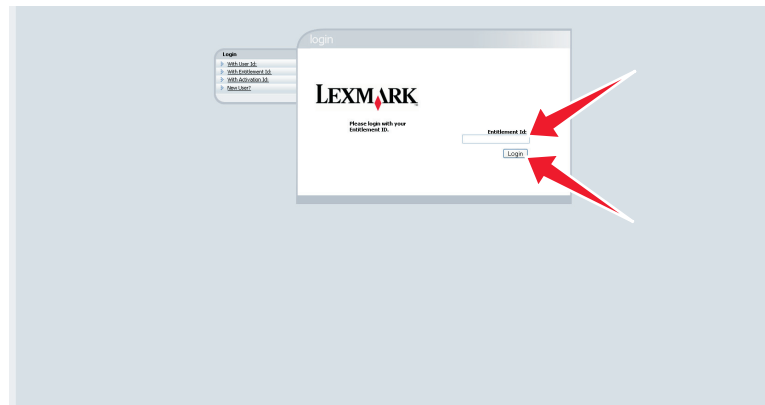


**3** Click **Manage Entitlements**.
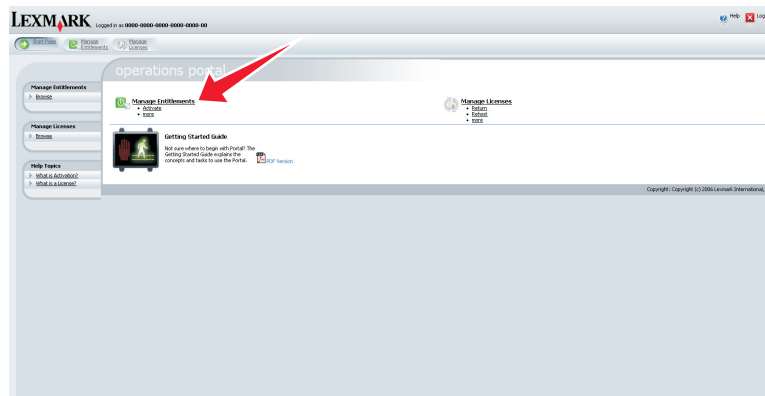


**4** Select the license to activate:

- For an MFP license, select the line for the product Lexmark Distributed Intelligent Capture MFP License that indicates one or more licenses in the Copies Left column, and then click **Activate**.

- For an e-forms virtual printer license, select the line for the product Lexmark Distributed Intelligent Capture EFVP License that indicates one or more licenses in the Copies Left column, and then click **Activate**.

- For a software client license, select the line for the product Lexmark Distributed Intelligent Capture Client License that indicates one or more licenses in the Copies Left column, and then click **Activate**.
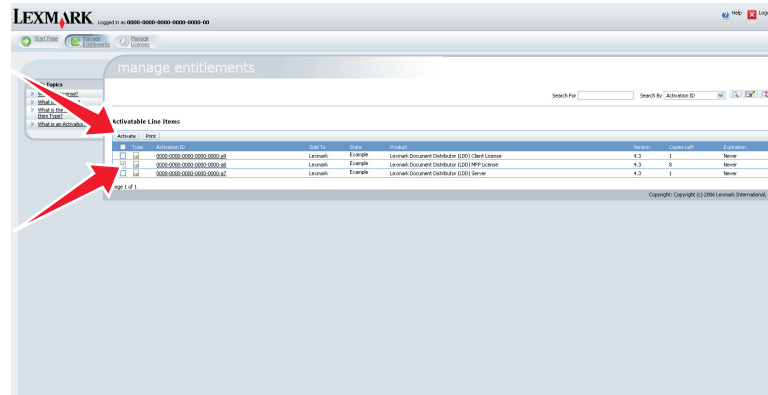
**5** Type the host ID of your server into the first Host ID field. For more information, see .

**6** Type the number of printers, virtual printers, or software clients associated with the current server in the Fulfill Count field.

