



Lexmark<sup>TM</sup>

# Device Deployment Utility

Version 2.15

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## Administrator's Guide

March 2025

[www.lexmark.com](http://www.lexmark.com)

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# Change history

## March 2025

- Added support for some Lexmark printer models. For more information, see [“Supported printer models” on page 9](#).
- Removed support for Windows 8.1 and Windows Server 2012 operating system.

## May 2024

- Added support for some Lexmark printer models. For more information, see [“Supported printer models” on page 9](#).
- Added IPv6 support.

## September 2022

- Added support for some Lexmark printer models. For more information, see [“Supported printer models” on page 9](#).
- Added support for the Windows Server 2022 operating system.

## October 2021

- Removed support for Windows 7 and Windows Server 2008 R2 operating system.

## December 2019

- Added information on the following:
  - Deploying NPA files
  - Deploying PKCS files
  - Exporting logs, reports, shortcuts, and settings
  - Configuring deployment timeout
  - Deleting default device certificates
  - Disabling one or more tasks in the workflow
- Added support for some Lexmark printer models. For more information, see [“Supported printer models” on page 9](#).

## October 2018

- Added information on the following:
  - Ports used by Device Deployment Utility (DDU)
  - Supported commands
  - Log level setting

## April 2018

- Added support for some Lexmark printer models. For more information, see [“Supported printer models” on page 9](#).
- Updated information on the following:
  - Deployment settings
  - Sample configuration of the app-config.xml file

## September 2017

- Added support for some Lexmark printer models. For more information, see [“Supported printer models” on page 9](#).
- Added instructions on the following:
  - Creating a variable configuration file for Scan to Network
  - Removing held print jobs
- Added information on the following:
  - Status panel and workflow logs
  - System requirements

## June 2017

- Added support for some Lexmark printer models. For more information, see [“Supported printer models” on page 9](#).
- Added information on configuring the interval in between tasks in a workflow.
- Added information on deploying the following:
  - Signed device certificate
  - CA certificate
  - Raw flash file
- Added instructions on the following:
  - Exporting a device certificate
  - Adding a signed device certificate
  - Updating a device certificate
  - Stopping the workflow when a failure occurs
  - Uploading a firmware or flash file

## October 2016

- Added support for some Lexmark printer models. For more information, see [“Supported printer models” on page 9](#).
- Added information on deploying a workflow on secured devices using Kerberos, LDAP, or LDAP + GSSAPI authentication method.
- Removed information on configuring ports when deploying an eSF application.
- Updated information on the following:
  - Configuring deployment and discovery settings using the app-config file or DDU.
  - Deploying a raw firmware, application, or other flash file.

## **June 2016**

- Added support for Brazilian Portuguese, French, German, Italian, Simplified Chinese, and Spanish.
- Added information on the following:
  - Adding devices after creating a deployment workflow
  - Creating a variable settings file and configuration file bundles
  - Creating a lookup CSV file for variable settings file and configuration file bundles
  - Deploying variable settings file and configuration file bundles

## **March 2016**

- Added support for version 2.4.1 of DDU.

## **February 2016**

- Added support for version 2.4 of DDU.

## **November 2015**

- Added support for version 2.3 of DDU.

## **August 2015**

- Initial document release.

# Overview

Device Deployment Utility (DDU) is a standalone tool that does not require any installation, server setup, or connection to a public network. It lets you deploy the following to a fleet of multifunction products:

- Embedded Solutions Framework (eSF) applications
- Firmware
- Raw flash files (.fls)
- Settings files (.ucf)
- Scan to Network settings file (.ucf)
- Configuration file bundles (.zip)
- Custom packages
- Certificate Authority (CA) certificates
- NPA files (.npa)
- PKCS files (.p12/.pfx)

Using DDU, you can do the following:

- Start, stop, or uninstall applications in the device.
- Restart the device.
- Export a device certificate signing request.
- Update a device certificate.
- Delete a device certificate.
- Import a signed device certificate.
- Add an interval between tasks in a workflow.
- Export all device settings, shortcuts, reports, and logs.

This document provides information on how to configure, use, and troubleshoot DDU.

System requirements

## System requirements

### Supported operating systems

- Windows Server 2022
- Windows Server 2019
- Windows Server 2016
- Windows 10

**Note:** DDU supports only the 64-bit version of the operating systems.

Make sure that the following port numbers are open:

Protocol	DDU port number	Printer port number	Used for
<b>Network Printing Alliance Protocol (NPA)</b> Transport: NPAP or NPANT	UDP 9187	UDP 9300	Communication with Lexmark network printers
<b>ObjectStore</b> Transport: XML or XMLNT	UDP 9187	UDP 6000	Communication with Lexmark network printers
<b>Lexmark Secure Transport (LST)</b>	<ul style="list-style-type: none"> <li>• UDP 6100</li> <li>• Ephemeral TCP port</li> </ul> <b>Note:</b> This port is used for hand-shaking.	<ul style="list-style-type: none"> <li>• UDP 6100</li> <li>• TCP 6110</li> </ul> <b>Note:</b> This port is used for hand-shaking.	Secure communication with Lexmark network printers  <b>Note:</b> The following solutions use these port numbers and result in an error when run at the same time as DDU: <ul style="list-style-type: none"> <li>• Markvision™ Enterprise</li> <li>• Lexmark™ Document Distributor</li> </ul> Make sure that they are not running on the same computer or server at the same time.
<b>Multicast Domain Name System (mDNS)</b>	Ephemeral UDP port	UDP 5353	Discovery of some Lexmark network printers and determining the security capabilities of printers
<b>Simple Network Management Protocol (SNMP)</b>	Ephemeral UDP port	UDP 161	Discovery of and communication with Lexmark and third-party network printers
<b>File Transfer Protocol (FTP)</b>	Ephemeral TCP port	TCP 21 TCP 20	File upload
<b>Trivial File Transfer Protocol (TFTP)</b>	Ephemeral UDP port	UDP 69	File upload  <b>Note:</b> This protocol is used only on older printers.
<b>Hypertext Transfer Protocol (HTTP) or Hypertext Transfer Protocol over SSL (HTTPS)</b>	Ephemeral TCP port	TCP 80 TCP 443	File upload
<b>Raw Print Port</b>	Ephemeral TCP port	TCP 9100 TCP 9500 TCP 9501	File upload

**Note:** Some communications require an ephemeral port. This port is an allocated range of available port numbers on the server. When a client requests a temporary communication session, the server assigns a dynamic port number to the client. The port number is valid only for a short duration, but it is reusable after the previous session expires.

Supported languages



## Supported languages

DDU supports the following:

- English
- French
- German
- Italian
- Portuguese
- Simplified Chinese
- Spanish

Supported printer models

## Supported printer models

- Lexmark B2236<sup>1</sup>
- Lexmark B2338<sup>1</sup>, B2442<sup>1</sup>, B2546<sup>1</sup>, B2650<sup>1</sup>, B2865<sup>2</sup>
- Lexmark B3440<sup>1</sup>, B3442<sup>1</sup>
- Lexmark C2132
- Lexmark C2240<sup>1</sup>, C2325<sup>1</sup>, C2425<sup>1</sup>, C2535<sup>1</sup>
- Lexmark C2335
- Lexmark C3224<sup>1</sup>
- Lexmark C3326<sup>1</sup>
- Lexmark C3426<sup>1</sup>
- Lexmark C4150<sup>1</sup>, C6160<sup>1</sup>, C9235<sup>1</sup>
- Lexmark C4342
- Lexmark C4352
- Lexmark C746, C748
- Lexmark C792
- Lexmark C925<sup>2</sup>, C950, C9655
- Lexmark CS310, CS410, CS510
- Lexmark CS317, CS417, CS517
- Lexmark CS331<sup>1</sup>
- Lexmark CS421<sup>1</sup>, CS521<sup>1</sup>, CS622<sup>1</sup>
- Lexmark CS431<sup>1</sup>
- Lexmark CS531
- Lexmark CS632
- Lexmark CS720<sup>1</sup>, CS725<sup>1</sup>
- Lexmark CS727<sup>1</sup>, CS728<sup>1</sup>, CX727<sup>1</sup>
- Lexmark CS730
- Lexmark CS735, CS737

- Lexmark CS820<sup>1</sup>, CS827<sup>1</sup>
- Lexmark CS921<sup>1</sup>, CS923<sup>1</sup>, CS927<sup>1</sup>
- Lexmark CS943, CS963
- Lexmark CX310, CX410, CX510
- Lexmark CX317, CX417, CX517
- Lexmark CX331<sup>1</sup>
- Lexmark CX421<sup>1</sup>, CX522<sup>1</sup>, CX622<sup>1</sup>, CX625<sup>1</sup>
- Lexmark CX431<sup>1</sup>
- Lexmark CX532
- Lexmark CX635
- Lexmark CX725<sup>1</sup>
- Lexmark CX730
- Lexmark CX735, CX737
- Lexmark CX820<sup>1</sup>, CX825<sup>1</sup>, CX827<sup>1</sup>, CX833, CX860<sup>1</sup>
- Lexmark CX920<sup>1</sup>, CX921<sup>1</sup>, CX922<sup>1</sup>, CX923<sup>1</sup>, CX924<sup>1</sup>, CX927<sup>1</sup>
- Lexmark CX942, CX943, CX944, CX930, CX931, CX960, CX961, CX962, CX963
- Lexmark CX950, CX951
- Lexmark M1140, M1145, M3150
- Lexmark M1242<sup>1</sup>, M1246<sup>1</sup>, M3250<sup>1</sup>, M5255<sup>1</sup>, M5265<sup>1</sup>, M5270<sup>1</sup>
- Lexmark M3350
- Lexmark M5155, M5163, M5170
- Lexmark M5255<sup>1</sup>, M5265<sup>1</sup>, M5270<sup>1</sup>
- Lexmark MB2236<sup>1</sup>
- Lexmark MB2338<sup>1</sup>, MB2442<sup>1</sup>, MB2546<sup>1</sup>, MB2650<sup>1</sup>, MB2770<sup>1</sup>
- Lexmark MB3442<sup>1</sup>
- Lexmark MC2325<sup>1</sup>, MC2425<sup>1</sup>, MC2535<sup>1</sup>, MC2640<sup>1</sup>
- Lexmark MC3224<sup>1</sup>
- Lexmark MC3326<sup>1</sup>
- Lexmark MC3426<sup>1</sup>
- Lexmark MS310, MS312, MS315, MS410, MS415, MS510, MS610
- Lexmark MS317, MS417, MS517
- Lexmark MS321<sup>1</sup>, MS421<sup>1</sup>, MS521<sup>1</sup>, MS621<sup>1</sup>, MS622<sup>1</sup>
- Lexmark MS331<sup>1</sup>, MS431<sup>1</sup>
- Lexmark MS531
- Lexmark MS617, MS817, MS818
- Lexmark MS631, MS632
- Lexmark MS710, MS711, MS810, MS811, MS812
- Lexmark MS725<sup>1</sup>, MS821<sup>1</sup>, MS822<sup>1</sup>, MS823<sup>1</sup>, MS824<sup>1</sup>, MS825<sup>1</sup>, MS826<sup>1</sup>
- Lexmark MS911
- Lexmark MX310, MX410, MX510, MX511, MX610, MX611
- Lexmark MX317, MX417, MX517

- Lexmark MX321<sup>1</sup>, MX421<sup>1</sup>, MX521<sup>1</sup>, MX522<sup>1</sup>, MX622<sup>1</sup>
- Lexmark MX331<sup>1</sup>, MX431<sup>1</sup>
- Lexmark MX432
- Lexmark MX532
- Lexmark MX617, MX717, MX718
- Lexmark MX632
- Lexmark MX6500
- Lexmark MX710, MX711, MX810, MX811, MX812
- Lexmark MX721<sup>1</sup>, MX722<sup>1</sup>, MX725<sup>1</sup>, MX822<sup>1</sup>, MX824<sup>1</sup>, MX826<sup>1</sup>
- Lexmark MX910, MX911, MX912
- Lexmark MX931
- Lexmark MX953
- Lexmark T650<sup>2</sup>, T652<sup>2</sup>, T654<sup>2</sup>, T656<sup>2</sup>
- Lexmark X651<sup>2</sup>, X652<sup>2</sup>, X654<sup>2</sup>, X656<sup>2</sup>, X658<sup>2</sup>, XS651<sup>2</sup>, XS652<sup>2</sup>, XS654<sup>2</sup>, XS658<sup>2</sup>
- Lexmark X746, X748, X792
- Lexmark X925, X950, X952, X954
- Lexmark XC2130, XC2132
- Lexmark XC2235<sup>1</sup>, XC2240<sup>1</sup>, XC4240<sup>1</sup>
- Lexmark XC2326
- Lexmark XC2335
- Lexmark XC4140<sup>1</sup>, XC4150<sup>1</sup>, XC6152<sup>1</sup>, XC8155<sup>1</sup>, XC8160<sup>1</sup>
- Lexmark XC4342
- Lexmark XC4352
- Lexmark XC8355
- Lexmark XC9225<sup>1</sup>, XC9235<sup>1</sup>, XC9245<sup>1</sup>, XC9255<sup>1</sup>, XC9265<sup>1</sup>
- Lexmark XC9325, XC9335, XC9445, XC9455, XC9465
- Lexmark XC9525, XC9535
- Lexmark XC9625, XC9635, XC9645
- Lexmark XM1135, XM1140, XM1145, XM3150
- Lexmark XM1242<sup>1</sup>, XM1246<sup>1</sup>, XM3250<sup>1</sup>
- Lexmark XM3142
- Lexmark XM3350
- Lexmark XM5163, XM5170, XM5263, XM5270
- Lexmark XM5365<sup>1</sup>, XM5370<sup>1</sup>
- Lexmark XM7155, XM7163, XM7170, XM7263, XM7270
- Lexmark XM7355<sup>1</sup>, XM7365<sup>1</sup>, XM7370<sup>1</sup>
- Lexmark XM9145, XM9155, XM9165
- Lexmark XM9335, XM9655

<sup>1</sup> SNMPv3 support must be enabled on the printer.

