



Lexmark™

Universal Print Driver

Technical White Paper Revision 3a for HBP

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Change history

Change history

Lexmark Universal Print Driver (UPD) version 3.0.1

- Added information on fixes done in UPD.

Note: For more information, see [“What are the fixes done in UPD?” on page 27](#).

Lexmark Universal Print Driver (UPD) version 3.0

- Added support for print encryption.
- Added support for dynamic driver configuration directly from the printer by using bidirectional communication.
- Added support for the following certifications:
 - Citrix® Virtual Apps and Desktops 7 2103
 - Citrix Virtual Apps and Desktops 7 2012
 - Citrix Virtual Apps and Desktops 7 2009
 - Citrix Virtual Apps and Desktops 7 2006
 - Citrix Virtual Apps and Desktops 7 2003
 - Citrix Virtual Apps and Desktops 7 1912 LTSR
 - Citrix Virtual Apps and Desktops 7 1909

Note: For a list of supported Citrix implementations, see [“Supported operating systems” on page 8](#).

- Added support for the following operating systems:
 - Microsoft Windows Server 2022
 - Windows 11

Note: For a list of supported operating systems, see [“Supported operating systems” on page 8](#).

Lexmark Universal Print Driver (UPD) version 2.15.2

- Enhanced security to prevent attacker-controlled codes that are running with system privileges.

Lexmark Universal Print Driver (UPD) version 2.15.1

- Added support for the following printer models:

Color laser multifunction products

- CX330 Series (CX331adwe)
- CX430 Series (CX431adw)
- MC3200 Series (MC3224adwe, MC3224dwe, MC3224i)
- MC3300 Series (MC3326adwe, MC3326i)
- MC3400 Series (MC3426adw, MC3426i)
- XC2300 Series (XC2326)

Color laser printers

- C2300 Series (C2326)
- C3200 Series (C3224dw)
- C3300 Series (C3326dw)
- C3400 Series (C3426dw)
- CS330 Series (CS331dw)
- CS430 Series (CS431dw)

Monochrome laser multifunction products

- MB2200 Series (MB2236adw, MB2236adwe, MB2236i)
- MB3400 Series (MB3442adw, MB3442i)
- MX330 Series (MX331adn)
- MX430 Series (MX431adn, MX431adw)
- XM1300 Series (XM1342)

Monochrome laser printers

- B2200 Series (B2236dw)
- B3300 Series (B3340dw)
- B3400 Series (B3442dw)
- M1300 Series (M1342)
- MS330 Series (MS331dn)
- MS430 Series (MS431dn, MS431dw)
- Added support for the following certifications:
 - Citrix Virtual Apps and Desktops 7 1906
 - Citrix Virtual Apps and Desktops 7 1903
 - Citrix Virtual Apps and Desktops 7 1811

Note: For a list of supported Citrix implementations, see [“Supported operating systems” on page 8](#).

- Added support for Microsoft Windows Server 2019 (64-bit) operating system as a cluster server.

Note: For a list of supported operating systems, see [“Supported operating systems” on page 8](#).

- Added support for all paper types as the paper source in the device capabilities.

Overview

The Lexmark™ UPD provides a standardized one-driver solution for your printing needs. It supports both color and monochrome printers.

This document provides instructions on how to install and use the UPD.

Note: For more information on the print driver version numbering format, see [“What is the UPD version numbering format?” on page 27](#).

Understanding the benefits

Versatility

The UPD is available in more than 27 languages, supporting printer models that are connected locally or over a network.

All packages are Microsoft certified and digitally signed, and have been tested in the following:

- Cluster server environment
- Microsoft Terminal Server
- Citrix Presentation Server™ environment

Bidirectional communication support

Installed settings are automatically detected and updated at installation time and at user request. This feature allows the print driver to use minimal network traffic.

Reduced cost for system support

With the UPD, only one package is used to manage testing and internal certification of print drivers. Time spent on server and workstation installation is reduced, and hard disk space usage is minimized.

Increased user efficiency

The UPD uses the same graphical user interface as product-specific drivers, enabling all print queues to have the same interface. Users can also create and save profiles for frequently used settings or use profiles created by a system administrator.