**7** Click **Generate**.
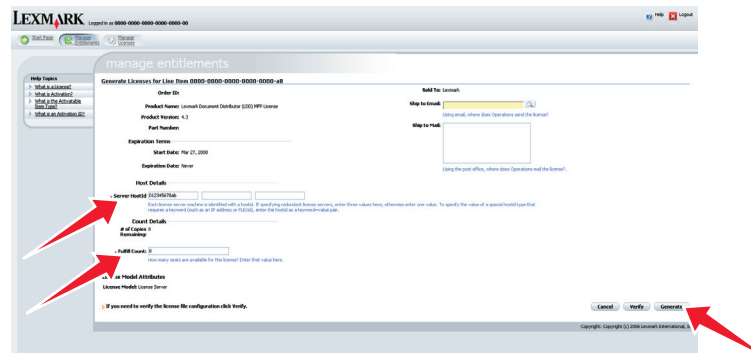


**8** Click **Save To File**, and then save the file using a descriptive file name, such as **mfp.lic**, **efvp.lic**, or **client.lic**, to a folder accessible to the load balancer.

   **Note:** The server automatically adds a time stamp to the file name of new licenses as they are installed, so existing licenses are not overwritten if the file name used is the same as an already installed license file.

**9** Click **Complete**.

   **Note:** If you are using a failover cluster for the load balancer, then repeat steps 1 through 8, using the host ID of each standby node of the failover cluster. Use unique file names to avoid overwriting existing license files.

**10** From the System tab in LMC, select **Licenses** from the System list.

**11** Click **Add License**.

**12** In the window that appears, type a path to a license file, or click **Browse** to browse for a license file.

**13** Click **Upload**.

   **Note:** Uploading license files copies them to the program folder. You can safely move the license files from the temporary location where you saved them.

# Re-hosting licenses

Activating purchased licenses associates the server license and each printer license with the host ID of the load balancer and generates license files that will work only with that load balancer. If the load balancer is transferred to a new computer, then printers are moved to a different server system, or the network adapter is changed in the load balancer, the applicable licenses must be reallocated to the new host ID.

1 Open the Lexmark Licensing portal at **http://software.lexmark.com**.

2 Type the entitlement ID you received when you purchased your licenses, and then click **Login**.

3 Click **Manage Licenses**.

4 Select a license, and then click **Rehost**.

5 Replace the existing server host ID with the host ID of the new load balancer. For more information on determining the host ID, see "Activating Lexmark Distributed Intelligent Capture licenses" on page 12.

6 In the Rehost Count field, type the number of licenses to re-host :

- When moving a server license, always use **1**.
- When moving all printer licenses to the new server system, use the number shown in the Fulfill Count field.
- To move only some of the existing printer licenses to the new server system (known as a partial re-host), enter a number less than the number show in the Fulfill Count field.

7 Click **Rehost**.

The new license is shown. If you are re-hosting only some printer licenses, a second fulfillment ID is shown.

8 If you are re-hosting all licenses, then click **Save To File**, and then save the new license file to a folder accessible to the new Lexmark Distributed Intelligent Capture system.

If you are re-hosting only some of the printer licenses, then you must replace the license file on the original server system:

a Note the host ID for the license file associated with each fulfillment ID shown to determine the server system with which each of the new license files is associated.

b Click **Save To File** while viewing the license for the original server system, and then save the new license file.

c Click **Save To File** while viewing the license for the new server system, and then save the new license file. Use a different name or folder from the license file for the original server system so that you do not overwrite it.

9 Click **Complete**.

**Note:** When moving all licenses, this procedure must be completed once for the server license, and a second time for all printer licenses.

10 Launch Lexmark Management Console for the new system in your Web browser, and then add a new license. For more information, see "Adding an MFP, e-forms virtual printer, or software client license to an existing server" on page 50.

11 If you are re-hosting only some of the printer licenses, then repeat step 10 for the original server.

# Viewing logs

## Viewing installation logs

When the cause of an installation problem is not obvious, you can view the logs created during installation to help determine the cause. The logs can also help Lexmark Customer Support in assisting to solve your problem.

**1** Click **Start**, and then click **Run**.

**2** Type **"%ALLUSERSPROFILE%\Lexmark\LDD4x"**, and then click **OK**.

**3** Open any of the following log files in a text editor, or send them to Customer Support as necessary:

- ldd_InstallUninstall.log
- ldd_installhelper.log
- LxProxy.log
- AbbyyMsiLog.txt

Additionally, other logs may be available, depending on the steps taken during installation. Other files that have names beginning with "ldd" are also logs related to the installation processes.

## Viewing the server log

All server activity at the selected message priority is recorded in the file lsas.log in the folder Lexmark\Solutions\tomcat\logs where the server is installed. Open the file in a text editor to view the log.