<sup>2</sup> A printer certificate update is required. In this release, the Java platform security and performance update remove support for some certificate-signing algorithms, such as MD5 and SHA1. This change prevents DDU from working with some printers. For more information, see the [help documentation](#).

## Using the utility

You can run DDU using one of the following:

- User interface
- Command line with status window
- Command line with no status window (quiet mode)

### Notes:

- For more information on running DDU using its interface, see [“Creating deployment workflows” on page 15](#). For more information on running DDU using the command line, see [“Using the command line” on page 36](#)
- DDU does not have in built authentication mechanisms. It is advisable that the machines in which DDU runs has appropriate authentication and authorization controls.

Launching DDU

## Launching DDU

### Using the ddu.bat file

- 1 From your computer, navigate to the **DDUAppFolder\bin** directory, where **DDUAppFolder** is the location of the DDU folder.
- 2 Run the **ddu.bat** file.

### Using the command prompt

- 1 From your computer, run the command prompt.
- 2 Type **DDUAppFolder\bin\ddu.bat**, where **DDUAppFolder** is the location of the DDU folder.

## Using the graphical user interface

Understanding the home screen

## Understanding the home screen

The screenshot shows the Lexmark utility home screen. At the top left is the Lexmark logo. Below it, there are four tabs: 'Add New' (1), 'Browse...' (2), 'Create CSV File' (3), and 'Export Device Data' (4). To the left of the main table are two input fields: 'Deployment Name' (6) and 'Deployment Description' (7). The main area is a table with columns 'Name', 'Description', and 'Date'. A large empty box (5) is in the center of the table.

The following lets you navigate and use DDU:

Section	Home screen tabs	Description
1	Add New	Lets you create workflows. A workflow is a set of tasks that are performed on printers. <b>Note:</b> For information on creating workflows, see <a href="#">“Creating deployment workflows” on page 15</a> .
2	Browse	Lets you browse workflows.
3	Create CSV File	Lets you discover printers, and then create .csv files for deploying workflows and creating packages from the Package Builder utility. <b>Note:</b> To obtain the eSF application and license packages from the Package Builder utility, go to <a href="https://cdp.lexmark.com/package-builder/">https://cdp.lexmark.com/package-builder/</a> .
4	Export Device Data	Lets you discover printers, and then export its certificate signing request (CSR), all device settings, shortcuts, logs, and reports information.
5	Workflow panel	Shows the list of created workflows. You can run, edit, or delete workflows from this panel.
6	Deployment Name	The name of the workflow.
7	Deployment Description	The description of the workflow. <b>Note:</b> This field is optional.

## Creating deployment workflows

Understanding the workflows

### Understanding the workflows

Section	Workflow tabs	Description
1	Add Package	Lets you add a custom package or a package from the Package Builder utility. <b>Note:</b> For more information, see <a href="#">“Adding packages” on page 18.</a>
2	Add Settings Files(.ucf)	Lets you add .ucf settings files for deployment. When adding printer settings files, make sure that the printer is running on eSF version 4 or earlier. You can add eSF settings files to any supported printer model. <b>Notes:</b> <ul style="list-style-type: none"> <li>For more information, see <a href="#">“Adding settings files (.ucf)” on page 18.</a></li> <li>For information on checking the eSF version of your printer, see the <a href="#">help information documentation.</a></li> </ul>
3	Add Certificates	Lets you add printer certificates for deployment. <b>Note:</b> For more information, see <a href="#">“Adding certificates” on page 19.</a>

Section	Workflow tabs	Description
4	Add Configuration Files(.zip)	Lets you add .zip configuration files for deployment to printers running on eSF version 4 or later. The configuration files can contain printer settings or eSF settings. <b>Notes:</b> <ul style="list-style-type: none"> <li>• For more information, see <a href="#">“Adding configuration files (.zip)” on page 20.</a></li> <li>• For information on checking the eSF version of your printer, see the <a href="#">help information documentation.</a></li> </ul>
5	Add NPA files(*.npa)	Lets you add .npa command files for deployment. <b>Note:</b> For more information, see <a href="#">“Adding npa files (.npa)” on page 21.</a>
6	Add License	Lets you add printer licenses for deployment. <b>Note:</b> For more information, see <a href="#">“Adding licenses” on page 21.</a>
7	Add Firmware or Flash file(*.fls)	Lets you add the following for deployment: <ul style="list-style-type: none"> <li>• Firmware files</li> <li>• Application flash files</li> <li>• Engine codes</li> <li>• Scanner codes</li> </ul> <b>Note:</b> For more information, see <a href="#">“Adding a firmware or flash file” on page 22.</a>
8	Add Task	Lets you add the following tasks for deployment: <ul style="list-style-type: none"> <li>• Start, stop, or uninstall an application</li> <li>• Restart printers</li> <li>• Remove held print jobs</li> <li>• Increase the interval between tasks</li> <li>• Update a device certificate</li> <li>• Delete device certificate</li> </ul> <b>Note:</b> For more information, see <a href="#">“Adding tasks” on page 23.</a>
9	Workflow panel	Shows the list of created workflows.
10	Deployment Name	The name of the workflow.
11	Deployment Description	The description of the workflow. <b>Note:</b> This field is optional.
12	Devices	The printers added for the workflow.
13	Edit Device List	Lets you edit the printers added for the workflow. <b>Note:</b> For more information, see <a href="#">“Adding printers” on page 16.</a>
14	Advanced Settings	Lets you configure the deployment and discovery settings. <b>Note:</b> For more information, see <a href="#">“Configuring deployment and discovery settings using DDU” on page 61.</a>

## Adding printers



## Adding printers

**Note:** If a workflow is clicked for the first time, then the user is prompted to add devices where the items are deployed to.

- 1 From DDU, click **Add New**.
- 2 Type the deployment name and description.
- 3 Click **Edit Device List**.
- 4 Do either of the following:

**Note:** To skip adding printers, click **Cancel**. If this task is skipped, you are prompted to add them before creating a workflow. For more information on adding devices after creating a workflow, see [“Adding printers after creating a deployment workflow” on page 33](#).

### Add devices manually

- a Select **Add a device**.
- b In the "Add a device" field, type the IP addresses or host names of the devices, and then click **+**.

Use the following formats to add IP addresses:

- **10.195.\*.\*** (wildcards for only the last two octets)
- **10.195.y.yy** (single IP address)
- **10.195.1.3-10.195.1.255** (IP address range)
- **printerHostname.company.com** (host name)
- **2001:db8:0:0:0:0:2:1** (single full IPv6 address; wildcards are not supported)

**Note:** To remove an IP address or host name, select the IP address or host name in the "Discovered devices" list, and then click **—**.

**Add devices using the CSV file**

- a Select **CSV File**.
- b Browse to the CSV input file.

**Note:** The default file name is **DduInput.csv**. For information on creating a CSV file, see [“Creating CSV files” on page 30](#).

- 5 If necessary, select **Secured Device** to prompt the user to type the authentication credentials used to access secured devices when deploying the workflow.
- 6 Click **OK**.

After a printer is added, DDU checks if the printer is online. If it is not, then a **Discovery Failed** error message appears.

**Adding packages****Adding packages**

**Note:** If you are deploying Scan Center Basic or Premium version 1.0, then make sure that the printer is running on eSF version 5 firmware. If you are deploying Scan Center Basic or Premium version 1.1, then make sure that the printer is running on eSF version 6 firmware. For information on checking the eSF version of your printer, see the [help information documentation](#).

- 1 From DDU, do either of the following:
  - Click **Add New > Add Package**.
  - Click **Add Package**.
- 2 Select **Package Builders Package** or **Custom Package**.

**Note:** When creating a custom package, printer information such as the serial number is not required.

If **Package Builder Package** is selected, then do the following:

- a Create a PkgBldrInput.csv file. For more information, see [“Creating CSV files” on page 30](#).
- b Access the Package Builder application.
- c From the application, upload the PkgBldrInput.csv file.

**Note:** For more information, see the *Package Builder User's Guide*.

- 3 Specify the location of the package file.
- 4 Click **OK**.

**Adding settings files (.ucf)**

## Adding settings files (.ucf)

**Note:** When adding printer settings files, make sure that the printer is running on eSF version 4 or earlier. You can add eSF settings files to any supported printer model. For information on checking the eSF version of your printer, see the [help information documentation](#).

- 1 From DDU, do either of the following:
  - Click **Add New > Add Settings Files(.ucf)**.
  - Click **Add Settings Files(.ucf)**.
- 2 Select either of the following:
  - **Settings file**
  - **Settings file (Scan to Network)**—Add a settings file for Scan to Network.
- 3 Select either of the following:
  - **Standard UCF File**—Deploy a settings file with the same settings to printers.
  - **Variable UCF File**—Deploy a settings file with different settings to printers.
- 4 Do either of the following:
  - If **Standard UCF File** is selected, then in the Settings File field, specify the location of the updated settings file.
  - If **Variable UCF File** is selected, then do the following:
    - a If you have already created the variable settings file based on the template manually, then in the Settings File field, specify its location. If you do not have a variable settings file, then click **Create Template File** to create the file using DDU.
    - b If you have already created the lookup .csv file with different values for the variable setting names based on the template, then in the Lookup File field, specify its location. If you do not have a lookup .csv file, then click **Create Lookup CSV File** to create the file using DDU.

### Notes:

- For more information on creating a variable configuration file and lookup .csv file using DDU, see [“Creating a variable configuration .ucf or .xml file and a lookup .csv file using DDU” on page 24](#).
- For more information on creating a variable configuration file and lookup .csv file manually, see [“Creating a variable configuration .ucf or .xml file and a lookup .csv file manually” on page 27](#).

- 5 Click **OK**.

## Adding certificates

### Adding certificates

Printer certificates are unique identifiers that are used to authenticate the following:

- HTTPS
- SSL
- TLS
- IPSec
- 802.11 connections

**1** From DDU, do either of the following:

- Click **Add New > Add Certificates**.
- Click **Add Certificates**.

**2** Do either of the following:

**Add a CA certificate**

- a** Click **Add CA Certificate**.
- b** Specify the location of the certificate.

**Add a signed device certificate**

- a** Click **Add Signed Device Certificate**.
- b** Specify the directory of the signed certificate.

**Add a PKCS certificate**

- a** Click **Add PKCS Certificate**.
- b** Specify the location of the certificate.
- c** Type a friendly name for the certificate.
- d** Type the password for the PKCS file.

**Notes:**

- Check the Do hostname validation checkbox to validate hostname with common name of the certificate. By default, it is checked.
- PKCS file deployment from DDU is only supported in devices with latest version of firmware.

**3** Click **OK**.

Adding configuration files (.zip)

## Adding configuration files (.zip)

**Note:** This feature is applicable only to printers running on eSF version 4 or later. The configuration files can contain printer settings or eSF settings. For information on checking the eSF version of your printer, see the [help information documentation](#).

**1** From DDU, do either of the following:

- Click **Add New > Add Configuration Files(.zip)**.
- Click **Add Configuration Files(.zip)**.

**2** Select either of the following:

- **Standard Configuration File**—Deploy a configuration file with the same settings to printers.
- **Variable Configuration File**—Deploy a configuration file with different settings to printers.

**3** Do either of the following:

- If **Standard Configuration File** is selected, then in the Configuration File field, specify the location of the updated configuration file.
- If **Variable Configuration File** is selected, then do the following:
  - a** If you have already created the variable settings file based on the template manually, then in the Settings File field, specify its location. If you do not have a variable settings file, then click **Create Template File** to create the file using DDU.
  - b** If you have already created the lookup .csv file with different values for the variable setting names based on the template, then in the Lookup File field, specify its location. If you do not have a lookup .csv file, then click **Create Lookup CSV File** to create the file using DDU.