Corporate sustainability initiatives

To promote the environmental policies of an organization, the UPD lets administrators configure the following print queue settings:

- Two-sided printing
- Multiple-page printing (N-up)
- Toner darkness
- Other resource-saving measures

Supported Citrix Ready certifications

The UPD has participated in the Citrix Ready® Program as a Certified Product. Tests are conducted using the following:

Microsoft Windows Server 2016 x64 operating system

- Citrix Virtual Apps and Desktops 7 2103
- Citrix Virtual Apps and Desktops 7 2012
- Citrix Virtual Apps and Desktops 7 2009
- Citrix Virtual Apps and Desktops 7 2006
- Citrix Virtual Apps and Desktops 7 2003
- Citrix Virtual Apps and Desktops 7 1912 LTSR
- Citrix Virtual Apps and Desktops 7 1909
- Citrix Virtual Apps and Desktops 7 1906
- Citrix Virtual Apps and Desktops 7 1903
- Citrix Virtual Apps and Desktops 7 1811
- Citrix Virtual Apps and Desktops 1808
- Citrix XenApp® 7.18
- Citrix XenApp 7.17
- Citrix XenApp 7.16
- Citrix XenApp 7.15
- Citrix XenApp 7.14
- Citrix XenApp 7.13
- Citrix XenApp 7.12
- Citrix XenApp 7.11
- Citrix XenApp 7.9
- Citrix XenApp 7.8
- Citrix XenApp 7.7
- Citrix XenApp 7.6
- Citrix XenApp 7.5
- Citrix XenApp 6.5
- Citrix XenDesktop® 7.18
- Citrix XenDesktop 7.17
- Citrix XenDesktop 7.16
- Citrix XenDesktop 7.15
- Citrix XenDesktop 7.14
- Citrix XenDesktop 7.13
- Citrix XenDesktop 7.12
- Citrix XenDesktop 7.11
- Citrix XenDesktop 7.9
- Citrix XenDesktop 7.8
- Citrix XenDesktop 7.7

- Citrix XenDesktop 7.6
- Citrix XenDesktop 7.5

Microsoft Windows Server 2012 R2 x64 operating system

- Citrix XenApp 7.8
- Citrix XenApp 7.7
- Citrix XenApp 7.6
- Citrix XenApp 7.5
- Citrix XenDesktop 7.8
- Citrix XenDesktop 7.7
- Citrix XenDesktop 7.6
- Citrix XenDesktop 7.5

Microsoft Windows Server 2012 x64 operating system

- Citrix XenApp 7.8
- Citrix XenApp 7.7
- Citrix XenApp 7.6
- Citrix XenApp 7.5
- Citrix XenDesktop 7.8
- Citrix XenDesktop 7.7
- Citrix XenDesktop 7.6
- Citrix XenDesktop 7.5

Microsoft Windows Server 2008 R2 x64 operating system

- Citrix XenApp 7.8
- Citrix XenApp 7.7
- Citrix XenApp 7.6
- Citrix XenApp 7.5
- Citrix XenApp 6.5

Before you begin

Supported operating systems

Microsoft Windows operating systems

The UPD is available in 32-bit and 64-bit (when applicable) versions of the following:

- Windows 11
- Windows 10 19H2
- Windows 10 Redstone 5
- Windows 8.1
- Windows 7 SP1
- Windows Vista SP2
- Windows Server 2022
- Windows Server 2019
- Windows Server 2016
- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2 SP1
- Windows Server 2008 SP2

Note: Lexmark follows Microsoft Products Support Lifecycle Policy in providing software support for Windows operating systems. For more information on Microsoft Products Support Lifecycle Policy, visit the Microsoft website.

Microsoft Windows Cluster Servers

- Windows Server 2022
- Windows Server 2019 (64-bit)
- Windows Server 2016 (64-bit)
- Windows Server 2012 R2 (64-bit)
- Windows Server 2008 R2
- Windows Server 2008

Citrix implementations

Microsoft Windows Server 2019 operating system

- Citrix Virtual Apps and Desktops 7 2103
- Citrix Virtual Apps and Desktops 7 2012
- Citrix Virtual Apps and Desktops 7 2009
- Citrix Virtual Apps and Desktops 7 2006
- Citrix Virtual Apps and Desktops 7 2003
- Citrix Virtual Apps and Desktops 7 1912 LTSR

- Citrix Virtual Apps and Desktops 7 1909
- Citrix Virtual Apps and Desktops 7 1906
- Citrix Virtual Apps and Desktops 7 1903
- Citrix Virtual Apps and Desktops 7 1811
- Citrix Virtual Apps and Desktops 1808

Microsoft Windows Server 2012 R2 operating system

- Citrix Virtual Apps and Desktops 7 1906
- Citrix Virtual Apps and Desktops 7 1903
- Citrix Virtual Apps and Desktops 7 1811
- Citrix Virtual Apps and Desktops 1808
- Citrix XenApp 7.18
- Citrix XenApp 7.17
- Citrix XenApp 7.16
- Citrix XenApp 7.15
- Citrix XenApp 7.14
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- Citrix XenDesktop 7.11
- Citrix XenDesktop 7.9
- Citrix XenDesktop 7.8
- Citrix XenDesktop 7.7
- Citrix XenDesktop 7.6
- Citrix XenDesktop 7.5

