



LexmarkTM

Universal Print Driver

Technical White Paper Revision 13b

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Change history

Change history

Lexmark Universal Print Driver (UPD) version 2.13

- Added support for the following printer models:

Color laser multifunction products

- CX421adn
- CX522ade
- CX620 Series (CX622ade, CX622adhe)
- CX625 Series (CX625ade, CX625adhe, CX625adthe)
- MC2325adw
- MC2425adw
- MC2500 Series (MC2535ade, MC2535adwe)
- MC2640adwe
- XC2200 Series (XC2235, XC2240)
- XC4240

Color laser printers

- C2240
- C2325dw
- C2425dw
- C2500 Series (C2535dn, C2535dw)
- CS421dn
- CS521dn
- CS622de

Monochrome laser multifunction products

- MB2300 Series (MB2338dw, MB2338adn, MB2338adw)
- MB2400 Series (MB2442ade, MB2442adwe)
- MB2546ade
- MB2650ade
- MB2770adwhe
- MX320 Series (MX321adn, MX321adw)
- MX421ade
- MX520 Series (MX521de, MX521ade, MX521adte, MX522adhe)
- MX620 Series (MX622ade, MX622adhe, MX622adthe)
- MX720 Series (MX721ade, MX721adhe, MX722ade, MX722adhe)
- MX725adve

- MX820 Series (MX822ade, MX822adxe, MX822adtfe, MX824ade, MX824adxe, MX824adtfe, MX826ade, MX826adxe, MX826adtfe)
- XM1200 Series (XM1242, XM1246)
- XM3250
- XM5300 Series (XM5365, XM5370)
- XM7300 Series (XM7355, XM7365, XM7370)

Monochrome laser printers

- B2300 Series (B2338dn, B2338dw)
- B2400 Series (B2442dn, B2442dw)
- B2546dn
- B2650dn
- B2865dw
- M3250
- M5200 Series (M5255, M5265, M5270)
- MS321dn
- MS420 Series (MS421dn, MS421dw)
- MS521dn
- MS620 Series (MS621dn, MS621dtn MS622de, MS622dte)
- MS725dvn
- MS820 Series (MS821n, MS821dn, MS821dtn, MS822de, MS823n, MS823dn, MS824de, MS824dtn, MS825dn, MS826de, MS826dtn)
- Added support for separator sheets.
- Added support for Hagaki paper size.
- Added support for image watermarks when using PostScript® print drivers.
- Added support for the following certifications:
 - Citrix XenApp® 7.16
 - Citrix XenApp 7.15
 - Citrix XenApp 7.14
 - Citrix XenApp 7.13
 - Citrix XenApp 7.12
 - Citrix XenDesktop® 7.16
 - Citrix XenDesktop 7.15
 - Citrix XenDesktop 7.14
 - Citrix XenDesktop 7.13
 - Citrix XenDesktop 7.12

Note: For a list of supported Citrix® implementations, see [“Supported operating systems” on page 17](#).

- Updated the dmColor value of Devmode to sync properly with color and monochrome print jobs when using PCL5 and PCL XL emulation drivers.

Lexmark Universal Print Driver version 2.12

Note: If you are not using status monitor applications, then you can upgrade to UPD version 2.12. If you are using status monitor applications, then use only UPD version 2.6.

- Added support for the following printer models:

Color laser multifunction products

- CX920de
- CX921de
- CX922de
- CX923dte
- CX923dxe
- CX924dte
- CX924dxe
- CX927de
- XC4140
- XC9235
- XC9245
- XC9265

Color laser printers

- C9235
 - CS921de
 - CS923de
 - CS927de
- Added support for the Novell Open Enterprise Server 15 on SUSE Linux Enterprise Server 11 SP4 x86 and x64 operating systems.

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

- Added support for Branch Office Direct Printing.
- Added support for previewing bitmaps of paper sizes with different orientation and finishing settings.
- Added support for user-controlled bidirectional communication.
- Added support for the following certifications:
 - Citrix XenApp 7.11
 - Citrix XenApp 7.9
 - Citrix XenDesktop 7.11
 - Citrix XenDesktop 7.9

Note: For a list of supported Citrix implementations, see [“Supported operating systems” on page 17](#).

Lexmark Universal Print Driver version 2.11

Note: If you are not using status monitor applications, then you can upgrade to UPD version 2.11. If you are using status monitor applications, then use only UPD version 2.6.

- Added support for the following printer models:

Color laser multifunction products

- CX317dn
- CX417de
- CX517de
- CX727de
- CX827de

Monochrome laser multifunction products

- MX317dn
- MX417de
- MX517de
- MX617de
- MX717de
- MX718de

Color laser printers

- CS317dn
- CS417dn
- CS517de
- CS727de
- CS728de
- CS827de

Monochrome laser printers

- MS317dn
- MS417dn
- MS517dn
- MS617dn
- MS817dn
- MS817n
- MS818dn
- XM5200 Series (XM5263, XM5270)
- XM7200 Series (XM7263, XM7270)

Note: For more information, see [“Supported printers” on page 20](#).