**Notes:**

- For more information on creating a variable configuration file and lookup .csv file using DDU, see [“Creating a variable configuration .ucf or .xml file and a lookup .csv file using DDU” on page 24.](#)
- For more information on creating a variable configuration file and lookup .csv file manually, see [“Creating a variable configuration .ucf or .xml file and a lookup .csv file manually” on page 27.](#)

**4** Click **OK**.

Adding npa files (.npa)

**Adding npa files (.npa)****1** From DDU, do either of the following:

- Click **Add New > Add NPA Files(.npa)**.
- Click **Add NPA Files(.npa)**.

**2** Do either of the following:

- a** Click **Select NPA File (\*.npa)**.
- b** Specify the location of the file.

**3** Select the NPA Port.

**Note:** The default port number is 9500.

**4** Click **OK**.

Adding licenses

**Adding licenses**

This feature lets you add licenses for eSF applications.

**Note:** Make sure that the application specific for the license is installed on the printer.

**1** From DDU, do either of the following:

- Click **Add New > Add License**.
- Click **Add License**.

**2** Select the license type.

**Notes:**

- If **eSF 1.x, 2.x and 3.x licenses** is selected, then select the application where you want to deploy the license. Select this option when using printers running on eSF version 3 or earlier.
- Printers running on eSF version 4 or later support only licenses with the .zip format.
- Printers running on eSF version 3 or earlier support only licenses with the .lic format.
- For information on checking the eSF version of your printer, see the [help information documentation](#).

**3** Specify the location of the license file.

**4** Click **OK**.

## Adding a firmware or flash file

Use this feature when deploying firmware files, application flash files, or engine codes and scanner codes.

**Note:** Deploying a raw firmware flash file may take some time to finish. Make sure that the firmware deployment settings are configured accordingly.

**1** From DDU, do either of the following:

- Click **Add New > Add Firmware or Flash Files(\*.fls)**.
- Click **Add Firmware or Flash Files(\*.fls)**.

**2** Specify the location of the flash file.

**3** Select one of the following:

- **Firmware File**—Deploy a firmware flash file.

**Notes:**

- If **Save File Path Only** is selected, then make sure that the file is located and accessible in the specified file path during the deployment. This setting does not include the firmware file in the workflow. Clearing this setting compresses the file and saves it in the workflow.
  - If the firmware version in the file is later than the firmware version on the printer, then the firmware on the printer is upgraded. Otherwise, it is downgraded. If the firmware version in the file is the same as the version on the printer, then the firmware is not deployed. To deploy the firmware without checking the firmware version of the printer, select **Force Deployment**.
  - You can add only one firmware file in a workflow.
  - The firmware file is the first in the installation sequence by default. For example, if you add a firmware file in the fifth sequence, then it moves to the first sequence automatically. However, the sequence of the firmware task can be altered.
- **Application file**—Deploy application .fls files.
  - **Others**—Deploy engine codes, scanner codes, or other flash files. The Others option does not validate the flash file.

**Warning—Potential Damage:** Deploying inappropriate flash files may damage the printer.

**4** Click **OK**.

## Adding tasks

This feature lets you add multiple tasks to a workflow.

**1** From DDU, do either of the following:

- Click **Add New > Add Task**.
- Click **Add Task**.

**2** Do any of the following:

### Add a task to start, stop, or uninstall an application

**a** Select a task.

**b** In the Application Id/Name menu, select an application.

If the application is not on the list, then do either of the following:

#### Update the app-id-version.txt file

**Note:** You can find the configuration file at **DDUAppFolder\config**, where **DDUAppFolder** is the location of the DDU folder.

**1** Using a text editor, open the **app-id-version.txt** file.

**2** Type **AppID=AppName: ver1, ver2, ver3**, where **AppName** is the friendly name, **AppID** is the application ID, and **ver1, ver2, ver3** are application versions separated by a comma.

**3** Save the file.

#### Notes:

- To show only the application ID in the menu, type **AppID=: ver1, ver2, ver3**. Adding **AppID** using this method applies it on the entire session.
- You can find the file in **DDUAppFolder\Config\**, where **DDUAppFolder** is the location of the DDU folder.

#### Type the application ID

In the Application Id/Name menu, type the application ID.

**Note:** This option does not update the app-id-version.txt file. The added application ID is only available for the created workflow. Adding **AppID** using this method does not apply it on the entire session.

**c** If necessary, in the Version menu, select or type the version of the application that you selected.

**Note:** If **Any** is selected, then DDU starts, stops, or uninstalls any version of the application that is installed on the printer.

**d** Click **OK**.

**Note:** For more information on obtaining the application ID and version number, contact your solution provider.

### Add a task to restart the printers

Select **Reboot printer**.

### Add a task to remove held print jobs

Select **Remove Held Jobs**.

**Note:** The **Remove Held Jobs** option is applicable to printers running on eSF version 4 or earlier.

**Add a task to increase the interval between tasks**

- a Select **Add Delay**.
- b Specify the interval in milliseconds.

**Add a task to update a device certificate**


Select **Update Device Certificate**.

**Add a task to delete device certificate**

Select **Delete Device Certificate**.

- 3 Click **OK**.
- 4 Type the deployment name and description.
- 5 Click **Save**.

**Notes:**

- The firmware file is the first in the installation sequence by default. For example, if you add a firmware file in the fifth sequence, then it moves to the first sequence automatically.
- To move tasks, click the up and down arrows.
- To stop a task, in the Stop Workflow On Failure column, select the task that stops the workflow when a failure occurs.
- You can edit and delete tasks.
- To add a printer, click **Edit Device List**. For more information, see [“Adding printers” on page 16](#).
- To configure the deployment and discover settings, click . For more information on configuring DDU, see [“Configuring the utility” on page 61](#).

## Creating a variable configuration file and a lookup .csv file

Creating a variable configuration .ucf or .xml file and a lookup .csv file using DDU

### Creating a variable configuration .ucf or .xml file and a lookup .csv file using DDU

#### Creating a variable configuration .ucf or .xml file

A variable configuration file contains the variable setting names based on the template of the original settings file or configuration file.

**Note:** Use a text editor that supports UTF-8.

- 1 From DDU, add a settings file or a configuration file.  
**Note:** For more information on adding a settings file, see [“Adding settings files \(.ucf\)” on page 18](#). For more information on adding a configuration file, see [“Adding configuration files \(.zip\)” on page 20](#).
- 2 Select **Variable UCF File** or **Variable Configuration File**.
- 3 Click **Create Template File**.
- 4 In the Base UCF Path or Base VCC Path field, specify the location of the settings file or configuration file of the standard configuration file.



- 5 Click **+**.
- 6 On the left panel, select a file, and then click **>>**. The properties and values of all settings available in the file are shown in the right panel.
- 7 In the right panel, select the settings. Selecting a setting updates its current value to a variable, **\${Var\_PropertyName}**, where **PropertyName** is the name of the setting. For example, if you selected **WS\_SCAN\_ENABLED**, then the automatically generated variable is **\${Var\_WS\_SCAN\_ENABLED}**.

**Notes:**

- To change the automatically generated variable name, double-click it.
- When changing the automatically generated variable, make sure that the variable name format is **\${VariableName}**, where **VariableName** is a unique property name. Variable names are used when creating the lookup .csv file.
- To sort the settings alphabetically, double-click the **Property** column.

- 8 If necessary, repeat steps 6 and 7 to select multiple files.

- 9 Select either of the following:

- **Save All Settings**—Create a variable configuration file that contains all the settings.
- **Save Changes Only**—Create a variable configuration file that contains only the settings that you have updated. For example, if you have updated only two settings, then only those settings are included in the configuration file. Other settings are not copied.

**Note:** For the variable configuration file of Scan to Network, all settings are saved by default.

- 10 If necessary, specify the location where you want to save the new variable configuration file in Out Directory.

**Notes:**

- By default, the new file name contains the suffix **\_Var** and is saved in the location of the original settings file or configuration file.
- The file name of the new variable configuration file cannot be changed.

- 11 Click **Save**.

**Creating a lookup .csv file**

A .csv file contains different values for the variable setting names based on the template.

**Notes:**

- You can create or specify a lookup .csv file only after creating or specifying a variable configuration file.
- We recommend creating the .csv file using a spreadsheet that supports CSV file format.

- 1 From DDU, add a settings file or a configuration file.

**Note:** For more information on adding a settings file, see [“Adding settings files \(.ucf\)” on page 18](#). For more information on adding a configuration file, see [“Adding configuration files \(.zip\)” on page 20](#).

- 2 Select **Variable UCF File** or **Variable Configuration File**.

- 3 In the Settings File or Configuration File field, specify the location of the variable configuration file or create a template.

- 4 Click **Create Lookup CSV File**.

- 5** Depending on the identifier used when adding a printer, select either **IP Address Header** or **Host Name Header**.

**Notes:**

- For more information, see [“Adding printers” on page 16](#).
- Use the same identifier when adding a printer. For example, if you used the printer IP address when adding a printer, then use the same when creating the lookup .csv file.
- The first row contains the identifier and the specified variable name in the configuration file.
- The variable name in the first row appears only when the variable configuration file is created using DDU.

- 6** In the list, double-click on the fields to specify the values of the variable name for each printer.

- 7** If necessary, specify the location where you want to save the lookup .csv file in Out Directory.

**Notes:**

- By default, the file name contains the prefix **CSV\_** and is saved in the location of the original settings file or configuration file.
- The file name of the new variable configuration file cannot be changed.

- 8** Click **Save**.

## Understanding the files

### Sample standard settings file

```
nvOemMfgLongName "Lexmark International"
HTTPSENABLE TRUE
LPDTIMEOUT 90
printTimeout "90"
```

### Sample variable .ucf file

```
nvOemMfgLongName $(variable_1)
HTTPSENABLE $(variable_2)
LPDTIMEOUT $(variable_3)
printTimeout $(variable_4)
```

The lookup file contains the values of the variable names in the configuration file. These values are deployed to printers that are specified in the lookup file.

Understanding the lookup .csv file

## Understanding the lookup .csv file

The file contains the values for each variable defined in the variable configuration file. These values are deployed to the printers defined in the lookup file.

The following lookup file deploys the configuration file to three printers and retains the current value of **printTimeout** for the third printer:

### Sample lookup file

```
IP_ADDRESS,variable_1,variable_2,variable_3,variable_4
192.168.1.1,"abc International",TRUE,60,"80"
```

```
192.168.1.2,"xyz International",FALSE,70,"60"
192.168.1.5,"mno International",FALSE,50,CUR_VAL
```

The first row contains the headers of the lookup file and the variable names defined in the variable configuration file. Use the same identifier when adding a printer. For example, if you used the printer IP address when adding a printer, then use the same when creating a lookup .csv file.

The succeeding rows are the printers where you want to deploy the configuration file and the values for each variable.

#### Notes:

- Make sure that the values of the variable names have the same format as the variable names in the original .ucf or .xml configuration files. For example, if the value in the original .ucf or .xml configuration file has double quotes, then add double quotes. If the value in the original .ucf or .xml configuration file is in capital letters, then use capital letters.
- If the value of a setting contains a back slash, then type another back slash before the first. For example, if the value is `\\192.168.1.2\share`, then enter `\\\\192.168.1.2\\share`.
- If you do not want to update the current value of a variable setting, then set the value to **CUR\_VAL**.

Creating a variable configuration .ucf or .xml file and a lookup .csv file manually

## Creating a variable configuration .ucf or .xml file and a lookup .csv file manually

### Creating a variable .ucf or .xml file

A variable file contains the variable setting names based on the template of the original settings file or configuration file.

**Note:** Use a text editor that supports UTF-8.

- 1 Using a text editor, open the .ucf file.
- 2 From the setting that you want to have a variable value, change its value to `${VariableName}`, where **VariableName** is a unique variable name.
- 3 Save the file.

#### Notes:

- We recommend saving the .ucf file with a different name to distinguish it from the original file. For example, you can add the prefix **Var\_** to the file name.
- Take note of the variable names in the configuration file. These variable names are used when creating the lookup .csv file.

### Sample standard settings file

```
nvOemMfgLongName "Lexmark International"
HTTPSENABLE TRUE
LPDTIMEOUT 90
printTimeout "90"
```

### Sample variable .ucf file

```
nvOemMfgLongName ${variable_1}
HTTPSENABLE ${variable_2}
```

```
LPDTIMEOUT ${variable_3}
printTimeout ${variable_4}
```

### Creating a VCC variable configuration file bundle

**Note:** Use a text editor that supports UTF-8.

- 1 Extract the .xml or .ucf files in the bundle that you want to have variable settings.
- 2 Using a text editor, open the .xml or .ucf files.
- 3 From the setting that you want to have a variable value, change the value to **`${VariableName}`**, where **`VariableName`** is a unique variable name.
- 4 Save the file.
- 5 Compress the updated .xml or .ucf files in another bundle.