Microsoft Windows Server 2012 operating system

- Citrix Virtual Apps and Desktops 7 1906
- Citrix Virtual Apps and Desktops 7 1903
- Citrix Virtual Apps and Desktops 7 1811

- Citrix Virtual Apps and Desktops 1808
- Citrix XenApp 7.18
- Citrix XenApp 7.17
- Citrix XenApp 7.16
- Citrix XenApp 7.15
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- Citrix XenApp 7.13
- Citrix XenApp 7.12
- Citrix XenApp 7.11
- Citrix XenApp 7.9
- Citrix XenApp 7.8
- Citrix XenApp 7.7
- Citrix XenApp 7.6
- Citrix XenDesktop 7.18
- Citrix XenDesktop 7.17
- Citrix XenDesktop 7.16
- Citrix XenDesktop 7.15
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- Citrix XenDesktop 7.13
- Citrix XenDesktop 7.12
- Citrix XenDesktop 7.11
- Citrix XenDesktop 7.9
- Citrix XenDesktop 7.8
- Citrix XenDesktop 7.7
- Citrix XenDesktop 7.6

Microsoft Windows Server 2008 R2 operating system

- Citrix Virtual Apps and Desktops 7 1906
- Citrix Virtual Apps and Desktops 7 1903
- Citrix Virtual Apps and Desktops 7 1811
- Citrix Virtual Apps and Desktops 1808
- Citrix XenApp 7.18
- Citrix XenApp 7.17
- Citrix XenApp 7.16
- Citrix XenApp 7.15
- Citrix XenApp 7.14
- Citrix XenApp 7.13
- Citrix XenApp 7.12
- Citrix XenApp 7.11
- Citrix XenApp 7.9
- Citrix XenApp 7.8

- Citrix XenApp 7.7
- Citrix XenApp 7.6
- Citrix XenApp 7.5
- Citrix XenApp 6.5
- Citrix XenDesktop 7.18
- Citrix XenDesktop 7.17
- Citrix XenDesktop 7.16
- Citrix XenDesktop 7.15
- Citrix XenDesktop 7.14
- Citrix XenDesktop 7.13
- Citrix XenDesktop 7.12
- Citrix XenDesktop 7.11
- Citrix XenDesktop 7.9
- Citrix XenDesktop 7.8
- Citrix XenDesktop 7.7
- Citrix XenDesktop 7.6
- Citrix XenDesktop 7.5
- Citrix XenApp 6.0

Microsoft Windows Server 2008 R2 operating system

- Citrix XenApp 5.0

Novell operating systems

- Novell NetWare 6.5 Open Enterprise Server
- Novell Open Enterprise Server on SUSE Linux Enterprise Server (32-bit and 64-bit versions):
 - NOES 15 SP1 on SLES 11 SP4
 - NOES 11 SP3 on SLES 12 SP1
 - NOES 11 SP3 on SLES 11 SP4
 - NOES 2 SP3 on SLES 10 SP4

Note: These configurations support only Windows clients for Micro Focus iPrint for Windows 10, Windows 8.1, Windows 7, and Windows Vista operating systems.

Supported printers

Printer model	HBP emulation driver
Color laser multifunction products	
CX330 Series (CX331adwe)	✓
CX430 Series (CX431adw)	✓
MC3200 Series (MC3224adwe, MC3224dwe, MC3224i)	✓

Printer model	HBP emulation driver
MC3300 Series (MC3326adwe, MC3326i)	✓
MC3400 Series (MC3426adw, MC3426i)	✓
XC2300 Series (XC2326)	✓
Mono laser multifunction products	
MB2200 Series (MB2236adw, MB2236adwe, MB2236i)	✓
MB3400 Series (MB3442adw, MB3442i)	✓
MX330 Series (MX331adn)	✓
MX430 Series (MX431adn, MX431adw)	✓
XM1300 Series (XM1342)	✓
Color laser printers	
C2300 Series (C2326)	✓
C3200 Series (C3224dw)	✓
C3300 Series (C3326dw)	✓
C3400 Series (C3426dw)	✓
CS330 Series (CS331dw)	✓
CS430 Series (CS431dw)	✓
Mono laser printers	
B2200 Series (B2236dw)	✓
B3300 Series (B3340dw)	✓
B3400 Series (B3442dw)	✓
M1300 Series (M1342)	✓
MS330 Series (MS331dn)	✓
MS430 Series (MS431dn, MS431dw)	✓

Supported connections

The UPD supports direct printing to the following on all supported operating systems:

- Branch Office Direct Printing
- IP ports
- USB ports
- Web services ports

Bidirectional communication is available with the following:

- Standard IP ports
- Enhanced TCP/IP ports
- USB connections
- Web services ports
- Novell iPrint ports
- Parallel ports
- Travel Print

Supported paper sizes and types

Note: Depending on your printer model and print driver, supported paper sizes and types may vary.