- Added support for the following languages:
 - Croatian
 - Serbian
 - Slovak
 - Slovenian
- Added support for Novell 15 operating system.

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

- Added support for Microsoft® Windows Server® 2016 operating system.

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

- Added support for the following certifications:

- Citrix XenApp 7.8
- Citrix XenApp 7.7
- Citrix XenDesktop 7.8
- Citrix XenDesktop 7.7

Note: For a list of supported Citrix implementations, see [“Supported operating systems” on page 17](#).

- Improved the time to first print.

Lexmark Universal Print Driver version 2.10

Note: If you are not using status monitor applications, then you can upgrade to UPD version 2.10. If you are using status monitor applications, then use only UPD version 2.6.

- Added support for the following printer models:

Color laser printers

- C4100 Series (C4150)
- C6100 Series (C6160de)
- CS720 Series (CS720de)
- CS725 Series (CS725de)
- CS820 Series (CS820de, CS820dte, CS820dtfe)

Color laser multifunction products

- CX725 Series (CX725de, CX725dhe, CX725dthe)
- CX820 Series (CX820de, CX820dtfe)
- CX825 Series (CX825de, CX825dte, CX825dtfe, CX825dtpe)
- CX860 Series (CX860de, CX860dte, CX860dtfe, CX860dtpe)
- XC4100 Series (XC4150)
- XC6100 Series (XC6152de, XC6152dtfe)
- XC8100 Series (XC8155de, XC8155dte, XC8160de, XC8160dte)

Note: For more information, see [“Supported printers” on page 20](#).

- Added support for Citrix Ready XenApp 7.6 certification.

Note: For a list of supported Citrix implementations, see [“Supported operating systems” on page 17](#).

- Added support for two-sided printing.
- Added support for image compression in PostScript print drivers.
- Added support for showing the actual print speed in the Printer Properties dialog box.

Notes:

- If the print driver is installed and is connected to the printer, then the actual print speed is shown. If the printer is disconnected, then the printer model is set to Universal Mono Laser or Universal Color Laser, and the print speed is 20 ppm.

- If the print driver is installed and the printer is selected using Set Print Model, then the actual print speed is shown. If the printer is disconnected, then the minimum print speed is shown.
- Removed support for Windows Server 2003.

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

Lexmark Universal Print Driver version 2.9.1

Note: If you are not using status monitor applications, then you can upgrade to UPD version 2.9.1. If you are using status monitor applications, then use only UPD version 2.6.

- Added support for Windows 10.

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

Lexmark Universal Print Driver version 2.9

Note: If you are not using status monitor applications, then you can upgrade to UPD version 2.9. If you are using status monitor applications, then use only UPD version 2.6.

- Added support for applying a configuration file to printers on a cluster or remote environment.
Note: The configuration file can be applied using the Printer Driver Configuration Utility or from the command line using **ConfigUtil**. For more information, see the *Printer Driver Configuration Utility Help*.
- Added support for using the LIBJPEG library in rendering JPEG images, and removing GPL2 and GPL3 licensed files.
- Added support for allowing the host application to send JPEG data without converting it to a bitmap image file.
Note: This feature is available only in PCL XL emulation drivers.
- Added default settings for the print quality feature.
- Added support for job accounting when tracking fax jobs.
- Added support for printing documents from the Google Cloud Print™ web printing service. The following print driver features do not work when printing from Google Cloud Print:

Emulation drivers

- Multiple pages per side (N-Up)
- Use full printable area

PostScript print drivers

- Poster
- Booklet
- Multiple input options (MIO)
- PostScript Language level (PS)

PCL XL emulation drivers

- Send color to printer
- Added support for the European Accessibility Mandate 376 (EN 301 549) user interface compatibility.
- Improved the user interface performance of the "Printing preferences" and Printer Properties dialog boxes in a Point and Print with a network latency scenario.

- Replaced the "Enhance fine lines" feature with the Halftone feature.
- Restricted support for color printing when the printer model is set to **Universal Mono Laser**.
- Removed support for the following print quality presets:

For color printers:

- Text
- Text/Photo
- Photo
- Custom

For monochrome printers:

- Draft
- Normal
- Best
- Custom

Lexmark Universal Print Driver version 2.8

Note: If you are not using status monitor applications, then you can upgrade to UPD version 2.8. If you are using status monitor applications, then use only UPD version 2.6.

- Added support for Citrix XenApp 7.5 certification.

