HP Universal Print Driver
Solution and Feature Guide

Technology for better business outcomes

CONTENTS

GETTING TO KNOW THE HP UNIVERSAL PRINT DRIVER

Welcome to the Solution and Feature Guide for the HP Universal Print Driver. This guide will introduce you to the print driver.

Ideal for a mobile and worldwide workforce, the HP Universal Print Driver is available in 35 languages and is compatible with Microsoft® and Citrix systems, providing easy accessibility and a common user experience for systems worldwide.

The HP Universal Print Driver is a single, intelligent, feature-rich driver that makes it easy to connect to a range of HP LaserJet devices in the office or on the road—without downloading separate, product-specific drivers. The driver provides full-featured support for most HP LaserJet devices and now includes basic printing capability for non-supported devices, such as non-HP printers.

Manage your printing environment efficiently with the HP Universal Print Driver, a driver trusted by users worldwide. IT professionals can use the HP Driver Configuration Utility to customize your printing environment. This utility enables you to define printing defaults, such as two-sided or grayscale printing, and advanced feature availability before installing and deploying the HP Universal Print Driver. You can use industry-leading HP Web Jetadmin to create print queues from a single remote system, then connect those print queues to the HP Universal Print Driver.

HOW THE HP UNIVERSAL PRINT DRIVER WORKS

Once the HP Universal Print Driver has been installed on a PC, it communicates with each supported HP print device to determine the unique print capabilities installed on each device. The driver then displays current, accurate device information, including advanced options like automatic two-sided printing, input trays, and finishing features. Broad compatibility and bidirectional communication enables users to access the full features of nearly every HP device in your managed printing environment. As a result, the information you see reflects the real capabilities of the print device. Plus, this information can be updated when new finishing accessories, for example, are added to the print device through the **Update Now** option. The user interface design is also consistent across devices, increasing usability.

When you print, the job is sent to the print server or directly to the print device, depending on your environment. The same bi-directional communication that builds the product-specific user interface provides you with real-time information, such as when the job has finished printing—not just when the job has been spooled to the print server.

Print servers

The driver communicates with each HP device and automatically customizes the user interface for each device's unique features.

Wireless devices

Network connected printers

USB-capable printers

TOP FEATURES

- ## Improve the performance of your IT environment
  The HP Universal Print driver makes it easier to use, support, certify, and deploy HP LaserJet devices in your environment. Use industry-leading HP Web Jetadmin to create print queues from a single remote system, then connect those print queues to the HP Universal Print Driver. No matter where users are across your global enterprise, they have the benefit of the latest version of the HP Universal Print Driver, and you have the convenience of deployment from a single location.

- ## Manage printing policies with ease
  Reduce your printing costs—and impact on the environment—by applying policies that monitor supplies and paper usage. The HP Managed Printing Administration and Active Directory templates enable IT managers to set defaults for two-sided printing and energy-saving features. On HP Color LaserJet devices, IT managers can use the HP Universal Print Driver to restrict color access and control costs. Assign color access by user, application, or time of day—or limit it to special projects.