Supported paper sizes

- A4 (210 x 297 mm)
- A5 (148 x 210 mm)
- A6 (105 x 148 mm)
- B5 (182 x 257 mm)
- Envelope (Monarch) 7 3/4 (3.9 x 7.5 inches)
- Envelope 9 (3.9 x 8.9 inches)
- Envelope 10 (4.1 x 9.5 inches)
- Envelope B5 (176 x 250 mm)
- Envelope C5 (162 x 229 mm)
- Envelope DL (110 x 220 mm)
- Executive (7.3 x 10.5 inches)
- Folio (8.5 x 13 inches)
- Hagaki (100 x 148 mm)
- Legal (8.5 x 14 inches)
- Letter (8.5 x 11 inches)
- Oficio (Mexico) (216 x 340 mm)
- Statement (5.5 x 8.5 inches)
- Universal (216 x 360 mm)

Supported paper types

- Bond
- Card stock
- Colored
- Custom type 1
- Custom type 2
- Custom type 3

- Custom type 4
- Custom type 5
- Custom type 6
- ColorLok certified plain
- Envelope
- Glossy
- Heavy
- Labels
- Letterhead
- Light
- Plain
- Preprinted
- Recycled
- Rough/Cotton
- Rough Envelope

Supported languages

- Arabic
- Chinese (simplified)
- Chinese (traditional)
- Croatian
- Czech
- Danish
- Dutch
- English
- Finnish
- French
- German
- Greek
- Hungarian
- Italian
- Japanese
- Korean
- Norwegian
- Polish
- Portuguese (Brazilian)
- Romanian
- Russian
- Serbian
- Slovak

- Slovenian
- Spanish
- Swedish
- Turkish

Installing the Universal Print Driver

Install the UPD using Windows Add Printer Wizard or the Lexmark Universal Print Driver System Administrator Installation package from the Lexmark website.

Updating the Universal Print Driver

The UPD version 2 works with UPD version 1. If the UPD is upgraded to version 2, then switching the print driver from the Advanced tab of the Printer Properties dialog box is not supported. The existing UPD version 1 print queues must be deleted, and then print queues using UPD version 2 must be created.

Installing the Universal Print Driver

- 1 From your computer, go to www.lexmark.com.
- 2 Click **Customer Support > Universal Print Driver**.
- 3 Depending on the operating system of your computer, download the appropriate print driver.

Notes:

- We recommend using the specific driver packages depending on whether you have a color or a monochrome printer. If you have a fleet of both color and monochrome printers, then we recommend installing both print drivers.
- For Windows computers, if you download the emulation-specific UPD, then download the Phone Book and Travel Print applications separately. Both applications install with the administrator package automatically.
- For more information on the full list of packages for Windows computers, see the Universal Print Driver White Paper section.

- 4 Follow the instructions on your computer screen.

Updating installed settings

- 1 From the Printer Properties dialog box, click the **Configuration** tab.
- 2 Click **Update Now-Ask Printer > OK**.

The print driver updates the status of all printer settings. If bidirectional communication is not active or is unavailable for the printer, then the print driver shows an error.

Understanding the Package Creation Utility

The Package Creation Utility lets you create customized installer packages that you can launch without user input, and integrate in your deployment solution. It generates print driver installation packages that automate the installation of print drivers with preconfigured settings.

Understanding Travel Print

This feature lets you search and select a network printer when sending a print job or a fax job from the host computer. It also lets you use multiple printers frequently without installing different print queues to support printers at multiple locations.

When Travel Print is used, a printer selection dialog box appears during the following:

- Sending a print job to the print driver
- Accessing the "Printing preferences" dialog box from a Windows program
- Accessing either the "Printing preferences" or the Printer Properties dialog boxes from the print driver

From the printer selection dialog box, in the Favorites tab, you can designate up to 10 frequently used printers. You can also search for printers using the printer host name or IP address, or by searching a subnet.

The printer search results show the following printer information:

- Model name
- Status
- IP address
- Color
- Two-sided printing capabilities

You can also use Travel Print to access the printer Embedded Web Server, allowing access to more printer information and configuration settings.

Notes:

- You need administrator rights to install and enable Travel Print. To install, run the Travel Print installation package or the UPD system administrator installation package. To obtain a copy of the installation packages, visit the Lexmark website.
- Travel Print is not intended for server-based printing. The print driver and Travel Print must be installed locally on host computers.
- If you want Travel Print to update the printer model and configuration settings, then enable the **Update Configuration from Printer** feature.