Note: For a list of supported Citrix implementations, see [“Supported operating systems” on page 17](#).

- Added support for the following operating systems:
 - Novell 12
 - Novell 11

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

- Added print support for non-Lexmark printers that support compliant PostScript and PCL emulation page description languages.

Depending on the non-Lexmark printer, the following basic features are supported:

- Some paper sizes and types
 - Some source selections
 - Two-sided printing
 - Page layout settings
- Improved support for image compression to reduce the spool file size.
 - Improved support for user interface performance of the "Printing preferences" and Printer Properties dialog boxes.
 - Improved the print driver response when updating the printer configuration using the Update Now-Ask Printer setting.
 - Improved the finishing performance when printing using a PostScript 3 print driver.
 - Improved the printing of watermarks when using a Microsoft Word plug-in.
 - Improved the printing of Microsoft Word documents containing embedded PCL 5 macros when using PCL XL emulation drivers and PostScript print drivers.
 - Improved the previewing of Microsoft PowerPoint® documents when using a PostScript 3 print driver.

- Improved printing from a Windows 8.1 computer when using PCL XL emulation drivers and a PostScript 3 print driver.
- Removed support for enabling two-sided printing by default.

Note: For printer models that support two-sided printing, this setting can be enabled manually. For a list of supported printers, see [“Supported printers” on page 20](#).

Lexmark Universal Print Driver version 2.7.2

Notes:

- If you are not using status monitor applications, then you can upgrade to UPD version 2.7.2. If you are using status monitor applications, then use only UPD 2.6.
- This version contains only bug fixes. If you are using a private print driver, then check the updates before installing this version to avoid losing specific fixes for your private print driver.
- Improved the printing of Microsoft Word documents with JPEG images when using PCL XL emulation drivers.

Note: To avoid generating large print spools, we recommend using image compression when printing.

- Improved the printing of Microsoft Excel® documents when using PCL XL emulation drivers.
- Removed support for Windows XP.

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

Lexmark Universal Print Driver version 2.7.1

Note: If you are not using status monitor applications, then you can upgrade to UPD version 2.7.1. If you are using status monitor applications, then use only UPD version 2.6.

- Added support for some color and monochrome laser printers.

Note: For a list of supported printers, see [“Supported printers” on page 20](#).

- Added support for Microsoft Device Stage when installing the UPD on a TCP/IP port.
- Added support for the following enhanced resolutions:
 - 1200 IQ
 - 2400 IQ
 - 4800 CQ

Note: This feature is available only in PCL 5 and PCL XL emulation drivers.

- Added support for image compression to improve printing performance.

Note: This feature is available only in PCL XL emulation drivers.

- Added support for folding paper in thirds automatically.
- Added support for enabling two-sided printing by default.

Note: This feature is available only in some printer models. For a list of supported printers, see [“Supported printers” on page 20](#).

- Improved support for UPD installation on a client using a Novell IPP port by using bidirectional communication.

Lexmark Universal Print Driver version 2.6.1

Note: If you are not using status monitor applications, then you can upgrade to UPD version 2.6.1. If you are using status monitor applications, then use only UPD version 2.6.

- Removed support for the language monitor component.

Lexmark Universal Print Driver version 2.6

- Added support for some color and monochrome laser printers.

Note: For a list of supported printers, see [“Supported printers” on page 20](#).

- Added support for the following operating systems:
 - Windows 8.1
 - Windows Server 2012 R2

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

- Updated the print driver version numbering format.

Note: For more information, see [“What is the UPD version numbering format?” on page 45](#).

- Updated the list of supported paper sizes.

Note: For a list of supported paper sizes, see [“Supported paper sizes” on page 28](#).

Lexmark Universal Print Driver version 2.x.5

Where **x** is the data stream.

- Added support for some color and monochrome laser printers.

Note: For a list of supported printers, see [“Supported printers” on page 20](#).

- Added support for the following operating systems:
 - Windows 8
 - Windows Server 2012

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

- Added support for the following certifications:
 - Citrix XenApp 6.5
 - Citrix XenApp 6.0

Note: For a list of supported Citrix implementations, see [“Supported operating systems” on page 17](#).

- Added support for the Package Creation Utility.
- Updated the list of supported languages.

Note: For a list of supported languages, see [“Supported languages” on page 30](#).

Lexmark Universal Print Driver version 2.x.4

Where **x** is the data stream.

- Added support for some color laser printers.

Note: For a list of supported printers, see [“Supported printers” on page 20](#).

- Added support for some operating systems.

Note: For a list of supported operating systems, see [“Supported operating systems” on page 17](#).

Lexmark Universal Print Driver version 2.x.3

Where **x** is the data stream.

- Added support for some color inkjet printers.

Note: For a list of supported printers, see [“Supported printers” on page 20](#).