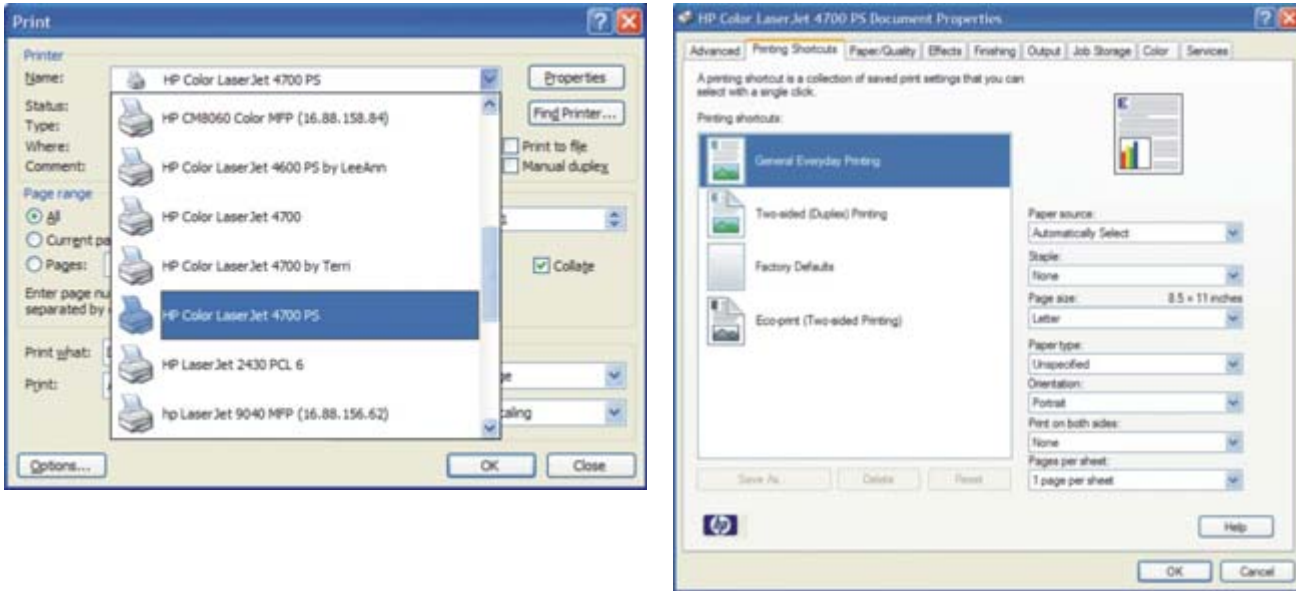- ## Rely on HP—a leader in printing and imaging
  HP EasyColor optimizes color printing. This smart technology detects document content and adjusts color rendering accordingly, reducing rasterized images and improving the appearance of photos. In addition to improved color images, your PowerPoint presentation will print more quickly with HP EasyColor. Best of all, you don't need to make a series of complex, manual adjustments. Simply enable HP EasyColor within the HP Universal Print Driver and experience better color printing. You get the best color print—effortlessly.

FLEXIBLE driver installation

Because the HP Universal Print Driver is flexible, you can install it in Traditional or Dynamic mode—and you can have both running on your PC at once.
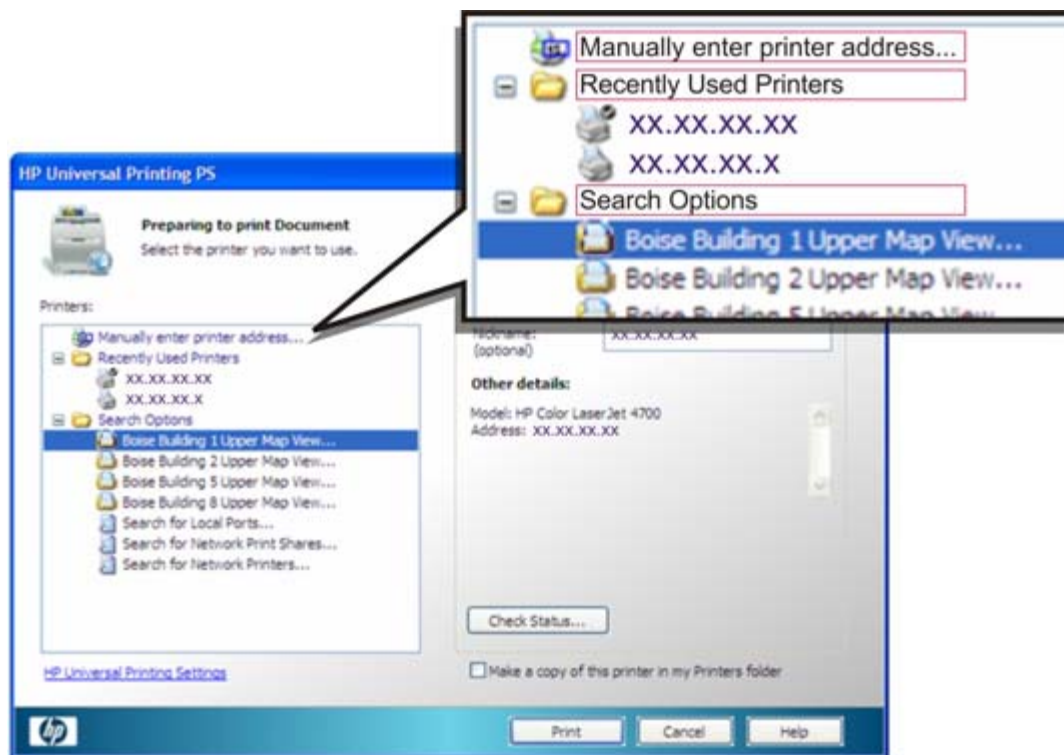
Traditional mode functions exactly like the product-specific drivers you are accustomed to using. When installed in Traditional mode, the HP Universal Print Driver is associated with a specific print device, which you can then select from an application's **Print** menu, as illustrated in the image on the left. Once selected, the driver functions as a traditional, product-specific driver (refer to the image on the right).