Enabling Travel Print

Travel Print is enabled by associating the print driver with the Travel Print port.

Note: The Travel Print port is available only if Travel Print is installed. To install, run the Travel Print installation package or the UPD system administrator installation package. To obtain a copy of the installation packages, visit the Lexmark website.

- 1 From the Printer Properties dialog box, click the **Ports** tab.
- 2 Select **Travel Print port**.

Note: To disable Travel Print, change the print driver port to any other printer port.

Understanding the Universal Print Driver

To see the UPD settings, from your computer, right-click a printer, and then select **Printing preferences**.

Understanding the Layout tab

The Layout tab determines the organizational attributes of a print job.

Note: Some settings are available only in some printer models and in some print drivers.

Setting	Description
Copies	<p>The following settings determine the number of copies to be printed and how the copies are organized:</p> <ul style="list-style-type: none"> • Number of Copies • Collate—The order in which pages are printed when printing multiple copies of a print job. For example, if you are printing two copies of a five-page print job, then the collated output is 1, 2, 3, 4, 5, 1, 2, 3, 4, 5. The non-collated output is 1, 1, 2, 2, 3, 3, 4, 4, 5, 5. <p>If the installed printer memory is insufficient to collate the output, then the collated output is generated for all pages that are stored in the printer memory. For example, the output can be 1, 2, 3, 1, 2, 3, 4, 5, 4, 5.</p> <ul style="list-style-type: none"> • Reverse page order—Depending on your printer model, the pages of a print job are printed in reverse order so that in the finished output, the last page appears on top. If you want the output back in normal page order, then manually reverse the pages.
Page Orientation	<p>The following settings determine the alignment of the paper or form when it is printed:</p> <ul style="list-style-type: none"> • Portrait—The orientation is vertical, where the page is taller than it is wide. • Landscape—The orientation is horizontal, where the page is wider than it is tall. • Rotate 180°—The page image is rotated to 180 degrees. This setting can be used with other orientation settings.
Print on Both Sides (Duplex)	<p>If this setting is selected, then the "Long edge" and "Short edge" settings specify which edge of the printed document is used as the binding edge. The following settings determine how long before the printer prints on the opposite side of a page:</p> <ul style="list-style-type: none"> • Normal (Default)—This setting uses the standard drying time. • Medium—This setting partially extends the drying time. • Extended—This setting uses the maximum drying time.

Setting	Description
Document Reading Order Preset	<p>The reading order of the print job that you are printing. Select either of the following:</p> <ul style="list-style-type: none"> • Left to right • Right to left <p>The reading order changes the preset value of the following:</p> <ul style="list-style-type: none"> • "Page order" setting in the N-up Settings dialog box • "Binding edge" setting in the Booklet Settings dialog box • Near and Far alignment settings in the Edit Watermarks dialog box
Page Layouts	<p>The following settings determine the layout of the page:</p> <ul style="list-style-type: none"> • Normal—Page layout settings are not applied to the print job. • Multiple pages per side (N-Up)—Multiple pages are printed on all sheets of paper. • Booklet—The print job is printed as a booklet. • Poster—The print job is printed in a larger format. • Mirror—A mirror image of the print job is printed. <p>Note: Some settings are available only in some printer models.</p>
Mixed Media Duplex Bitmap	<p>This feature shows a preview of the selected paper orientation and finishing settings.</p>

Notes:

- Program settings may override the settings in the Layout tab.
- Specifying multiple copies in both the Layout tab and the Windows-based program print dialog box may cause an error.
- To save the Collate setting, in the Configuration tab of the Printer Properties dialog box, select **Use printer-based**.

Understanding the Paper/Finishing tab

Notes:

- The finishing feature is available only in some printer models. For more information, see the printer *User's Guide*.
- To use the finishing settings, attach a finisher to the printer.

Setting	Description
Paper	<p>The following settings determine how paper is handled:</p> <ul style="list-style-type: none"> • Paper Size • Resizing Options—If “Fit to paper size” is selected, then the page image is automatically scaled to match a specific paper size. Note: Some Windows programs have a scaling setting. If the two settings are used at the same time, then an error may occur. • Manage Custom Sizes • Use full printable area—The page image is printed as close to the edge of the page. Note: Depending on your printer model, the full printable area may vary. • Other paper size with different orientation—The paper size that is loaded in a different orientation. This setting is recommended for two-sided print jobs, jobs that use the finisher, or both. Note: To disable two-sided printing, select Off. • Paper type • Paper source/tray—A list of supported paper types that can be used for different pages of a document. • Use multiple input options—A paper or other media from different input trays are used in the same print job. Note: This setting is available only in some print drivers.
Finishing	<p>The following settings determine how finishing settings are used:</p> <ul style="list-style-type: none"> • Output Bin Note: Depending on your printer model, supported output bins may vary. For a list of available output bins, see the printer <i>User's Guide</i>. • Separator sheets—The location of the separator sheets. • Separator sheet source—The source of the separator sheets. • Offset—Print jobs are stacked in staggered sets in the output bin. • Staple—The number and placement of staples in the finished print job. • Hole Punch—The location and number of holes to be punched in the finished print job. • Fold—If this setting is enabled, then the finished print job is folded.