- Added support for some paper sizes in inkjet printers.

Note: For a list of supported paper sizes, see [“Supported paper sizes” on page 28](#).

Lexmark Universal Print Driver version 2

- Added support for print driver version increments.
- Added support for custom installation package.
- Added support for job accounting.
- Added support for dynamic print driver configuration.
- Added support for Printer Driver Configuration Utility.
- Updated the user interface.

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.

Notes:

- The UPD version 2 works with the UPD version 1.
- For more information on the print driver version numbering format, see [“What is the UPD version numbering format?” on page 45](#).

Understanding the benefits

Versatility

The UPD is available in more than 27 languages, supporting more than 200 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

The following emulation drivers are available on computers running on Microsoft Windows Vista® operating system or later:

- PCL 5
- PCL XL
- PostScript 3

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

Starting in October 2012, 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 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 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 versions of the following:

- Windows 10
- Windows 8.1
- Windows 7
- Windows Vista
- Windows Server 2016
- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2
- Windows Server 2008

Notes:

- The UPD version 2.7.1 is the last release that supports the Windows XP operating system.
- 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 2016 (64-bit)
- Windows Server 2012 R2 (64-bit)
- Windows Server 2008 R2
- Windows Server 2008 (32-bit and 64-bit)

Citrix implementations

Microsoft Windows Server 2012 R2 operating system

- 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 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 operating system

- 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 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

Microsoft Windows Server 2008 R2 operating system

- 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 7.16
- 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	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
Color laser multifunction products			
CX310 Series ¹ (CX310dn, CX310n, CX317dn)	✓	✓	✓
CX410 Series ¹ (CX410de, CX410e, CX417de)	✓	✓	✓
CX421adn	✓	✓	✓
CX510 Series ¹ (CX510de, CX517de)	✓	✓	✓
CX522ade	✓	✓	✓
CX620 Series (CX622ade, CX622adhe)	✓	✓	✓
CX625 Series (CX625ade, CX625adhe, CX625adthe)	✓	✓	✓
CX725 Series (CX725de, CX725dhe, CX725dthe)	✓	✓	✓
CX727de	✓	✓	✓
CX820 Series (CX820de, CX820dtfe)	✓	✓	✓
CX825 Series (CX825de, CX825dte, CX825dtfe, CX825dtpe)	✓	✓	✓
CX827de	✓	✓	✓
CX860 Series (CX860de, CX860dte, CX860dtfe, CX860dtpe)	✓	✓	✓
CX920de	✓	✓	✓
CX921de	✓	✓	✓
CX922de	✓	✓	✓
CX923dte	✓	✓	✓
CX923dxe	✓	✓	✓
CX924dte	✓	✓	✓
CX924dxe	✓	✓	✓
CX927de	✓	✓	✓

¹ Two-sided printing is supported by default.

² Custom forms, collation, booklet printing, and most print quality controls are not available.

³ Two-sided printing is not supported.

Printer model	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
MC2325adw	✓	✓	✓
MC2425adw	✓	✓	✓
MC2500 Series (MC2535ade, MC2535adwe)	✓	✓	✓
MC2640adwe	✓	✓	✓
X543, X544, X546	✓	✓	✓
X548, X548e	✓	✓	✓
X734de, X736de, X738de	✓	✓	✓
X746de, X748de, X748dte	✓	✓	✓
X762e	✓	✓	✓
X772e	✓	✓	✓
X782e, X782e XL	✓	✓	✓
X790, X792	✓	✓	✓
X912	✓	X	✓
X925, XS925	✓	✓	✓
X940e, X945e	✓	✓	✓
X950de, X952de, X954de	✓	✓	✓
XC2100 Series ¹ (XC2130, XC2132)	✓	✓	✓
XC2200 Series (XC2235, XC2240)	✓	✓	✓
XC4140	✓	✓	✓
XC4150	✓	✓	✓
XC4240	✓	✓	✓
XC6100 Series (XC6152de, XC6152dtfe)	✓	✓	✓
XC8100 Series (XC8155de, XC8155dte, XC8160de, XC8160dte)	✓	✓	✓
XC9235	✓	✓	✓
XC9245	✓	✓	✓

¹ Two-sided printing is supported by default.

² Custom forms, collation, booklet printing, and most print quality controls are not available.

³ Two-sided printing is not supported.