The default message severity for recording is **warn**. When troubleshooting a problem, the message priority can be changed to **debug** to capture all available messages:

**1** Click the **System** tab in LMC.

**2** Set the server for which you are changing the message priority offline. Make sure the server is offline before proceeding. Click **Refresh**, and then make sure **offline** is reported in the Status column for the server.

**3** In a text editor, open the file **log4j-lsas.xml** from the folder Lexmark\Solutions\apps\wf-ldss\WEB-INF\classes where the server is installed.

**4** In the following lines, change **"warn"** to **"debug"**:

```
<!-- Root Logger. -->
<root>
   <priority value="warn" />
```

**5** Save and close the file.

**6** From the Windows Services control panel on the server computer, restart the Lexmark Solutions Application Server service.

**7** From the System tab, set the server online. For more information, see .

**Note:** After recording the necessary data, the message priority should be changed back to **warn** to save disk space.

# Troubleshooting

## Solving problems with LMC

### The browser displays a 5yy error when accessing LMC

When services are starting on the system or the system is under a heavy processing load, your browser may display a 5yy error, such as "500 Internal Server Error" or "503 Service Unavailable," when you try to access LMC.

**1** Make sure the system has been running long enough for all services to start. It may take several minutes to start all services when the system is first booted. If the system is recently booted, or the load balancer is overloaded, then wait a few minutes, and then try again.

**2** If the load balancer is under a heavy processing load, then try again when the system is processing fewer jobs.

**3** Determine whether a problematic server installation is causing LMC to be inaccessible through the load balancer:

    **a** Access LMC directly on each server using the URL **http://*server*:9788/lmc**, where ***server*** is the computer where the server is installed.

    **b** If you can successfully access LMC directly on a server, then use the System Status task on the System tab to determine whether any of the servers in the system are not communicating.

    **c** If any server is not communicating, then uninstall it from the computer where it is installed.

    **Note:** If this is not possible, or if the entry remains after uninstalling, then select the non-communicating server or servers in LMC, and then click **Remove Server(s)**.

    **d** Access LMC using the load balancer address.

**4** If the issue is still not resolved, then uninstall and reinstall all components, making sure to enter correct addresses for the database and load balancer where applicable.

### LMC responds very slowly

Several servers that are not communicating may cause LMC to respond very slowly.

Determine whether non-communicating servers appear in LMC:

**1** Access LMC directly on an active server using the URL **http://*server*:9788/lmc**, where ***server*** is the computer where the server is installed.

**2** Use the System Status task on the System tab to determine whether any of the servers in the system are not communicating.

**3** If any servers are not communicating, then select them from the list, and then click **Remove Server(s)**.

**4** Access LMC using the load balancer address.

# LMC does not finish loading or data is missing

If cookies are not enabled, then LMC may continue to display `Loading` for an extended period after logging in, or data may be missing or incorrect on some screens.

Try one or more of the following:
- Make sure cookies are allowed for the address where you access LMC. Cookies must be enabled on your Web browser in order to use LMC.
- Make sure you have Adobe Flash Player 10 or later installed. If your Web browser settings do not allow ActiveX controls to run, then you must upgrade manually by visiting the Adobe Web site.

# An error occurs when uploading a formset

Make sure you have Adobe Flash Player 10 or later installed. If your Web browser settings do not allow ActiveX controls to run, then you must upgrade manually on the Adobe Web site.

# User cannot access some tasks in LMC

Check with the administrator if the group to which the user belongs has limited access to that task.

# User can still access tasks even after privileges are removed

Check the Privileges settings of all the groups to which the user belongs. For more information, see "Assigning privileges to groups" on page 38.

# Solving server problems

# One or more servers cannot be set online

Try one or more of the following:
- Make sure a license is installed for each server during installation. For more information about activating licenses, see "Activating Lexmark Distributed Intelligent Capture licenses" on page 12. For more information about adding licenses after installation, see "Adding an MFP, e-forms virtual printer, or software client license to an existing server" on page 50.
- Check your proxy, firewall, and other network settings across the Lexmark Distributed Intelligent Capture system to make sure communication is allowed among components.
- Uninstall and reinstall the problem server making sure to enter correct addresses for the database and load balancer. Note that when the server is installed on the same computer as the database and the load balancer, the fully qualified domain name of the computer must still be used, not localhost or the loopback address (`127.0.0.1`).
- Make sure the correct address is used for the database when installing the load balancer. Note that when the load balancer is installed on the same computer as the database, the fully qualified domain name of the computer must still be used, not localhost or the loopback address (`127.0.0.1`). If the address is specified incorrectly, then uninstall and reinstall the load balancer and all servers.