Understanding the Quality tab

The Quality tab determines the print and image quality settings of a print job.

Setting	Description
Print quality settings ¹	<p>The following settings determine the print quality of the print job:</p> <ul style="list-style-type: none"> • Draft—The print job is printed using the lowest resolution for faster printing. • Normal—The print job is printed using standard print quality settings. • Best—The print job is printed using the best possible resolution. • Custom—The print job is printed using the specified settings. <p>Note: To let the printer automatically select the appropriate print resolution settings, select Auto.</p>
Sharpen ¹	<p>The detail of the print image is sharpened by increasing the contrast around the edges of text and images.</p> <p>Note: If images that have had a sharpening effect applied by another application are printed using this setting, then an error may occur.</p>
Resolution ²	<p>The following settings determine the resolution of the print job:</p> <ul style="list-style-type: none"> • Dots per inch • Image quality (IQ) • Color quality (CQ)
Halftone	<p>The following settings determine how the halftone screen is used:</p> <ul style="list-style-type: none"> • Use printer settings • Normal—A standard halftone screen is used. • Detail—An alternate halftone screen designed for thin color lines and text is used.
Color Preference ¹	<p>The following settings determine the intensity of the colors in the print job:</p> <ul style="list-style-type: none"> • Auto • Natural—A moderate degree of intensity to printed colors is used. • Vivid—The highest degree of intensity to printed colors is used.
Advanced Color Options ¹	<p>The following settings determine the print mode for the print job:</p> <ul style="list-style-type: none"> • Auto • Use ICC test Chart Process—A special print mode based on ICC profiles is used.
<p>¹ This setting is available only in inkjet printers.</p> <p>² This setting is available only in laser printers.</p> <p>³ This setting is available only in monochrome printers.</p> <p>⁴ This setting is available only in color printers and in some print drivers.</p> <p>⁵ This setting is available only in color printers.</p> <p>⁶ This setting is available only in color laser printers.</p> <p>⁷ This setting is available only in some print drivers.</p>	

Setting	Description
Gray Correction ³	<p>The following settings determine the brightness and contrast of the print job:</p> <ul style="list-style-type: none"> • Use printer settings • Off • Manual—This setting enables the brightness and contrast sliders.
Pixel Boost ³	<p>The following settings determine how the pixel density of a print job is enhanced:</p> <ul style="list-style-type: none"> • Use printer settings • Off • Fonts—The text in the print job is darkened. This setting affects only font data. • Horizontally—The horizontal lines of text and images in the print job are darkened. • Vertically—The vertical lines of text and images in the print job are darkened. • Both directions—Both horizontal and vertical lines of text and images in the print job are darkened.
Color Output ¹	The print job is printed either in color or in black and white.
Send color to printer ³	<p>Color images are printed in grayscale.</p> <p>Notes:</p> <ul style="list-style-type: none"> • When a print job is sent to the printer, the printer converts color images to monochrome grayscale. • This setting may slow printing performance.
Print Color Text as Black ³	All color texts are printed using only black ink.
Print text as black ⁴	The text is printed in black, but images are printed in color.
Print in black and white ⁵	The print job is printed in black and white.
Toner Darkness ²	<p>The following settings determine whether the print job is either lightened or darkened:</p> <ul style="list-style-type: none"> • Use printer settings • Use toner darkness—This setting enables the toner darkness slider.
<p>¹ This setting is available only in inkjet printers.</p> <p>² This setting is available only in laser printers.</p> <p>³ This setting is available only in monochrome printers.</p> <p>⁴ This setting is available only in color printers and in some print drivers.</p> <p>⁵ This setting is available only in color printers.</p> <p>⁶ This setting is available only in color laser printers.</p> <p>⁷ This setting is available only in some print drivers.</p>	