Printer model	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
XC9265	✓	✓	✓
Mono laser multifunction products			
6500e	✓	✓	✓
MB2300 Series (MB2338dw, MB2338adn, MB2338adw)	✓	✓	✓
MB2400 Series (MB2442ade, MB2442adwe)	✓	✓	✓
MB2546ade	✓	✓	✓
MB2650ade	✓	✓	✓
MB2770adwhe	✓	✓	✓
MX310 Series ¹ (MX310dn, MX317dn)	✓	✓	✓
MX320 Series (MX321adn, MX321adw)	✓	✓	✓
MX410 Series ¹ (MX410de, MX417de)	✓	✓	✓
MX421ade	✓	✓	✓
MX510 Series ¹ (MX510de, MX511de, MX511dhe, MX517de)	✓	✓	✓
MX520 Series (MX521de, MX521ade, MX521adte, MX522adhe)	✓	✓	✓
MX610 Series ¹ (MX610de, MX611de, MX611dhe, MX617de)	✓	✓	✓
MX620 Series (MX622ade, MX622adhe, MX622adthe)	✓	✓	✓
MX6500e Series ¹ (MX6500e)	✓	✓	✓
MX710 Series ¹ (MX710, MX711, MX717de, MX718de)	✓	✓	✓
MX720 Series (MX721ade, MX721adhe, MX722ade, MX722adhe)	✓	✓	✓
MX725adve	✓	✓	✓
MX810 Series ¹ (MX810, MX811, MX812)	✓	✓	✓
¹ Two-sided printing is supported by default. ² Custom forms, collation, booklet printing, and most print quality controls are not available. ³ Two-sided printing is not supported.			

Printer model	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
MX820 Series (MX822ade, MX822adx, MX822adtfe, MX824ade, MX824adx, MX824adtfe, MX826ade, MX826adx, MX826adtfe)	✓	✓	✓
MX910 Series ¹ (MX910de, MX911dte, MX912dx)	✓	✓	✓
X203n, X204n	✓	✓	✓
X264dn, X363dn, X364dn, X364dw	✓	✓	✓
X340n ² , X342n ²	✓	✓	X
X422	✓	X	✓
X463de, X464de, X466dte, X466dtwe	✓	✓	✓
X642e	✓	✓	✓
X644e, X646e	✓	✓	✓
X646ef	✓	✓	✓
X651de, X652de, X654dte, X656de, X658de	✓	✓	✓
X820e	✓	✓	✓
X830, X832	✓	✓	✓
X850e, X852e, X854e	✓	✓	✓
X860e, X862e, X864e	✓	✓	✓
XM1100 Series ¹ (XM1135, XM1140, XM1145)	✓	✓	✓
XM1200 Series (XM1242, XM1246)	✓	✓	✓
XM3100 Series ¹ (XM3150)	✓	✓	✓
XM3250	✓	✓	✓
XM5100 Series ¹ (XM5163, XM5170)	✓	✓	✓
XM5200 Series ¹ (XM5263, XM5270)	✓	✓	✓
XM5300 Series (XM5365, XM5370)	✓	✓	✓
XM7100 Series ¹ (XM7155, XM7163, XM7170)	✓	✓	✓

¹ Two-sided printing is supported by default.

² Custom forms, collation, booklet printing, and most print quality controls are not available.

³ Two-sided printing is not supported.

Printer model	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
XM7200 Series ¹ (XM7263, XM7270)	✓	✓	✓
XM7300 Series (XM7355, XM7365, XM7370)	✓	✓	✓
XM9100 Series ¹ (XM9145, XM9155, XM9165)	✓	✓	✓
Color laser printers			
C2240	✓	✓	✓
C2325dw	✓	✓	✓
C2425dw	✓	✓	✓
C2500 Series (C2535dn, C2535dw)	✓	✓	✓
C510	✓	X	✓
C520, C522, C524	✓	✓	✓
C530, C532, C534	✓	✓	✓
C540, C543, C544, C546	✓	✓	✓
C734, C736	✓	✓	✓
C746dn, C746dtn, C746n, C748de, C748dte, C748e	✓	✓	✓
C750	✓	X	✓
C752	✓	X	✓
C760, C762	✓	✓	✓
C770, C772	✓	✓	✓
C780, C782, C782 XL	✓	✓	✓
C790, C792	✓	✓	✓
C912	✓	X	✓
C920	✓	✓	✓
C925	✓	✓	✓
C935	✓	✓	✓

¹ Two-sided printing is supported by default.

² Custom forms, collation, booklet printing, and most print quality controls are not available.

³ Two-sided printing is not supported.