#### Notes:

- We recommend saving the bundle with a different name to distinguish it from the original bundle. For example, you can add the prefix **`Var_`** in the file name.
- When updating multiple configuration files, use unique variable names. A variable name used in an .xml or .ucf file must not be used in a different .xml or .ucf file contained in the VCC bundle.
- Take note of the variable names in the configuration file. These variable names are used when creating the lookup .csv file.

The following are updated configuration files in a VCC configuration file bundle:

#### Sample bundle.xml file

```
<?xml version="1.0" encoding="UTF-8"?>
<bundle>
<bundleInfo>
<name> Exported Bundle </name>
<description>
Settings exported on Mon May 30 02:54:47 2016
: FW version 201604071044</description>
</bundleInfo>
<vcc:esfSettings xmlns:vcc="vcc">
<esfSetting src="esf_settings.xml" />
</vcc:esfSettings>
...
<deviceSettings>
<setting name="nvVNCEnabled">Off</setting>
<setting name="mfp.general.settingsTimeout">${variable_1}</setting>
<setting name="pcl.A4Width">198 mm</setting>
<setting name="network.IPV6DHCPENABLE">${variable_2}</setting>
<setting name="rgbColorReplace2.outputR">${variable_3}</setting>
</deviceSettings>
</bundle>
```

#### Creating a lookup .csv file

A .csv file contains different values for the variable setting names based on the template.

**Note:** We recommend creating the .csv file using a spreadsheet that supports CSV file format.

- 1 Using a spreadsheet, in the first row, type the headers.

**Note:** Headers contain the identifier for the printers where you want to deploy the configuration file and the variable names in the configuration file.

- 2 Depending on the identifier used when adding a printer, use either HOSTNAME or IP\_ADDRESS as the printer identifier.

**Notes:**

- For example, if you want to use the printer IP address, and you have specified Var1, Var2, and Var3, then type **IP\_ADDRESS,Var1,Var2,Var3** as the header.
- Use the same identifier when adding a printer. For example, if you used the printer IP address when adding a printer, then use the same when creating a lookup .csv file.

- 3 In the succeeding rows, type the printer host names or IP addresses, and the values of each variable for each printer.

**Sample lookup file**

```
IP_ADDRESS,variable_1,variable_2,variable_3,variable_4
192.168.1.1,"abc International",TRUE,60,"80"
192.168.1.2,"xyz International",FALSE,70,"60"
192.168.1.5,"mno International",FALSE,50,CUR_VAL
```

**Notes:**

- When using a spreadsheet that supports CSV file format, the values for each variable line does not show a comma. The values are separated by column and cell.
- Make sure that the values of the variable names have the same format as the variable names in the original .ucf or .xml configuration files. For example, if the value in the original .ucf or .xml configuration file has double quotes, then add double quotes. If the value in the original .ucf or .xml configuration file is in capital letters, then use capital letters.
- If the value of a setting contains a back slash, then type another back slash before the first. For example, if the value is **\\192.168.1.2\\share**, then enter **\\\\192.168.1.2\\share**.
- If you do not want to update the current value of a variable setting, then set the value to **CUR\_VAL**.

**Note:** For more information on setting the values in the lookup .csv file, see [“Understanding the lookup .csv file” on page 26](#).

- 4 Save the file.

- Make sure that the values of the variable names are the same as the values in the original .ucf or .xml configuration files.
- If the value of a setting contains a back slash, then type another back slash before the first. For example, if the value is **\\192.168.1.2\\share**, then enter **\\\\192.168.1.2\\share**.
- Updating the new CSV file using a UTF text editor may result in an error.

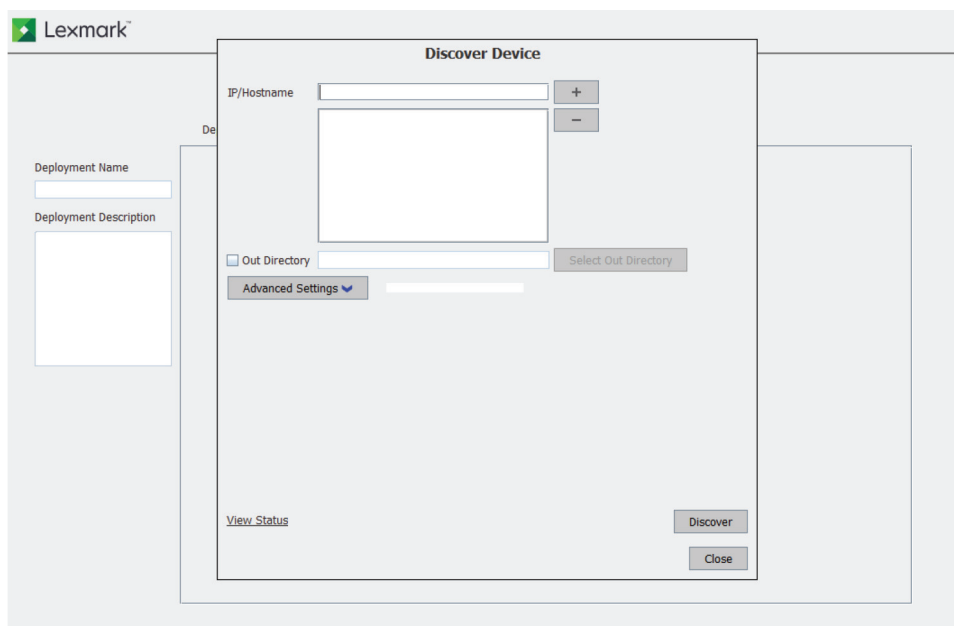
## Browsing preconfigured workflows

### Notes:

- After creating a workflow, you can save it as a .zip file.
- To locate and deploy a created workflow file, from DDU, click **Browse**.

Creating CSV files

### Creating CSV files



A CSV file is used for deploying and creating packages. It contains the details of the supported printers on the network.

- 1 From DDU, click **Create CSV File**.
- 2 In the IP/Hostname field, type the IP address or host name of the devices, and then click **+**.

Use the following formats to add IP addresses:

- **10.195.\*.\*** (wildcards for only the last two octets)
- **10.195.y.yy** (single IP address)
- **10.195.1.3-10.195.1.255** (IP address range)
- **printerHostname.company.com** (host name)
- **2001:db8:0:0:0:0:2:1** (single full IPv6 address; wildcards are not supported)

**Note:** To remove an IP address or host name, select it from the list, and then click **—**.

**3** If necessary, do the following:

- To change the destination of the created CSV files, click **Out Directory**.
- To configure device discovery settings, click **Advanced Settings**.

**Note:** To change the default file names of the generated CSV files, update the Ddu's Input File Name and Package Builder's Input File Name settings. For more information, see [“Understanding advanced settings” on page 61](#).

**4** Click **Discover**.

The following files are created in Out Directory:

- **PkgBldrInput.csv**—You can directly import this file to Package Builder for creating packages.
- **DduInput.csv**—You can use this file in DDU for deployment.

**Notes:**

- Only supported devices are added on the device lists.
- If the device lists are already created, and you want to create another device list, then make sure to update the file names. If you use the same file name as the existing device list, then DDU appends only the discovered supported devices.

## Exporting device data

This feature lets you discover printers, and then export their certificate signing requests (CSR), all device settings, shortcuts, logs, and reports information.

**1** From DDU, click **Export Device Data**.

**2** Do any of the following:

### Export a device CSR

- a Click **Export Device CSR**.
- b Add printers. For more information, see [“Adding printers” on page 16](#).
- c From the Export Device CSR dialog, review the default path where the exported certificate files are stored.

**Note:** To change the default path, click **Out Directory**, and then browse to the correct directory.

- d Click **Export**.

**Note:** To check the deployment status, click **View Status**.

### Export all device settings

- a Click **Export All Device Settings**.
- b Add printers. For more information, see [“Adding printers” on page 16](#).
- c From the Export All Device Settings dialog, review the default path where the exported files are stored in .zip format.

**Note:** To change the default path, click **Out Directory**, and then browse to the correct directory.

- d Click **Export**.

**Note:** To check the deployment status, click **View Status**.

**Export device shortcuts**

- a** Click **Export Device Shortcuts**.
- b** Add printers. For more information, see [“Adding printers” on page 16](#).
- c** From the Export Device Shortcuts dialog, review the default path where the exported files are stored in .zip format.

**Note:** To change the default path, click **Out Directory**, and then browse to the correct directory.

- d** Click **Export**.

**Note:** To check the deployment status, click **View Status**.

**Export all device reports**

- a** Click **Export All Device Reports**.
- b** Add printers. For more information, see [“Adding printers” on page 16](#).
- c** From the Export All Device Reports dialog, review the default path where the exported files are stored in .zip format.

**Note:** To change the default path, click **Out Directory**, and then browse to the correct directory.

- d** Click **Export**.

**Note:** To check the deployment status, click **View Status**.

**Export logs**

- a** Click **Export Logs**.
- b** Add printers. For more information, see [“Adding printers” on page 16](#).
- c** From the Export Logs dialog, review the default path where the exported files are stored in .zip format.

**Note:** To change the default path, click **Out Directory**, and then browse to the correct directory.


- d** Click **Export**.

**Note:** To check the deployment status, click **View Status**.

## Managing deployment workflows

### Editing deployment workflows

#### Editing deployment workflows

- 1** From DDU, select a deployment workflow.
- 2** Click **Edit**.
- 3** Configure the items.
- 4** If necessary, click  to configure the deployment workflow settings.

**Note:** For more information on configuring DDU, see [“Configuring the utility” on page 61](#).

- 5** Click **Save**.



6 Do either of the following:

- To update the package, click **Overwrite workflow**.
- To create another package, click **Save as new workflow**.

**Note:** You can also edit tasks. For more information, see [“Adding tasks” on page 23](#).

Deleting deployment workflows

## Deleting deployment workflows

1 From DDU, select a deployment workflow.


2 Click .

**Note:** Deleting a workflow that is shared from another computer does not delete the saved .zip file. If the user has write access on the workflow, then the .zip file is deleted only in the shared folder.



Adding printers after creating a deployment workflow

## Adding printers after creating a deployment workflow

You can add printers without editing the deployment workflow. Printers added using this process do not overwrite the printers added when creating a workflow.

- 1 From the home screen, click  beside the deployment workflow.
- 2 Add printers. For more information, see [“Adding printers” on page 16](#).

### Notes:

- When adding or editing a printer list after creating a workflow,  appears beside the workflow. If this icon does not appear, then the printer list saved with the workflow is used during deployment.
- To remove the updated printer list, click , remove all the printers or .csv files, and then click **OK**.

## Deploying workflows

Deploying workflows

## Deploying workflows

1 From DDU, select a deployment workflow.

2 Click .

3 If you are deploying a workflow on secured devices, then do the following:

a Select the authentication method used to access the secured printer.


- **Basic Authentication**—Use a user name, user name and password, or PIN when accessing the printer.
- **Kerberos**

- **LDAP**
- **LDAP + GSSAPI**

**Note:** For multiple secured devices, use the same authentication method and password.

- b** Type your authentication credentials.
- c** Click **OK**.

**Notes:**

- To check the deployment status, click **Status**.
- If you start another workflow while a workflow is still running, then the newly started workflow is queued and starts after the running workflow finishes.
- To stop deploying a workflow, click .

Enabling firmware updates access control

## Enabling firmware updates access control

Before you deploy to secured printers, make sure that the Firmware Updates access control is enabled. Do the following:

- 1** Access the Embedded Web Server.
  - a** Obtain the printer IP address. Do either of the following:
    - Locate the IP address on the printer home screen.
    - View the IP address in the Network Overview section or in the TCP/IP section of the Network/Ports menu.
  - b** Open a web browser, and then type the printer IP address.
- 2** From the Embedded Web Server, depending on your printer model, do either of the following:
  - For eSF version 5:
    - a** Click **Settings > Security > Manage Groups/Permission > Edit Group > Access Controls > Device Management**.
    - b** Select **Firmware Updates**.
    - c** Click **Save**.
  - For eSF version 4 or earlier:
    - a** Click **Settings > Security > Security Setup > Access Controls > Management**.
    - b** Set Firmware Updates to **No Security**.
    - c** Click **Submit**.

## Understanding the status panel and workflow logs

The status panel contains the following messaging structures:

- **ALL**—Shows the following:
  - IP addresses and their executed tasks
  - Summary overview of the executed tasks
  - Failed tasks and error messages
- **Communication Errors**—Shows the IP addresses with failed discovery tasks and their error messages.

- **Deployment Errors**—Shows the IP addresses with failed deployment tasks and their error messages.
- **Successful Deployments**—Shows the IP addresses with all successful tasks.