Setting	Description
ColorSaver ²	<p>The following settings determine whether the amount of toner that the printer uses is reduced when printing color images:</p> <ul style="list-style-type: none"> • Use printer settings • On • Off—Text is printed using the default amount of toner.
Edit Color Correction ⁶	<p>The following settings determine how the colors of the print job are adjusted to match the colors of other output devices or standard color systems:</p> <ul style="list-style-type: none"> • Use printer settings • Off • Auto—Depending on the object type and how color is specified, a different color conversion table is applied to all objects in the print job. • Manual—This setting enables the RGB and CMYK Manual color correction settings.
RGB Correction ⁶	<p>The following settings determine the brightness, contrast, and saturation of the print job:</p> <ul style="list-style-type: none"> • Use printer settings • Manual—This setting enables the brightness, contrast, and saturation sliders.
Edit Color Balance ⁶	<p>The following settings determine how the colors of the print job are adjusted by increasing or decreasing the amount of toner used for each color plane:</p> <ul style="list-style-type: none"> • Use printer settings • Manual—This setting enables the color balance sliders.
Edit Color Matching ⁶	<p>The following settings determine how the colors of the print job are matched to the colors on the monitor:</p> <ul style="list-style-type: none"> • Contrast (for images)—Color matching is applied to photographs and images. • Saturation (for business graphics)—Color matching is applied to charts and bright colors. • Colorimetric (for closest colors)—Color matching is applied to a print job that has a color that needs an exact match. <p>Note: To use this setting, you must have a printer that can reproduce the specified color.</p>

¹ This setting is available only in inkjet printers.

² This setting is available only in laser printers.

³ This setting is available only in monochrome printers.

⁴ This setting is available only in color printers and in some print drivers.

⁵ This setting is available only in color printers.

⁶ This setting is available only in color laser printers.

⁷ This setting is available only in some print drivers.

Setting	Description
Rich Black ⁷	<p>The following settings determine how black objects are made richer:</p> <ul style="list-style-type: none"> • On—During RGB-CMYK color conversion, either composite black for black or gray object is used. • Off—Depending on the selected color correction mode, either pure or composite black for black, or gray object is used.
<p>¹ This setting is available only in inkjet printers.</p> <p>² This setting is available only in laser printers.</p> <p>³ This setting is available only in monochrome printers.</p> <p>⁴ This setting is available only in color printers and in some print drivers.</p> <p>⁵ This setting is available only in color printers.</p> <p>⁶ This setting is available only in color laser printers.</p> <p>⁷ This setting is available only in some print drivers.</p>	

Understanding the Watermark tab

The Watermark tab determines the use of watermarks in a print job.

Notes:

- This feature is available only in some print drivers.
- On UPD version 2.14 or later, the watermark name can be locked.

Setting	Description
Do not use watermarks	A watermark is not used in the print job.
Use the same watermark on all pages	A watermark appears on all pages of the print job.
Use a different watermark on the first page	<p>The watermark on the first page is different from the watermark on subsequent pages of the print job.</p> <p>Note: If two-sided printing (Duplex) is enabled, then the specified watermark is used on the front side of the first page.</p>
Use a different watermark on odd/even pages	Different watermarks appear on odd and on even pages of the print job.
Edit Watermarks	Lets you edit the watermark settings.

Understanding the Print and Hold tab

The Print and Hold tab provides more settings for how and when a job is printed. When you use this feature, the printer holds the print job until the user releases it from the printer control panel. The Print and Hold tab provides multiple levels of security for held jobs.

Notes:

- This feature is available only in some printer models.
- For more information on releasing held jobs from the printer control panel, see the printer *User's Guide*.

Setting	Description
Use Print and Hold	If this setting is selected, then the Print and Hold feature is turned on.
Use logged-in user name	The Windows operating system for a user ID is queried, and then submitted as the default user name that is associated with the held print job.
User Name	The user name that is associated with a held print job.
Keep duplicate documents	Print jobs having the same user and job names are stored in the printer memory without being overwritten.
Confidential print	<p>Confidential print jobs are secured with a four-digit personal identification number (PIN). For more information on the allowed digits for the PIN, see your printer <i>User's Guide</i>.</p> <p>In the following scenarios, a dialog box requiring a four- to 16-digit PIN appears when releasing a print job:</p> <p>Note: Not specifying a PIN cancels the print job.</p> <ul style="list-style-type: none"> • The "Always prompt for PIN at print time" setting is not selected. • The "Always prompt for PIN at print time" setting is not selected and the PIN field is blank. <p>The dialog box requiring a four-digit PIN appears only on the following cases:</p> <ul style="list-style-type: none"> • The PIN is not specified. • An invalid PIN is specified. • The "Always prompt for PIN at print time" setting is selected. <p>Note: A confidential print job does not print until the PIN is entered and a user name is selected on the printer control panel.</p>
Verify print	The first copy of a multiple-copy print job is printed for inspection. The subsequent copies are held until they are canceled or released for printing.
Reserve print	The print job is stored in the printer memory for printing later.
Repeat print	The print job is released, and then a copy is stored in the printer memory for multiple printing later.

Understanding the Other Options tab

The Other Options tab determines the print driver settings that are not associated with a feature-specific tab.

Note: Some settings are available only in some printer models.