Printer model	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
C950de	✓	✓	✓
C2100 Series ¹ (C2132)	✓	✓	✓
C9235	✓	✓	✓
CS310 Series ¹ (CS310dn, CS310n, CS317dn)	✓	✓	✓
CS410 Series ¹ (CS410de, CS410dn, CS410n, CS417dn)	✓	✓	✓
CS421dn	✓	✓	✓
CS510 Series ¹ (CS510de, CS517de)	✓	✓	✓
CS521dn	✓	✓	✓
CS622de	✓	✓	✓
CS720de	✓	✓	✓
CS725de	✓	✓	✓
CS727de	✓	✓	✓
CS728de	✓	✓	✓
CS820 Series (CS820de, CS820dte, CS820dtfe)	✓	✓	✓
CS827de	✓	✓	✓
CS921de	✓	✓	✓
CS923de	✓	✓	✓
CS927de	✓	✓	✓
CS4150	✓	✓	✓
CS6160de	✓	✓	✓
Mono laser printers			
B2300 Series (B2338dn, B2338dw)	✓	✓	✓
B2400 Series (B2442dn, B2442dw)	✓	✓	✓
B2546dn	✓	✓	✓
¹ Two-sided printing is supported by default. ² Custom forms, collation, booklet printing, and most print quality controls are not available. ³ Two-sided printing is not supported.			

Printer model	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
B2650dn	✓	✓	✓
B2865dw	✓	✓	✓
E120n ³	✓	✓	X
E220 ³	✓	X	X
E230, E232, E234, E234n	✓	X	X
E238, E240	✓	✓	X
E240n, E340, E342n	✓	✓	✓
E250d, E250dn, E350d, E352dn, E450dn	✓	✓	✓
E260, E260d, E260dn	✓	✓	✓
E320, E322	✓	X	✓
E321 ³ , E323 ³	✓	X	✓
E330, E332	✓	X	✓
E360d, E360dn	✓	✓	✓
E460dn, E460dw, E462dtn	✓	✓	✓
M1100 Series ¹ (M1140, M1140 Plus, M1145)	✓	✓	✓
M3100 Series ¹ (M3150, M3150dn)	✓	✓	✓
M3250	✓	✓	✓
M5100 Series ¹ (M5155, M5163, M5163dn, M5170)	✓	✓	✓
M5200 Series (M5255, M5265, M5270)	✓	✓	✓
MS310 Series ¹ (MS310d, MS310dn, MS312dn, MS315dn, MS317dn)	✓	✓	✓
MS321dn	✓	✓	✓
MS410 Series ¹ (MS410d, MS410dn, MS415dn, MS417dn)	✓	✓	✓
MS420 Series (MS421dn, MS421dw)	✓	✓	✓
MS510 Series ¹ (MS510dn, MS517dn)	✓	✓	✓

¹ Two-sided printing is supported by default.

² Custom forms, collation, booklet printing, and most print quality controls are not available.

³ Two-sided printing is not supported.

Printer model	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
MS521dn	✓	✓	✓
MS610 Series ¹ (MS610de, MS610dn, MS617dn)	✓	✓	✓
MS620 Series (MS621dn, MS621dtn, MS622de, MS622dte)	✓	✓	✓
MS710 Series ¹ (MS710, MS711)	✓	✓	✓
MS725dvn	✓	✓	✓
MS810 Series ¹ (MS810, MS811, MS812, MS817dn, MS817n, MS818dn)	✓	✓	✓
MS820 Series (MS821n, MS821dn, MS821dtn, MS822de, MS823n, MS823dn, MS824de, MS824dtn, MS825dn, MS826de, MS826dtn)	✓	✓	✓
MS910 Series ¹ (MS911de)	✓	✓	✓
Optra S 1625	✓	X	X
Optra S 1855	✓	X	X
Optra S 2420	✓	X	X
Optra S 2450, Optra S 2455	✓	X	X
Optra T612, Optra T614	✓	X	✓
T420	✓	X	✓
T430	✓	X	✓
T520, T522	✓	X	✓
T620, T622	✓	X	✓
T630, T632, T634	✓	X	✓
T640, T642, T644	✓	✓	✓
T650, T652, T654, T656	✓	✓	✓
W820	✓	✓	✓
W840	✓	✓	✓
W850	✓	✓	✓

¹ Two-sided printing is supported by default.

² Custom forms, collation, booklet printing, and most print quality controls are not available.

³ Two-sided printing is not supported.

Printer model	PCL 5 emulation driver	PCL XL emulation driver	PS emulation driver
Color inkjet printers			
Pro710 Series (Pro715, Pro719)	✓	✓	✓
Pro910 Series (Pro912, Pro915, Pro919)	✓	✓	✓
Pro4000 Series (Pro4000, Pro4000c)	✓	✓	✓
Pro5500 Series (Pro5500, Pro5500t)	✓	✓	✓
S310 Series (S315, S319)	✓	✓	✓
S410 Series (S415, S419)	✓	✓	✓
S510 Series (S515, S519)	✓	✓	✓
¹ Two-sided printing is supported by default. ² Custom forms, collation, booklet printing, and most print quality controls are not available. ³ Two-sided printing is not supported.			