To change the default workflow logging settings, in the Advanced dialog, from the Logs section, configure either of the following:

- **Clear Logs Interval (Days)**—Specify the number of days before logs that are older than the specified value are removed.

**Notes:**

- The default value is **15** days.
- This task occurs during the deployment of a workflow.
- **Automatically Export Deployment Log**—If set to **true**, then logs are automatically exported after the deployment of a workflow. If set to **false**, then the status panel shows an option to export the deployment log.

**Note:** The default value is **true**.

Accessing logs

## Accessing logs

The workflow deployment logs are located in the **%DDUAppFolder%\bin\logs** folder, where **DDUAppFolder** is the location of the DDU folder.

**Note:** The naming convention used for workflow deployment logs is **DeploymentLog\_%WORK-FLOW-NAME%\_%TIMESTAMP%.csv**,

where:

**DeploymentLog** is the name of the deployment log.

**TIMESTAMP** is the log time.

The workflow deployment logs (.csv) contain any of the following:

- Successful deployments
- Communication errors
- Deployment errors

DDU uses the Apache® Log4j™ software API to create the application and deployment logs. The configuration file for the logs can be found in **DDUAppFolder\config\log4j-config.xml**, where **DDUAppFolder** is the location of the DDU folder. For more information, see [“Configuring log settings” on page 64](#).

By default, the log files are saved in the folder for the DDU executable files.

DDU creates the following logs:

- **Application log (ddu.log)**—If set to **DEBUG**, then this log file helps **developers** track each request and response between the device and the computer. Threads of requests and responses are classified according to device IP addresses.
- **Deployment log**—This log file helps **users** view device details and status of solutions and licenses being installed. The file also provides a message to confirm that deployment is successful. For easier sorting of device status, the log file is created in CSV format, with the IP address of the device as the first column.

### Checking for deployment errors

- 1 Open the **deployment.csv** file. The log file can be found in **DDUAppFolder\bin\log**, where **DDUAppFolder** is the location of the DDU folder.
- 2 Filter the log file for errors.

**Note:** If the log file is set to **INFO**, then the file contains the same messages as the status window does.

## Using the command line

Understanding the supported commands

### Understanding the supported commands

Command	Description
<b>-action</b>	Specifies the action for the application.  <b>Possible values</b> <ul style="list-style-type: none"> <li>• <b>start</b></li> <li>• <b>stop</b></li> <li>• <b>uninstall</b></li> </ul>
<b>-app</b>	Specifies the name of the installed application.
<b>-appfls</b>	Specifies that the supplied flash file is an application.
<b>-appVer</b>	Specifies the version information for the installed application. This command is optional.
<b>-ca y</b> Where <b>y</b> is the location of the printer CA certificate file.	Specifies the location of the printer CA certificate file.
<b>-caSign</b>	Updates the signed printer CA certificate file.
<b>-checkhostname</b>	Checks if the common name of the certificate matches the host name of the device. It aborts the deployment if it does not match.
<b>-csv y</b> Where <b>y</b> is the location of the .csv file.	Specifies the location of the .csv file that contains the printer IP addresses.
<b>-delay y</b> Where <b>y</b> is the interval between tasks in milliseconds.	Specifies the interval between tasks.
<b>-deleteDeviceCert</b>	Deletes default device certificates.
<b>-deploy</b>	Deploys a package or .ucf file.
<b>-discover</b>	Discovers printers.
<b>-dpl y</b> Where <b>y</b> is the location of the package ZIP file.	Specifies the location of the deployable package ZIP file.

Command	Description
<b>-exportCA</b>	Exports the printer CA certificates.
<b>-exportLogs</b>	Exports device logs including device history.
<b>-exportReports</b>	Exports all device reports.
<b>-exportSettings</b>	Exports device settings.
<b>-exportShortcuts</b>	Exports device shortcuts.
<b>-f</b>	Deploys the firmware flash file without checking the firmware version on the printer.
<b>-fls y</b> Where <b>y</b> is the location of the .fls file.	Specifies the location of the .fls file.
<b>-friendlyname y</b> Where <b>y</b> is the friendly name of the PKCS certificate.	Specifies friendly name of the PKCS certificate.
<b>-fwfls</b>	Specifies that the provided .fls file is a firmware.
<b>-fwr y</b> Where <b>y</b> is the location of the firmware flash file.	Specifies the location of the firmware flash file.
<b>-help</b>	Shows all the supported command options in DDU.
<b>-ip y</b> Where <b>y</b> is the printer IP address.	Specifies a list of comma-separated IP addresses or host names, or IP address ranges.
<b>-lic y</b> Where <b>y</b> is the location of the license file.	Specifies the location of the license file.
<b>-lictech y</b> Where <b>y</b> is the license technology type.	Specifies the license technology. <b>Possible values</b> <ul style="list-style-type: none"> <li>• <b>FNP</b></li> <li>• <b>LEX</b></li> </ul>
<b>-nocsv</b>	Specifies that the discovery output must not be written in the .csv file.
<b>-npa y</b> Where <b>y</b> is the location of the .npa file.	Specifies the absolute path of the .npa file.
<b>-npaport y</b> Where <b>y</b> is the port used to send the command.	Specifies the NPA port that is used for sending the NPA command to the printer.
<b>-out y</b> Where <b>y</b> is the location of the folder where the discovery certificate files are stored.	Specifies the location of the folder where the discovery certificate files are stored.
<b>-pin y</b> Where <b>y</b> is the PIN for accessing secured printers.	Specifies the PIN for accessing secured printers.
<b>-pkcs y</b> Where <b>y</b> is the location of the PKCS certificate file.	Specifies the location of the PKCS certificate file.

Command	Description
<b>-pkcspassword y</b> Where <b>y</b> is the password of the PKCS certificate file.	Specifies the password of the PKCS certificate file.
<b>-pkg y</b> Where <b>y</b> is the location of the package ZIP file obtained from Package Builder.	Specifies the location of the package ZIP file obtained from Package Builder.
<b>-pwd y</b> Where <b>y</b> is the password for accessing secured printers.	Specifies the password for accessing secured printers.
<b>-q</b>	Executes commands without a status window.
<b>-reboot</b>	Reboots printers.
<b>-rhj</b>	Delete held print jobs.
<b>-rlm</b>	The LDAP Kerberos realm.
<b>-rlmSetup y</b> Where <b>y</b> is the setup name configured on the printer when using realm-based authentication method.	Specifies the setup name configured on the printer when using realm-based authentication method.
<b>-rlmType y</b> Where <b>y</b> is the login realm type configured on the printer.	Specifies the login realm type configured on the printer. <b>Possible values</b> <ul style="list-style-type: none"> <li>• <b>KERBEROS</b></li> <li>• <b>LDAP</b></li> </ul>
<b>-signCert y</b> Where <b>y</b> is the location of the signed device certificate file.	Specifies the location of the signed device certificate file.
<b>-snf</b>	Specifies if the file is a Scan-to-Network configuration file.
<b>-stop</b>	Stops the workflow.
<b>-ucf y</b> Where <b>y</b> is the location of the .ucf file.	Specifies the location of the .ucf file.
<b>-usr y</b> Where <b>y</b> is the user name for accessing secured printers.	Specifies the user name for accessing secured printers.
<b>-varCsv y</b> Where <b>y</b> is the location of the Virtual Solution Center (VSC) file that contains variable setting information.	Specifies the location of the VSC file that contains variable setting information.
<b>-vcc y</b> Where <b>y</b> is the location of the VSC Configuration file.	Specifies the location of the VSC Configuration file.
<b>-workflow y</b> Where <b>y</b> is the location of the workflow file.	Executes a workflow configuration.

## Discovering printers

1 At the command prompt, type either of the following:

- For a single printer

```
DDUAppFolder\bin\ddu -discover -ip IP -out SavePath
```

- For multiple printers

```
DDUAppFolder\bin\ddu -discover -ip IP_addresses -out SavePath
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the device.

**IP\_addresses** are the IP addresses or host names of the devices separated by commas.

**SavePath** is the location where you want to save the device list.

2 Check the progress of the deployment in the DDU status window.

Deploying eSF application and license packages

## Deploying eSF application and license packages

Before deploying to secured printers, make sure that the printer Firmware Updates access control is enabled. For more information, see [“Enabling firmware updates access control” on page 34](#).

**Note:** To create eSF application and license packages from Package Builder, see the *Package Builder User's Guide*.

1 Extract the deployment package to your local drive.

2 At the command prompt, type one or more of the following:

**Note:** To deploy the settings file to multiple printers, replace **-ip IP** with **-csv DeviceListPath**.

- For unsecured printers

```
DDUAppFolder\bin\ddu -deploy -ip IP -pkg FilePath
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -deploy -ip IP -pkg FilePath -usr UserName -pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -deploy -ip IP -pkg FilePath -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -deploy -ip IP -pkg FilePath -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -deploy -ip IP -pkg FilePath -usr UserName -pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address of the printer.

**FilePath** is the location of the package file obtained from Package Builder.

**DeviceListPath** is the location of the .csv file that contains the list of IP addresses.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 3 Check the progress of the deployment in the DDU status window.

Deploying custom packages

## Deploying custom packages

Before deploying to secured printers, make sure that the printer Firmware Updates access control is enabled. For more information, see [“Enabling firmware updates access control” on page 34](#).

DDU can deploy custom solutions in the form of custom packages. For information on producing custom packages, contact your Lexmark representative.

**Note:** Deploying custom packages with licenses is not supported.

- 1 Save the custom package file to your local drive.
- 2 At the command prompt, type one or more of the following:

**Note:** To deploy the settings file to multiple printers, replace **-ip IP** with **-csv DeviceListPath**.

- For unsecured printers
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -dpl FilePath
```
- For secured printers
  - Basic authentication method using user name, password, or PIN
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -dpl FilePath -usr UserName -pwd Password -pin PIN
```
  - Kerberos authentication method
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -dpl FilePath -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS
```
  - LDAP authentication method
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -dpl FilePath -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```
  - LDAP + GSSAPI authentication method
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -dpl FilePath -usr UserName -pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```



where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address of the printer.

**FilePath** is the location of the custom package file.

**DeviceListPath** is the location of the .csv file that contains the list of IP addresses.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 3 Check the progress of the deployment in the DDU status window.

Deploying settings files (.ucf)

## Deploying settings files (.ucf)

DDU can deploy eSF application settings and printer settings files in .ucf format.

**Note:** You can export a configuration from your eSF application or create a configuration file.

- 1 Save the configuration file to your local drive.
- 2 At the command prompt, type one or more of the following:

### Notes:

- To deploy the Scan to Network settings file, add **-snf** at the end of the command.
- To deploy a variable settings file, create a variable configuration file and lookup .csv file. For more information, see [“Creating a variable configuration .ucf or .xml file and a lookup .csv file manually” on page 27](#).
- To deploy the settings file to multiple printers, replace **-ip IP** with **-csv DeviceListPath**.

- For unsecured printers

```
DDUAppFolder\bin\ddu -deploy -ip IP -ucf FilePath
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -deploy -ip IP -ucf FilePath -usr UserName -pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -deploy -ip IP -ucf FilePath -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -deploy -ip IP -ucf FilePath -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -deploy -ip IP -ucf FilePath -usr UserName -pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address of the printer.

**FilePath** is the location of the configuration file.

**DeviceListPath** is the location of the .csv file that contains the list of IP addresses.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

**3** Check the progress of the deployment in the DDU status window.

Deploying CA certificates

## Deploying CA certificates

DDU can deploy CA certificates with the following formats:

- PEM
- CRT
- CER

### Notes:

- A PEM file can have multiple certificates.
- DDU deploys certificates that are PEM encoded only.