Use	To
TrueType Fonts	<p>Determine how TrueType fonts are printed, which character set to show, and whether to send information about printer-resident fonts to the application.</p> <ul style="list-style-type: none"> • Bitmaps (each character)—Create and send a bitmap to the printer for each different TrueType font character and point size in the document. • Bitmaps (full page)—Specify whether each page of the text and graphics in a document is saved as a bitmap and sent to the printer. • Outlines—Create and send an outline to the printer for each different TrueType font character in a document.

Use	To
Compression	<p>Reduce the file size of print jobs that contain images. Reducing the file size improves printing performance.</p> <ul style="list-style-type: none"> • Low—The print time is short but the lossless compression quality is low. • Optimum—The print time and lossless compression quality are balanced. • High—The compression quality for documents with images is high but the compression is lossy.
Edit Job Accounting	<p>Open the Job Accounting preferences dialog box, and then configure the Job Accounting settings that are associated with the print job.</p> <ul style="list-style-type: none"> • Keep history for last 5 entries—Retain the last five unique entries for each Job Accounting setting. The settings are available in a menu for each setting in the Job Accounting dialog box during printing. • Prompt for account information at print time—Prompt the user for job accounting information during printing. • Do not prompt at print time. Use the following job accounting settings—Use the Job Accounting settings specified in the following fields: <ul style="list-style-type: none"> – Use logged-in user name—Use the Windows login ID of the current user, and then update the User Name/ID field with the retrieved information. – User Name/ID—The user name or user ID associated with the print job. – Account Code—The account code associated with the print job. – Department Code—The department code associated with the print job. <p>Note: Some settings are available only in some printer models.</p>
Metafile spooling	<p>Specify the format of the stored printing information on the disk while a print job is waiting to be printed.</p> <ul style="list-style-type: none"> • Automatic—The print driver determines which format results in the fastest overall print time for each job. • On—The print driver spools all jobs in metafile format. • Off—All print processor functions are disabled and the print driver no longer spools jobs in metafile (EMF) format.
Encryption option	<p>Job encryption—Lets you encrypt the entire job.</p> <p>Note: This setting is available only in some printer models.</p>

Frequently asked questions

What are the fixes done in UPD?

For more information, see the *Windows UPD Release Notes*.

What is the update for UPD version 2.15.2?

Security is enhanced to prevent attacker-controlled codes that are running with system privileges. For more information, see the [support site](#).

What are the benefits of using the UPD?

The main benefit is the amount of time saved in deploying and administering a large fleet of printers. The UPD can be used to print to multiple devices and minimize the number of drivers in the network environment.

Does the UPD support Plug'n'Play with devices?

Plug'n'Play is available on all supported devices. For a list of supported devices, see [“Supported printers” on page 11](#).

Is the UPD Microsoft certified?

The UPD version 2 for Microsoft Windows Vista operating system or later is certified for all Windows operating systems for which Microsoft offers certification programs.

Is Point and Print available with this driver?

Point and Print works the same way with the UPD as with any other product-specific driver.

What is a version number?

A version number is a unique number or set of numbers assigned to a specific release of a program, file, firmware, hardware, driver, or software.

What is the UPD version numbering format?

The UPD version number is divided into sets of numbers, separated by decimal points.

UPD version 2.15.1.0 and later versioning schema

For example, **x.y.xy.yy**
where:

- x** is the major version.
- y** is the minor version.
- xy** is the revision of the minor version.
- yy** is the private version.

Part	Description
Major version	The primary level of the UPD release. It increments when there are major functional and architectural updates.
Minor version	The secondary level of the UPD release. It increments when there are minor functional updates.
Revision of the minor version	The tertiary level of the UPD release. It increments when there are changes made on the minor functional updates.
Private version	The level of the UPD release for specific customers. Note: If the version value is 0 , then the UPD is released to the general public.

Where can I find the version number of the print driver?

The version number is in the About tab of the Printer Properties dialog box.

Are model-specific print drivers still available?

Yes, while the UPD supports multiple printers and is equivalent to a model-specific print driver.

When must I use a model-specific print driver instead of the UPD?

If your printer is not in the list of supported printers, then use a model-specific print driver.

Why is the Resource Administration tab missing in Printer Properties?

The Resource Administration tab is available in the previous versions of UPD. The functionality of this tab for the UPD version 2 is now available in the Printer Driver Configuration Utility.

Is the Printer Driver Configuration Utility supported?

The Printer Driver Configuration Utility is supported when using the Lexmark Universal Print Driver System Installation package. It is available in the Lexmark website.

Is the UPD based on Microsoft system driver technology?

The UPD version 2 for Microsoft Windows Vista operating system or later is based on Microsoft system driver technology.

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