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
- Lexmark Enhanced TCP/IP ports
- USB connections
- Web services ports
- Novell iPrint ports

Supported paper sizes and types

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

Supported paper sizes

- 12 x 18 inches
- A3 (297 x 420 mm)
- A4 (210 x 297 mm)
- A5 (148 x 210 mm)

- A6 (105 x 148 mm)
- B4 (257 x 364 mm)
- B5 (182 x 257 mm)
- Banner 1 (216 x 914 mm)
- Banner 2 (216 x 1219 mm)
- Banner 3 (297 x 914 mm)
- Banner 4 (297 x 1219 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)
- Postcard (4 x 6 inches)
- SRA3 (320 x 450 mm)
- Statement (5.5 x 8.5 inches)
- Tabloid (11 x 17 inches)
- Universal (216 x 360 mm)

Supported paper types

- Bond
- Business card
- Card stock
- Colored
- ColorLok certified plain
- Envelope
- Glossy brochure
- Glossy photo
- Heavy glossy
- Heavy plain
- Iron-on transfer
- Labels
- Letterhead
- Lexmark PerfectFinish™ Photo
- Lexmark Photo

- Light
- Matte brochure
- Matte photo
- Photo greeting cards
- Plain
- Premium plain
- Preprinted
- Recycled
- Rough/Cotton
- Rough Envelope
- Transparency
- Vinyl labels

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

The UPD may be installed through the Windows Add Printer Wizard or through the Lexmark Universal Print Driver System Administrator Installation package available at 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.

Downloading the Universal Print Driver

- 1 From your computer, go to lexmark.com.
- 2 Click **Customer Support > Universal Print Driver**.
- 3 From the "Complete drivers and software for Windows" section, click **Download**.

Notes:

- 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, 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.</p> <p>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. <p>Notes:</p> <ul style="list-style-type: none"> — Some Windows programs have a scaling setting. If the two settings are used at the same time, then an error may occur. — The scaling setting is available only in PostScript print drivers. <ul style="list-style-type: none"> • Manage Custom Sizes • Use full printable area—The page image is printed as close to the edge of the page. <p>Note: Depending on your printer model, the full printable area may vary.</p> <ul style="list-style-type: none"> • 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. <p>Note: To disable two-sided printing, select Off.</p> <ul style="list-style-type: none"> • Paper type • Paper source/tray • Use multiple input options—A paper or other media from different paper trays are used in the same print job. <p>Note: This setting is available only in some print drivers.</p>
Finishing	<p>The following settings determine how finishing settings are used:</p> <ul style="list-style-type: none"> • Output Bin <p>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>.</p> <ul style="list-style-type: none"> • 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.

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
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 ^{TM2}	<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 Fax tab

The Fax tab determines the settings used with a fax job.

Notes:

- The fax setting is available only in PostScript emulation drivers. For information on installing the PostScript emulation driver, see the *Software and Documentation CD*.
- If the Fax tab is not available, then the fax setting is not installed.

Setting	Description
Enable fax	If this setting is selected, then the fax feature of the print driver is turned on.
Always display settings prior to faxing	The Send Fax dialog box appears before a fax job is sent to let you verify all recipient fax numbers. If this setting is not selected, then the recipient fax number must be verified from the Fax Settings section in the Fax tab.
Fax Settings	<p>The following settings show the dialing and page information associated with a fax job:</p> <ul style="list-style-type: none"> • Fax number(s) Note: Fax numbers can be entered manually or selected from the phone book. • Dialing prefix—This setting is needed to access an outside line. If a dialing prefix is not required, then leave this field blank. • Fax name—The Windows operating system user ID of the computer where the fax job is sent from. • Paper size • Orientation
Cover Page	<p>The following settings determine how the cover page is added to the outgoing fax job:</p> <ul style="list-style-type: none"> • Include cover page with fax • Include recipient information/comments • Include sender information Note: To specify the sender information in the Fax Cover Settings dialog box, click Settings.

Understanding the Watermark tab

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

Note: This feature is available only in some print drivers.

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	The watermark on the first page is different from the watermark on subsequent pages of the print job. Note: If two-sided printing (Duplex) is enabled, then the specified watermark is used on the front side of the first page.
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 Overlays tab

The Overlays tab determines the overlay used and how it is shown in a print job.

Note: This feature is available only in PCL and PCL XL emulation drivers, and in some printer models.

Setting	Description
Do not use overlays	An overlay is not used in the print job.
Use the same overlay on all pages	An overlay appears on all pages of the print job.
Use a different overlay on the first page	The overlay on the first page is different from the overlay on subsequent pages of the print job.
Use a different overlay on odd/even pages	Different overlays appear on odd and on even pages of the print job.
Overlay placement	The following settings determine the placement of the overlay in relation to the page images: <ul style="list-style-type: none"> • Over the page's images—The overlay is printed on top of the text or graphic. • Under the page's images—The text or graphic is printed on top of the overlay.