**1** Obtain a CA certificate file.

**2** At the command prompt, type one or more of the following:

**Note:** To deploy the settings file to multiple printers, replace **-ip IP** with **-csv DeviceListPath**.

- For unsecured printers

```
DDUAppFolder\bin\ddu -deploy -ip IP -ca FilePath
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -deploy -ip IP -ca FilePath -usr UserName -pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -deploy -ip IP -ca FilePath -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method  
***DDUAppFolder\bin\ddu -deploy -ip IP -ca FilePath -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName***
- LDAP + GSSAPI authentication method  
***DDUAppFolder\bin\ddu -deploy -ip IP -ca FilePath -usr UserName -pwd Password -rlm RealmName -rlmType LDAP\_GSSAPI -rlmSetup RealmSetupName***

where:

***DDUAppFolder*** is the location of the DDU folder.

***IP*** is the IP address of the printer.

***FilePath*** is the location of the CA certificate file.

***DeviceListPath*** is the location of the .csv file that contains the list of IP addresses.

***UserName*** is the user name for accessing secured printers.

***Password*** is the password for accessing secured printers.

***PIN*** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

***RealmName*** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

***RealmSetupName*** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 3 Check the progress of the deployment in the DDU status window.

## Deploying PKCS certificates

DDU can deploy PKCS certificates in .pfx and .p12 format.

- 1 Obtain a PKCS certificate file.
- 2 At the command prompt, type one or more of the following:

**Note:** To deploy the PKCS file to multiple printers, replace ***-ip IP*** with ***-csv DeviceListPath***.

- For unsecured printers  
***DDUAppFolder\bin\ddu -deploy -ip IP -pkcs FilePath -pkcspassword PKCSPassword -friendlyname FriendlyName -checkhostname***
- For secured printers
  - Basic authentication method using user name, password, or PIN  
***DDUAppFolder\bin\ddu -deploy -ip IP -pkcs FilePath -pkcspassword PKCSPassword -friendlyname FriendlyName -checkhostname -usr UserName -pwd Password -pin PIN***
  - Kerberos authentication method  
***DDUAppFolder\bin\ddu -deploy -ip IP -pkcs FilePath -pkcspassword PKCSPassword -friendlyname FriendlyName -checkhostname -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS***

- LDAP authentication method  
**DDUAppFolder\bin\ddu -deploy -ip IP -pkcs FilePath -pkcspassword PKCSPassword -friendlyname FriendlyName -checkhostname -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName**
- LDAP + GSSAPI authentication method  
**DDUAppFolder\bin\ddu -deploy -ip IP -pkcs FilePath -pkcspassword PKCSPassword -friendlyname FriendlyName -checkhostname -usr UserName -pwd Password -rlm RealmName -rlmType LDAP\_GSSAPI -rlmSetup RealmSetupName**

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address of the printer.

**FilePath** is the location of the CA certificate file.

**DeviceListPath** is the location of the .csv file that contains the list of IP addresses.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

**PKCSPassword** is the password of the PKCS file.

**FriendlyName** is the friendly name of the certificate.

**checkhostname** is required only for the validation of printer host name with the common name of the certificate.

### 3 Check the progress of the deployment in the DDU status window.

Deploying signed device certificates

## Deploying signed device certificates

DDU can deploy signed device certificates in .pem format.

- 1 Obtain a signed device certificate file.
- 2 At the command prompt, type one or more of the following:

**Note:** To deploy the settings file to multiple printers, replace **-ip IP** with **-csv DeviceListPath**.

- For unsecured printers  
**DDUAppFolder\bin\ddu -deploy -ip IP -signCert FilePath**
- For secured printers
  - Basic authentication method using user name, password, or PIN  
**DDUAppFolder\bin\ddu -deploy -ip IP -signCert FilePath -usr UserName -pwd Password -pin PIN**
  - Kerberos authentication method  
**DDUAppFolder\bin\ddu -deploy -ip IP -signCert FilePath -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS**

- LDAP authentication method  
***DDUAppFolder\bin\ddu -deploy -ip IP -signCert FilePath -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName***
- LDAP + GSSAPI authentication method  
***DDUAppFolder\bin\ddu -deploy -ip IP -signCert FilePath -usr UserName -pwd Password -rlm RealmName -rlmType LDAP\_GSSAPI -rlmSetup RealmSetupName***

where:

***DDUAppFolder*** is the location of the DDU folder.

***IP*** is the IP address of the printer.

***FilePath*** is the location of the CA certificate file.

***DeviceListPath*** is the location of the .csv file that contains the list of IP addresses.

***UserName*** is the user name for accessing secured printers.

***Password*** is the password for accessing secured printers.

***PIN*** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

***RealmName*** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

***RealmSetupName*** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 3** Check the progress of the deployment in the DDU status window.

Deploying NPA files

## Deploying NPA files

DDU can send NPA command to printers by deploying .npa files.

- 1** Obtain an NPA file.
- 2** At the command prompt, type one or more of the following:
  - ***DDUAppFolder\bin\ddu -deploy -ip IP -npa NPAFilePath -npaport NPAPort***

**Note:** To deploy NPA file to multiple printers, replace ***-ip IP*** with ***-csv DeviceListPath***.

where:

***DDUAppFolder*** is the location of the DDU folder.

***IP*** is the IP address of the printer.

***NPAFilePath*** is the location of the NPA file.

***DeviceListPath*** is the location of the .csv file that contains the list of IP addresses.

***NPAPort*** is the port using which, the NPA command is sent.

**Note:** NPA command is sent using an unsecured channel. The command does not require any authentication method.

- 3** Check the progress of the deployment in the DDU status window.

Deploying configuration file bundles

## Deploying configuration file bundles

DDU can deploy configuration file bundles only in eSF version 4 or later.

- 1 Obtain a configuration file bundle.
- 2 At the command prompt, type one or more of the following:

### Notes:

- To deploy a variable configuration file bundle, use a bundle with variable configuration files. Then add **-varCsv *LookupFilePath*** after **-vcc**, where ***LookupFilePath*** is the location of the lookup .csv file. For more information, see [“Creating a variable configuration .ucf or .xml file and a lookup .csv file using DDU” on page 24](#).
- To deploy the settings file to multiple printers, replace **-ip *IP*** with **-csv *DeviceListPath***.
- For unsecured printers  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -vcc *FilePath***
- For secured printers
  - Basic authentication method using user name, password, or PIN  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -vcc *FilePath* -usr *UserName* -pwd *Password* -pin *PIN***
  - Kerberos authentication method  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -vcc *FilePath* -usr *UserName* -pwd *Password* -rlm *RealmName* -rlmType KERBEROS**
  - LDAP authentication method  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -vcc *FilePath* -usr *UserName* -pwd *Password* -rlmType LDAP -rlmSetup *RealmSetupName***
  - LDAP + GSSAPI authentication method  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -vcc *FilePath* -usr *UserName* -pwd *Password* -rlm *RealmName* -rlmType LDAP\_GSSAPI -rlmSetup *RealmSetupName***

where:

***DDUAppFolder*** is the location of the DDU folder.

***IP*** is the IP address of the printer.

***FilePath*** is the location of the configuration file bundle.

***DeviceListPath*** is the location of the .csv file that contains the list of IP addresses.

***UserName*** is the user name for accessing secured printers.

***Password*** is the password for accessing secured printers.

***PIN*** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

***RealmName*** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

***RealmSetupName*** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 3 Check the progress of the deployment in the DDU status window.

## Deploying licenses

## Deploying licenses

- 1 Obtain the license file.
- 2 At the command prompt, type one or more of the following:

### Notes:

- To deploy licenses to eSF version 3 or earlier printers, add **-app *AppID*** at the end of the command, where ***AppID*** is the application ID.
- To deploy the settings file to multiple printers, replace **-ip *IP*** with **-csv *DeviceListPath***.
- For unsecured printers  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -lic *FilePath* -lictech *LicenseType***
- For secured printers
  - Basic authentication method using user name, password, or PIN  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -lic *FilePath* -lictech *LicenseType* -usr *UserName* -pwd *Password* -pin *PIN***
  - Kerberos authentication method  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -lic *FilePath* -lictech *LicenseType* -usr *UserName* -pwd *Password* -rlm *RealmName* -rlmType KERBEROS**
  - LDAP authentication method  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -lic *FilePath* -lictech *LicenseType* -usr *UserName* -pwd *Password* -rlmType LDAP -rlmSetup *RealmSetupName***
  - LDAP + GSSAPI authentication method  
***DDUAppFolder*\bin\ddu -deploy -ip *IP* -lic *FilePath* -lictech *LicenseType* -usr *UserName* -pwd *Password* -rlm *RealmName* -rlmType LDAP\_GSSAPI -rlmSetup *RealmSetupName***

where:

***DDUAppFolder*** is the location of the DDU folder.

***IP*** is the IP address of the printer.

***FilePath*** is the location of the license file.

***LicenseType*** is the license type. Type **LEX** for eSF version 4 or later licenses, or **FPN** for eSF version 3 or earlier licenses. For more information, contact your Lexmark representative.

***DeviceListPath*** is the location of the .csv file that contains the list of IP addresses.

***UserName*** is the user name for accessing secured printers.

***Password*** is the password for accessing secured printers.

***PIN*** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

***RealmName*** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

***RealmSetupName*** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 3 Check the progress of the deployment in the DDU status window.

**Note:** You cannot create a workflow with a mix of LEX- and FNP-type printers.

## Deploying firmware

Before deploying to secured printers, make sure that the printer Firmware Updates access control is enabled. For more information, see [“Enabling firmware updates access control” on page 34](#).

DDU can deploy only fullnet firmware files in .fls format. Fullnet firmware does not include the Engine code and the Scanner code. For more information, contact your Lexmark representative.

**Note:** To deploy raw firmware flash files, engine codes, scanner codes, or applications using the command line, see [“Deploying raw flash files” on page 49](#).

- 1 Obtain a firmware file.
- 2 At the command prompt, type one or more of the following:

**Note:** To deploy the settings file to multiple printers, replace **-ip IP** with **-csv DeviceListPath**.

- For unsecured printers  
`DDUAppFolder\bin\ddu -deploy -ip IP -fls FwrFilePath -fwfls`
- For secured printers
  - Basic authentication method using user name, password, or PIN  
`DDUAppFolder\bin\ddu -deploy -ip IP -fls FwrFilePath -fwfls -usr UserName -pwd Password -pin PIN`
  - Kerberos authentication method  
`DDUAppFolder\bin\ddu -deploy -ip IP -fls FwrFilePath -fwfls -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS`
  - LDAP authentication method  
`DDUAppFolder\bin\ddu -deploy -ip IP -fls FwrFilePath -fwfls -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName`
  - LDAP + GSSAPI authentication method  
`DDUAppFolder\bin\ddu -deploy -ip IP -fls FwrFilePath -fwfls -usr UserName -pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName`

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address of the printer.

**FwrFilePath** is the location of the firmware file.

**DeviceListPath** is the location of the .csv file that contains the list of IP addresses.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 3 Check the progress of the deployment in the DDU status window.

**Note:** To enable force deployment, add **-f** at the end of the command. Force deployment lets you deploy a firmware file without checking the firmware version of the printer.



## Deploying raw flash files

## Deploying raw flash files

Before deploying to secured printers, make sure that the printer Firmware Updates access control is enabled. For more information, see [“Enabling firmware updates access control” on page 34](#).

Use this feature only when packages are not available, or when deploying engine codes, scanner codes, or applications. Deploying a raw firmware flash file may take some time to finish. Make sure that the firmware deployment settings are configured accordingly.

- 1 Obtain an application, firmware, or engine flash file.
- 2 At the command prompt, type one or more of the following:

**Notes:**

- To deploy the settings file to multiple printers, replace **-ip IP** with **-csv DeviceListPath**.
- DDU does not validate other raw flash files.

**Warning—Potential Damage:** Deploying these flash files may damage the printer.

- For unsecured printers
  - Deploying an application flash file
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls AppFilePath -appfls
```
  - Deploying an engine code, scanner code, or other raw flash file
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls OtherFilePath
```
- For secured printers
  - Basic authentication method using user name, password, or PIN
    - Deploying an application flash file
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls AppFilePath -appfls -usr  
UserName -pwd Password -pin PIN
```
    - Deploying an engine code, scanner code, or other raw flash file
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls OtherFilePath -usr UserName  
-pwd Password -pin PIN
```
  - Kerberos authentication method
    - Deploying an application flash file
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls AppFilePath -appfls -usr  
UserName -pwd Password -rlm RealmName -rlmType KERBEROS
```
    - Deploying an engine code, scanner code, or other raw flash file
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls OtherFilePath -usr UserName  
-pwd Password -rlm RealmName -rlmType KERBEROS
```
  - LDAP authentication method
    - Deploying an application flash file
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls AppFilePath -appfls -usr  
UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```
    - Deploying an engine code, scanner code, or other raw flash file
 

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls OtherFilePath -usr UserName  
-pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```

– LDAP + GSSAPI authentication method

- Deploying an application flash file

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls AppFilePath -appfls -usr  
UserName -pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup  
RealmSetupName
```

- Deploying an engine code, scanner code, or other raw flash file

```
DDUAppFolder\bin\ddu -deploy -ip IP -fls OtherFilePath -usr UserName  
-pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup  
RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address of the printer.

**AppFilePath** is the location of the application flash file (.fls).

**OtherFilePath** is the location of the raw flash file (.fls).

**DeviceListPath** is the location of the .csv file that contains the list of IP addresses.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

### 3 Check the progress of the deployment in the DDU status window.

Deploying tasks

## Deploying tasks

DDU can deploy tasks that start, stop, or uninstall an application.

### 1 At the command prompt, type one or more of the following:

- For unsecured printers

```
DDUAppFolder\bin\ddu -deploy -ip IP -app AppID -action Action -appVer  
AppVersion
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -deploy -ip IP -app AppID -action Action -appVer  
AppVersion -usr UserName -pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -deploy -ip IP -app AppID -action Action -appVer  
AppVersion -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method  
***DDUAppFolder\bin\ddu -deploy -ip IP -app AppID -action Action -appVer AppVersion -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName***
- LDAP + GSSAPI authentication method  
***DDUAppFolder\bin\ddu -deploy -ip IP -app AppID -action Action -appVer AppVersion -usr UserName -pwd Password -rlm RealmName -rlmType LDAP\_GSSAPI -rlmSetup RealmSetupName***

where:

***DDUAppFolder*** is the location of the DDU folder.

***IP*** is the IP address of the printer.

***AppID*** is the ID of the application you want to do the task with. For more information on obtaining the application ID, contact your solution provider.