**Note:** Multiple non-communicating servers may impact system performance. If you do not expect a non-communicating server to quickly reestablish communication, then you should remove it. To remove a server that is not communicating, select the check box beside it in the table, and then click **Remove Server(s)**.

## One or more servers cannot be set offline

From the Windows Services control panel, make sure the Lexmark Solutions Apache Agent service is running.

## Error in importing a license

Try one or more of the following:

- Make sure the correct address is used for the database and load balancer when installing servers. Note that when the server is installed on the same computer as the database and the load balancer, the fully qualified domain name of the computer must still be used, not localhost or the loopback address (`127.0.0.1`). If the address is specified incorrectly, then uninstall and reinstall the applicable servers.
- Make sure the correct address is used for the database when installing the load balancer. Note that when the load balancer is installed on the same computer as the database, the fully qualified domain name of the computer must still be used, not localhost or the loopback address (`127.0.0.1`). If the address is specified incorrectly, then uninstall and reinstall the load balancer and all servers.

## The server log contains Quartz errors

Make sure to synchronize the time on all computers used in the Lexmark Distributed Intelligent Capture system before installing Lexmark Distributed Intelligent Capture components.

If the time is not synchronized, then do the following:

1 Uninstall all components.

2 Synchronize the time on all computers using an NTP server.

3 Reinstall all components.

# Appendix

## Prompts supported by single-function printers

Single-function printers do not support all prompts supported by multifunction printers. Lists of supported prompts are included in the table below.

| | Touch screen printers | Non-touch screen printers |
|---|---|---|
| Supported prompts | • ArrayPrompt<br>• AuthenticationPrompt[1]<br>• BooleanPrompt<br>• CustomVlmlPrompt<br>• ImageBooleanPrompt<br>• ImageListPrompt<br>• ImageMessagePrompt<br>• IntegerPrompt<br>• ListPrompt<br>• MessagePrompt<br>• NumericPrompt<br>• PasswordPrompt<br>• StringPrompt<br>• NullPrompt | • ArrayPrompt<br>• AuthenticationPrompt[1, 2]<br>• BooleanPrompt<br>• IntegerPrompt<br>• ListPrompt<br>• MessagePrompt<br>• NumericPrompt<br>• PasswordPrompt[3]<br>• StringPrompt[2]<br>• NullPrompt[4] |

[1] Requires a supported card reader.

[2] Supported by T654 and W850 models only.

[3] Supports only numeric PINs in e-Task printers. E-Task printers include C520, C522, C524, C530, C532, C534, C732, C734, C736, C780, C782, C920, C935, E450, E460, E642, T640, T642, T644, T650, T652, W840.

[4] Supported by e-Task printers only.

## Double-byte character support

Not all printer models support double-byte characters. If your printer is not listed in the table below, it does not support double-byte characters.

| Printer model | Simplified Chinese | Traditional Chinese | Japanese | Korean |
|---|---|---|---|---|
| C748 | X | X | X | X |
| C792 | X | X | X | X |
| C925 | X | X | X | X |
| C950 | X | X | X | X |
| CS510 | X | X | X | X |
| CX410 | X | X | X | X |
| CX510 | X | X | X | X |

| Printer model | Simplified Chinese | Traditional Chinese | Japanese | Korean |
|---|---|---|---|---|
| MS610 | X | X | X | X |
| MS810, MS812 | X | X | X | X |
| MX410, MX510, MX511 | X | X | X | X |
| MX610, MX611 | X | X | X | X |
| MX710, MX711 | X | X | X | X |
| MX810, MX811, MX812 | X | X | X | X |
| X463, X464, X466 | X | X |  | X |
| X548 | X | X | X | X |
| X642 | X |  |  |  |
| X644, X646 | X |  |  | X |
| X651, X652, X654, X656, X658 | X | X |  | X |
| 6500 | X | X | X | X |
| X734, X736, X738 | X | X |  | X |
| X746, X748 | X | X | X | X |
| X782 | X |  |  | X |
| X792 | X | X | X | X |
| X850, X852, X854 | X |  | X | X |
| X860, X862, X864 | X | X |  | X |
| X925 | X | X | X | X |
| X940, X945 | X |  | X | X |
| X950, X952, X954 | X | X | X | X |

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July 2014

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