Understanding the Print and Hold tab

The Print and Hold tab provides more settings for how and when a job is printed. When using 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	Confidential print jobs are associated with a four-digit PIN. Note: A confidential print job does not print until the PIN is entered and a user name is selected on the printer control panel.
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.

Setting	Description
TrueType Fonts	<ul style="list-style-type: none"> • Bitmaps (each character)—A bitmap is created, and then sent to the printer for all TrueType font characters and point sizes in the print job. • Bitmaps (full page)—A bitmap is created, and then sent to the printer for all pages in the print job. • Outlines—An outline is created, and then sent to the printer for all TrueType font characters in the print job. • Automatically Select—The print driver selects a setting for the print job. Note: This setting is available only in PostScript print drivers. • Adobe Type 1 fonts—Smaller TrueType fonts are printed as bitmapped fonts, and larger TrueType fonts are printed as Adobe® Type 1 outline fonts. Note: This setting is available only in PostScript print drivers. • Adobe Type 42 fonts—TrueType fonts are printed as Adobe Type 42 hinted outline fonts. At larger point sizes, Type 42 fonts may appear smoother and less jagged. Note: This setting is available only in PostScript print drivers and in printers that support a TrueType rasterizer.

Setting	Description
Image Compression	<p>The file size of a print job that contains images is reduced. Reducing the file size improves printing performance.</p> <p>Note: This setting is available only in PCL XL emulation drivers and PostScript print drivers.</p> <p>For PCL XL emulation drivers, select Enable Image Compression. To adjust the image quality and compression level, use the Quality slider.</p> <p>Note: Increasing the image quality decreases the image compression.</p> <p>For PostScript print drivers, the following settings determine how images are compressed:</p> <ul style="list-style-type: none"> • NONE • Lossless—Lempel-Ziv-Welch (LZW) compression is used to reduce file size without reducing image quality. • High—JPEG compression is used to reduce file size by reducing image quality. To adjust the image quality and compression level, use the Quality slider. <p>Note: Increasing the image quality decreases image compression.</p>
Edit Job Accounting	<p>The following settings determine how job accounting is used:</p> <ul style="list-style-type: none"> • Keep history for last 5 entries—The last five unique entries are retained for all job accounting settings. • Prompt for account information at print time • Do not prompt at print time. Use the following job accounting settings—The following job accounting settings are used: <ul style="list-style-type: none"> – Use logged-in user name—The Windows login ID of the current user is used and the User Name/ID field is updated with the retrieved information. – User Name/ID—The user name or user ID that is associated with the print job. – Account Code—The account code that is associated with the print job. – Department Code—The department code that is associated with the print job. <p>Note: Some settings are available only in some printer models.</p>
Metafile spooling	<p>The following settings determine the format used to store printing information on the printer hard disk while a print job is held:</p> <ul style="list-style-type: none"> • Automatic—The print driver determines which format results in the fastest overall print time for a print job. • On—The print driver spools all print jobs in metafile format. • Off—All print processor functions are disabled and the print driver does not spool print jobs in metafile (EMF) format.

Setting	Description
PostScript	<p>Note: This setting is available only in PostScript drivers.</p> <p>The following settings determine how PostScript is configured:</p> <ul style="list-style-type: none">• Optimize output format—The PostScript data stream that the print driver produces based on the selected format is optimized.• Language level—The PostScript level that is used for the print job.• Print error information—Information on PostScript language errors that are encountered during printing are printed.• Generate PostScript in driver—The print driver generates the PostScript language for the print job. <p>Notes:</p> <ul style="list-style-type: none">• Some settings are available only with the Encapsulated PostScript setting when Fax is enabled.• If Encapsulated PostScript is selected as the output format, then any printer-specific setting is removed. The output file can be imported into other PostScript applications.
PCL emulation	<p>The PCL emulation settings for both PCL 5 and PCL XL emulation drivers.</p> <ul style="list-style-type: none">• Graphic Mode—This setting determines how the printer processes and prints text and graphics in a print job. <p>Note: This setting is available only in PCL 5 emulation drivers.</p>
Continuous Image	<p>Pages are printed without any space in between. The pages look like one continuous page.</p> <p>Note: This setting is available only in some print drivers.</p>

Frequently asked questions

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 20](#).

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 2.6.0.0 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.

Part	Description
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.

UPD version 2.x.5.0 and older versioning schema

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

where:

y is the major version.

x is the data stream.

xy is 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.
Data stream	The data stream value. It varies depending on the following emulations: <ul style="list-style-type: none">• PCL = 1• PostScript = 2• PCL XL = 3
Minor version	The secondary level of the UPD release. It increments when there are 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 should 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.

What printing modes are supported with the PCL Emulation UPD?

Raster and GL/2 modes are supported. Host-based printing is not supported.

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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