***Action*** is the action you want to do. Type **start**, **stop**, or **uninstall**.

***AppVersion*** is the version of the application. For more information on obtaining the version number, contact your solution provider.

***DeviceListPath*** is the location of the .csv file that contains the list of IP addresses.

***UserName*** is the user name for accessing secured printers.

***Password*** is the password for accessing secured printers.

***PIN*** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

***RealmName*** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

***RealmSetupName*** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

## 2 Check the progress of the deployment in the DDU status window.

Restarting printers

## Restarting printers

### 1 At the command prompt, type one or more of the following:

- For unsecured printers

***DDUAppFolder\bin\ddu -reboot -ip IP***

- For secured printers

- Basic authentication method using user name, password, or PIN

***DDUAppFolder\bin\ddu -reboot -ip IP -usr UserName -pwd Password -pin PIN***

- Kerberos authentication method

***DDUAppFolder\bin\ddu -reboot -ip IP -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS***

- LDAP authentication method

***DDUAppFolder\bin\ddu -reboot -ip IP -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName***

- LDAP + GSSAPI authentication method

***DDUAppFolder\bin\ddu -reboot -ip IP -usr UserName -pwd Password -rlm RealmName -rlmType LDAP\_GSSAPI -rlmSetup RealmSetupName***

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the printer. To restart multiple printers, type the IP addresses or host names of the printers separated by commas.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 2 Check the progress of the deployment in the DDU status window.

Removing held print jobs

## Removing held print jobs

- 1 At the command prompt, type one or more of the following:

- For unsecured printers

```
DDUAppFolder\bin\ddu -rhj -ip IP
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -rhj -ip IP -usr UserName -pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -rhj -ip IP -usr UserName -pwd Password -rlm RealmName  
-rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -rhj -ip IP -usr UserName -pwd Password -rlmType LDAP  
-rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -rhj -ip IP -usr UserName -pwd Password -rlm RealmName  
-rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the printer. To restart multiple printers, type the IP addresses or host names of the printers separated by commas.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 2 Check the progress of the deployment in the DDU status window.

Increasing the interval between tasks

## Increasing the interval between tasks

- 1 At the command prompt, type ***DDUAppFolder\bin\ddu -ip IP -delay Time***

where:

***DDUAppFolder*** is the location of the DDU folder.

***IP*** is the IP address or host name of the device.

***Time*** is the interval between tasks in milliseconds.

- 2 Check the progress of the deployment in the DDU status window.

Updating device certificates

## Updating device certificates

- 1 At the command prompt, type one or more of the following:

- For unsecured printers

***DDUAppFolder\bin\ddu -deploy -ip IP -caSign***

- For secured printers

- Basic authentication method using user name, password, or PIN

***DDUAppFolder\bin\ddu -deploy -ip IP -caSign -usr UserName -pwd Password -pin PIN***

- Kerberos authentication method

***DDUAppFolder\bin\ddu -deploy -ip IP -caSign -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS***

- LDAP authentication method

***DDUAppFolder\bin\ddu -deploy -ip IP -caSign -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName***

- LDAP + GSSAPI authentication method

***DDUAppFolder\bin\ddu -deploy -ip IP -caSign -usr UserName -pwd Password -rlm RealmName -rlmType LDAP\_GSSAPI -rlmSetup RealmSetupName***

where:

***DDUAppFolder*** is the location of the DDU folder.

***IP*** is the IP address or host name of the printer. To restart multiple printers, use commas to separate multiple IP addresses or host names.

***UserName*** is the user name for accessing secured printers.

***Password*** is the password for accessing secured printers.

***PIN*** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

***RealmName*** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

***RealmSetupName*** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

- 2 Check the progress of the deployment in the DDU status window.

## Deleting device certificates

## Deleting device certificates

**1** At the command prompt, type one or more of the following:

- For unsecured printers

```
DDUAppFolder\bin\ddu -deleteDeviceCert -ip IP
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -deleteDeviceCert -ip IP -usr UserName -pwd Password  
-pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -deleteDeviceCert -ip IP -usr UserName -pwd Password  
-rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -deleteDeviceCert -ip IP -usr UserName -pwd Password  
-rlmType LDAP -rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -deleteDeviceCert -ip IP -usr UserName -pwd Password  
-rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the printer. To restart multiple printers, use commas to separate multiple IP addresses or host names.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

**2** Check the progress of the deployment in the DDU status window.

**Note:** The printer reboots after you delete the device certificate.

## Exporting device certificates

## Exporting device certificates

1 At the command prompt, type one or more of the following:

- For unsecured printers

```
DDUAppFolder\bin\ddu -exportCA -ip IP -out SavePath
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -exportCA -ip IP -out SavePath -usr UserName -pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -exportCA -ip IP -out SavePath -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -exportCA -ip IP -out SavePath -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -exportCA -ip IP -out SavePath -usr UserName -pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the printer. To restart multiple printers, use commas to separate multiple IP addresses or host names.

**SavePath** is the location of the stored certificate files.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

2 Check the progress of the deployment in the DDU status window.

Exporting all device settings

## Exporting all device settings

1 At the command prompt, type one or more of the following:

- For unsecured printers

```
DDUAppFolder\bin\ddu -exportSettings -ip IP -out SavePath
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -exportSettings -ip IP -out SavePath -usr UserName  
-pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -exportSettings -ip IP -out SavePath -usr UserName  
-pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -exportSettings -ip IP -out SavePath -usr UserName  
-pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -exportSettings -ip IP -out SavePath -usr UserName  
-pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the printer. To restart multiple printers, use commas to separate multiple IP addresses or host names.

**SavePath** is the location of the stored certificate files.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

2 Check the progress of the deployment in the DDU status window.

Exporting device shortcuts



## Exporting device shortcuts

1 At the command prompt, type one or more of the following:

- For unsecured printers

```
DDUAppFolder\bin\ddu -exportShortcuts -ip IP -out SavePath
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -exportShortcuts -ip IP -out SavePath -usr UserName  
-pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -exportShortcuts -ip IP -out SavePath -usr UserName  
-pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -exportShortcuts -ip IP -out SavePath -usr UserName  
-pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -exportShortcuts -ip IP -out SavePath -usr UserName  
-pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the printer. To restart multiple printers, use commas to separate multiple IP addresses or host names.

**SavePath** is the location of the stored certificate files.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

2 Check the progress of the deployment in the DDU status window.

Exporting all device reports

## Exporting all device reports

1 At the command prompt, type one or more of the following:

- For unsecured printers

```
DDUAppFolder\bin\ddu -exportReports -ip IP -out SavePath
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -exportReports -ip IP -out SavePath -usr UserName  
-pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -exportReports -ip IP -out SavePath -usr UserName  
-pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -exportReports -ip IP -out SavePath -usr UserName  
-pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -exportReports -ip IP -out SavePath -usr UserName  
-pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the printer. To restart multiple printers, use commas to separate multiple IP addresses or host names.

**SavePath** is the location of the stored certificate files.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

2 Check the progress of the deployment in the DDU status window.

Exporting device logs

## Exporting device logs

1 At the command prompt, type one or more of the following:

- For unsecured printers

```
DDUAppFolder\bin\ddu -exportLogs -ip IP -out SavePath
```

- For secured printers

- Basic authentication method using user name, password, or PIN

```
DDUAppFolder\bin\ddu -exportLogs -ip IP -out SavePath -usr UserName -pwd Password -pin PIN
```

- Kerberos authentication method

```
DDUAppFolder\bin\ddu -exportLogs -ip IP -out SavePath -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS
```

- LDAP authentication method

```
DDUAppFolder\bin\ddu -exportLogs -ip IP -out SavePath -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName
```

- LDAP + GSSAPI authentication method

```
DDUAppFolder\bin\ddu -exportLogs -ip IP -out SavePath -usr UserName -pwd Password -rlm RealmName -rlmType LDAP_GSSAPI -rlmSetup RealmSetupName
```

where:

**DDUAppFolder** is the location of the DDU folder.

**IP** is the IP address or host name of the printer. To restart multiple printers, use commas to separate multiple IP addresses or host names.

**SavePath** is the location of the stored certificate files.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

2 Check the progress of the deployment in the DDU status window.

Deploying workflows

## Deploying workflows

1 Store the workflow file that was created or saved by using the DDU graphical user interface to your local drive.

2 At the command prompt, type one or more of the following:

**Note:** To add external printers to a workflow, add **-ip IP** to add a single printer, or **-csv DeviceListPath** to add multiple printers before **-workflow FilePath**. External printers override the printers added in the workflow. If you add external printers, then the workflow is deployed to these printers.

- For unsecured printers  
**DDUAppFolder\bin\ddu -deploy -workflow FilePath**
- For secured printers
  - Basic authentication method using user name, password, or PIN  
**DDUAppFolder\bin\ddu -deploy -workflow FilePath -usr UserName -pwd Password -pin PIN**
  - Kerberos authentication method  
**DDUAppFolder\bin\ddu -deploy -workflow FilePath -usr UserName -pwd Password -rlm RealmName -rlmType KERBEROS**
  - LDAP authentication method  
**DDUAppFolder\bin\ddu -deploy -workflow FilePath -usr UserName -pwd Password -rlmType LDAP -rlmSetup RealmSetupName**
  - LDAP + GSSAPI authentication method  
**DDUAppFolder\bin\ddu -deploy -workflow FilePath -usr UserName -pwd Password -rlm RealmName -rlmType LDAP\_GSSAPI -rlmSetup RealmSetupName**

where:

**DDUAppFolder** is the location of the DDU folder.

**FilePath** is the location of the workflow file.

**IP** is the IP address of the printer.

**DeviceListPath** is the location of the .csv file that contains the list of IP addresses.

**UserName** is the user name for accessing secured printers.

**Password** is the password for accessing secured printers.

**PIN** is the PIN for accessing secured printers. This option is applicable only to the basic authentication method.

**RealmName** is the Kerberos realm name when using Kerberos or LDAP + GSSAPI authentication method.

**RealmSetupName** is the setup name configured on the printer when using LDAP or LDAP + GSSAPI authentication method.

### 3 Check the progress of the deployment in the DDU status window.

**Note:** In a workflow, tasks with Disable Task checkbox selected, are skipped during the execution of workflow.

## Configuring the utility

Configure DDU using a configuration file or from the advanced settings menu.

Configuring deployment and discovery settings using the app-config file

### Configuring deployment and discovery settings using the app-config file

Use the app-config.xml file to update default deployment and discovery settings. The configuration file controls the default deployment settings for a new workflow, and the discovery settings for creating .csv files.


**Note:** Use a text editor that supports UTF-8.

- 1 Using a text editor, open the **app-config.xml** file.

**Note:** You can find the configuration file at **DDUAppFolder\config**, where **DDUAppFolder** is the location of the DDU folder.

- 2 Configure the settings. For more information on the supported settings, see [“Understanding advanced settings” on page 61](#).
- 3 Save the file.

### Configuring deployment and discovery settings using DDU

- 1 From DDU, add or edit a deployment workflow.
- 2 Click .
- 3 Configure the settings. For more information, see [“Understanding advanced settings” on page 61](#).
- 4 Click **Save**.

**Notes:**

- Make sure that the updated settings are saved before closing the Advanced Settings dialog.
- To restore the settings to the previously saved values, click **Reset**.

## Understanding advanced settings

### Certificate Authority (CA) certificate setting and its description

Setting	Configuration file element	Description
Delete All CA Certificate Before Deployment	deleteAllCaCertificateBeforeDeployment	Delete CA certificates before deployment.

### Device discovery settings and their descriptions

Setting	Configuration file element	Description
<b>Retry Interval (Milliseconds)</b>	<b>retryInterval</b>	Specify how long DDU waits before polling a device again after it fails to discover it.
<b>Retry Count</b>	<b>retryCount</b>	Specify how many times DDU tries to poll a device after it fails to discover it.
<b>Include Secured Printer</b>	<b>includeSecurePrinter</b>	Select to discover secured devices.
<b>Exclude Addresses</b>	<b>excludeAddresses</b>	Type the IP addresses or host names that are excluded when discovering devices. Use the following formats to exclude IP addresses: <ul style="list-style-type: none"> <li>• <b>10.195.*.*</b> (wildcards for only the last two octets)</li> <li>• <b>10.195.y.yy</b> (single IP address)</li> <li>• <b>printerHostname.lexmark.com</b> (host name)</li> </ul>
<b>Merge Output</b>	<b>mergeOutput</b>	Merge the devices found after every discovery to the same device deployment and package creation input files.
<b>Ddu's Input File Name</b>	<b>dduInputFileName</b>	Type the file name for DDU. The file generated can be used as an input CSV file for DDU.
<b>Package Builder's Input File Name</b>	<b>packageBuilderInputFileName</b>	Type the file name for the Package Builder application. The file generated can be used as an input CSV file for the Package Builder application.
<b>SNMP Version</b>	<b>snmp</b>	Select the SNMP version that your network uses.
<b>Community Name</b>	<b>communityName</b>	Specify the SNMP community string value for SNMP versions 1 and 2c. <b>Note:</b> The default value is <b>public</b> .
<b>Username</b>	<b>user</b>	Type the user name used to connect to your SNMP version 3 server.
<b>Password</b>	<b>password</b>	Type the password for the user name.
<b>Minimum Authentication Level</b>	<b>minimumAuthenticationLevel</b>	Select the minimum authentication level that is used to connect to your SNMP version 3 server.
<b>Authentication Hash</b>	<b>authenticationHash</b>	Select the hash algorithm that is used to connect to your SNMP version 3 server.
<b>Privacy Algorithm</b>	<b>privacyAlgorithm</b>	Select the encryption method used to connect to your SNMP version 3 server.

### Workflow logs settings and their descriptions

Setting	Configuration file element	Description
Clear Logs Interval (Days)	<code>clearLogsBefore</code>	Specify the number of days before logs that are older than the specified value are removed.  <b>Notes:</b> <ul style="list-style-type: none"> <li>The default value is <b>15</b> days.</li> <li>This task occurs during the deployment of a workflow.</li> </ul>
Automatically Export Deployment Log	<code>saveErrorLogs</code>	If set to <b>true</b> , then logs are automatically exported after the deployment of a workflow. If set to <b>false</b> , then the status panel shows an option to export the deployment log.  <b>Note:</b> The default value is <b>true</b> .

### Firmware and Reboot settings and their descriptions

Setting	Configuration file element	Description
Wait For First Polling (Milliseconds)	<code>waitForFirstPolling</code>	Specify how long DDU waits before polling the device if it has restarted either after updating the firmware or after it restarts the device.
Polling End Timeout (Milliseconds)	<code>pollingEndTimeout</code>	Specify how long before DDU stops polling the device that has restarted either after updating the firmware or after it restarts the device.
Polling Interval (Milliseconds)	<code>pollingInterval</code>	Specify how long DDU waits before polling the device again after it fails to discover it.

### Package license setting and its description

Setting	Configuration file element	Description
Update Production License	<code>updateProductionLicense</code>	Update the license of an application.

### Thread pool setting and its description

Setting	Configuration file element	Description
Thread Pool Size	<code>maxThreadCount</code>	Specify the maximum threads in a thread pool that the application can use.

### Deployment logger setting and its description

Setting	Configuration file element	Description
Log Level	<b>preferredLogLevel</b>	<p>Specify the level of detail of the application logs in the <b>deployment.csv</b> file.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"><li>• The Apache Log4j software provides the different levels of logs. For more information, see the documentation for Log4j.</li><li>• The default value is <b>Info</b>.</li></ul>

### Large deployable settings and their descriptions

Setting	Configuration file element	Description
<b>Web Service Read Timeout (Milliseconds)</b>	<b>readTimeout</b>	Specify the number of milliseconds to wait for data after establishing the connection during deployment.
<b>Request Timeout (Milliseconds)</b>	<b>requestTimeout</b>	Specify the number of milliseconds to wait for a connection from the connection manager or pool during deployment.
<b>Connection Timeout (Milliseconds)</b>	<b>connectionTimeout</b>	Specify the number of milliseconds to wait for a connection to be established during deployment.

### Configuring log settings

## Configuring log settings

DDU uses the Apache Log4j software API. For more information on the Log4j API, go to the Apache website.

The Log4j configuration settings can be found in **DDUAppFolder\config\log4j-config.xml**, where **DDUAppFolder** is the location of the DDU folder.

The configuration settings file uses standard Log4j elements. The following elements are useful for users when configuring logging settings:



Configuration file element	Description
<b>file value</b>	Type the file name and location of the log file. If you type only the file name, then the default location is the folder for the DDU executable files.
<b>level value</b>	Type the logging level. The logging level can be one of the following: <ul style="list-style-type: none"><li>• <b>ALL</b></li><li>• <b>DEBUG</b></li><li>• <b>INFO</b></li><li>• <b>WARN</b></li><li>• <b>ERROR</b></li><li>• <b>FATAL</b></li></ul>

**Note:** For more information on the Log4j API, go to the Apache website.

# Troubleshooting

## A firewall prompt appears when launching DDU

### Allow access to the application

Cannot launch DDU

## Cannot launch DDU

Try one or more of the following:

### Make sure that the Java security is set to High

From the Java control panel, navigate to the Security tab, and then set it to **High**. For more information, contact your system administrator.

### Make sure that the Java "Mixed code security verification" setting is disabled

From the Java control panel, navigate to the Advanced tab, and then disable **Mixed code security verification**. For more information, contact your system administrator.

### Make sure that the directory path of DDU is not nested and is fewer than 120 characters

Windows command prompt is limited only to 120 characters. For more information, see the command prompt help file.

### Disable Java access bridge for DDU

- 1 Using a text editor, open the **ddu.bat** file.

**Note:** You can find the .bat file at **DDUAppFolder\bin**, where **DDUAppFolder** is the location of the DDU folder.

- 2 Navigate to the call entry, `%JAVA_EXE% %DEFAULT_JVM_OPTS% %JAVA_OPTS% %DDU_OPTS% -classpath "%CLASSPATH%" com.lexmark.ddu.application.Main %CMD_LINE_ARGS%`, and then replace this entry with the following:

```
%JAVA_EXE% %DEFAULT_JVM_OPTS% %JAVA_OPTS% %DDU_OPTS% -  
Djavax.accessibility.assistive_technologies -  
Djavax.accessibility.screen_magnifier_present=false -classpath  
"%CLASSPATH%" com.lexmark.ddu.ui.application.workflow.ConfigurationWindow
```

- 3 Save the file.
- 4 Run DDU again.

## Contact customer support

In the U.S. or Canada, call 1-800-539-6275. For other countries or regions, go to [support.lexmark.com](https://support.lexmark.com).


Cannot deploy solutions

# Cannot deploy solutions

Try one or more of the following:

## Make sure that the device has enough disk space or RAM to deploy more solutions

## Increase the value of Discover Retry Count and Retry Interval settings

- 1 From DDU, add or edit a workflow.
- 2 Click .
- 3 From the Discover section, increase the values of **Retry Count** and **Retry Interval (Milliseconds)**.
- 4 Click **Save**.

## Check the deployment logs

- 1 From the DDU folder, open the deployment log files.
- 2 Check for solutions that are not deployed successfully.

## Check the device logs

- 1 Open a web browser, and then type the printer IP address.  
**Note:** Locate the IP address on the printer home screen.
- 2 Click **Settings** or **Configuration**.
- 3 Depending on your printer model, do one of the following:
  - Click **Apps > Apps Management**.
  - Click **Device Solutions > Solutions (eSF)**.
  - Click **Embedded Solutions**.
- 4 Click **System > Log**.
- 5 Select and submit the appropriate filters to view the log entries.
- 6 Analyze the log, and then resolve the problem.

## Contact customer support

In the U.S. or Canada, call 1-800-539-6275. For other countries or regions, go to [support.lexmark.com](https://support.lexmark.com).

Cannot deploy to a device with MPS Elite settings

## Cannot deploy to a device with MPS Elite settings

Try one or more of the following:

**Make sure that the device has not been deployed with any MPS Elite settings**

**Make sure that the model name does not contain MPSElite**

**1** Open a web browser, and then type the printer IP address.

**Note:** Locate the IP address on the printer home screen.

**2** From the Embedded Web Server, check the model name.

**Contact customer support**

In the U.S. or Canada, call 1-800-539-6275. For other countries or regions, go to [support.lexmark.com](https://support.lexmark.com).

Cannot discover devices

## Cannot discover devices

Try one or more of the following:

**If you are discovering a device using a host name, then make sure to map the devices with proper host names in the DNS servers**

If the printer cannot communicate with the host name, then contact your DNS administrator.

**If devices are not registered with DNS, then map the IP addresses to the appropriate host names in the host file**

You can find the host file at **C:\WINDOWS\System32\drivers\etc**.

**Contact customer support**

In the U.S. or Canada, call 1-800-539-6275. For other countries or regions, go to [support.lexmark.com](https://support.lexmark.com).

Cannot discover devices using SNMPv3

## Cannot discover devices using SNMPv3

Try one or more of the following:

### **Make sure that the user name and password are provided for all authentication levels**

- 1** From DDU, navigate to the Discover Device section, and then click **Advanced Settings**.
- 2** From the SNMPv3 section, type the user name and password.
- 3** Click **Save**.

### **Make sure that the user name and password match the credentials set on the device**

### **Contact customer support**

In the U.S. or Canada, call 1-800-539-6275. For other countries or regions, go to [support.lexmark.com](https://support.lexmark.com).

Cannot deploy license for eSF application packages

## Cannot deploy license for eSF application packages

Try one or more of the following:

### **Make sure that the package does not contain eSF applications with the same IDs**

If the package contains eSF applications with the same IDs and one of the applications has a license, then DDU may stop running.

### **Contact your Lexmark representative**

Cannot see the application in the DDU application list

## Cannot see the application in the DDU application list

Try one or more of the following:

### **Add the application in the app-id-version.txt file**

- 1** Obtain the application ID and version number of the application.
  - a** Using a binary editor, open the application .fls file.
  - b** Locate the APPNAMES section. This section contains the application ID and version number of the application.  
**APPNAMES="ecoPrint:5.0.18"**
  - c** Copy the application ID and version number.

- 2 Using a text editor, open the **app-id-version.txt** file.

**Note:** The file can be found in **DDUAppFolder\Config\**, where **DDUAppFolder** is the location of the DDU folder.

- 3 Type **AppID=:ver1,ver2,ver3**, where **AppID** is the application ID, and **ver1,ver2,ver3** are application versions separated by a comma. For example, using the application ID and version number from step 1, add the following in the app-id-version.txt file:

**ecoPrint=:5.0.18**

To show a friendly name for the application in the menu, type **AppID=AppName:ver1,ver2,ver3**, where **AppName** is the friendly name.

**ecoPrint=Eco-Print:5.0.18**

- 4 Save the file.

### Contact customer support

In the U.S. or Canada, call 1-800-539-6275. For other countries or regions, go to [support.lexmark.com](https://support.lexmark.com).

Incorrect eSF application is deployed

## Incorrect eSF application is deployed

Try one or more of the following:

### Make sure that the package does not contain eSF applications with the same IDs

If your package contains eSF applications with the same IDs, then DDU deploys any one of them.

### Contact customer support

In the U.S. or Canada, call 1-800-539-6275. For other countries or regions, go to [support.lexmark.com](https://support.lexmark.com).

DDU stops when launching from a CD or DVD

## DDU stops when launching from a CD or DVD

Try one or more of the following:

### Make sure that the CD or DVD is not ejected while DDU is running

### Contact your administrator

Settings for eSF applications are not updated after deployment

## Settings for eSF applications are not updated after deployment

Try one or more of the following:

### **Make sure that the eSF applications are running when deploying the settings file**

From the Embedded Web Server, start the application, and then from DDU, deploy the configuration again.

### **Contact customer support**

In the U.S. or Canada, call 1-800-539-6275. For other countries or regions, go to [support.lexmark.com](https://support.lexmark.com).

Some advanced settings for the workflow are not working

## Some advanced settings for the workflow are not working

### **Ignore these settings**

Settings that are not available in the latest version of DDU can be seen when deploying workflows created using the older version of DDU. You can see and configure these settings, but DDU does not use these settings.

Export Device Data operation fails

## Export Device Data operation fails

### **Check the firmware level of the device**

Update the firmware of the device to the latest version.

Timeout error during downloading or exporting of device data

## Timeout error during downloading or exporting of device data

### **Increase the default timeout configuration for Workflow**

Increase the default timeout configuration in the advanced settings. This configuration only works for web service communication.

**Increase the default timeout configuration for Export of Device Data**

Increase the default timeout configuration in the app-config.xml and relaunch DDU. This configuration only works for web service communication.

## **Cannot deploy more than one PKCS task in quick succession**

**Add a delay between each PKCS deployment task**

Introduce a delay task of more than five seconds before deploying the next .pfx files.

**Note:** This error occurs only in printers running on eSF version 4 or earlier.



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March 2025

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