When installed in Dynamic mode, the HP Universal Print Driver offers the most flexibility and is ideal for global corporations and a mobile work force. Dynamic mode enables users to find printers on a network without downloading a product-specific driver—without IT or help desk assistance. This is perfect when you're on the road, in a conference room, or want help finding a new device.

There are four methods for finding a printer in Dynamic mode. The image below illustrates three of the four Dynamic modes for finding a printer: **Manually enter printer address**, **Recently Used Printers**, and **Search Options**.

You can also find printers using **Managed Printer Lists**, discussed in "Create, import, and modify Managed Printer Lists" on page 12.

Note   Both Traditional and Dynamic modes can be used on the same PC to support both office and mobile printing, and users can switch easily between them. This enables the best printing experience.

HP provides advanced deployment and configuration tools for enterprise environments. You can fully configure the HP Universal Print Driver for your specific enterprise requirements. Please see the Systems Administrator's Guide at www.hp.com/go/upd and select the **Documentation** tab for more information.

Installing the HP Universal Print Driver in Traditional mode

For a current list of supported print devices, go to www.hp.com/go/upd and select the **Specifications** tab.

1. Before beginning installation, make sure the HP Universal Print Driver supports your environment. The driver supports:
    *   Microsoft Windows Vista®, 2000, XP®, XP Professional x64, 2003 and 2008 Server (32/64 bit)
    *   Microsoft Windows® Terminal Services and Citrix Presentation Server Environments

Note   The HP Universal Print Driver can be used independently of management tools. However, for network administrators, the HP Managed Printing Administration (MPA) software or Active Directory templates are recommended. For more information on both, see page 11.
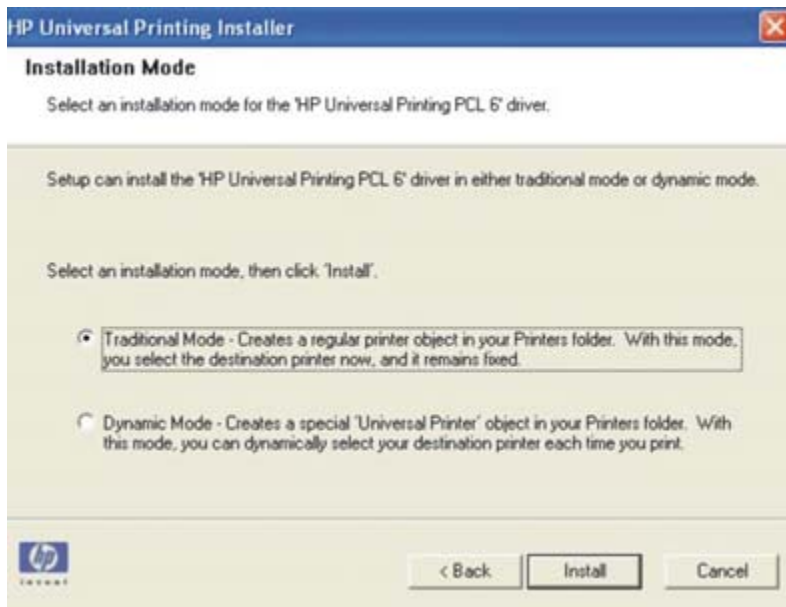
2. Go to the following Web site: www.hp.com/go/upd.

3. Decide which HP Universal Print Driver to install based on your specific printing needs. The table below provides a description and recommended environment for each.

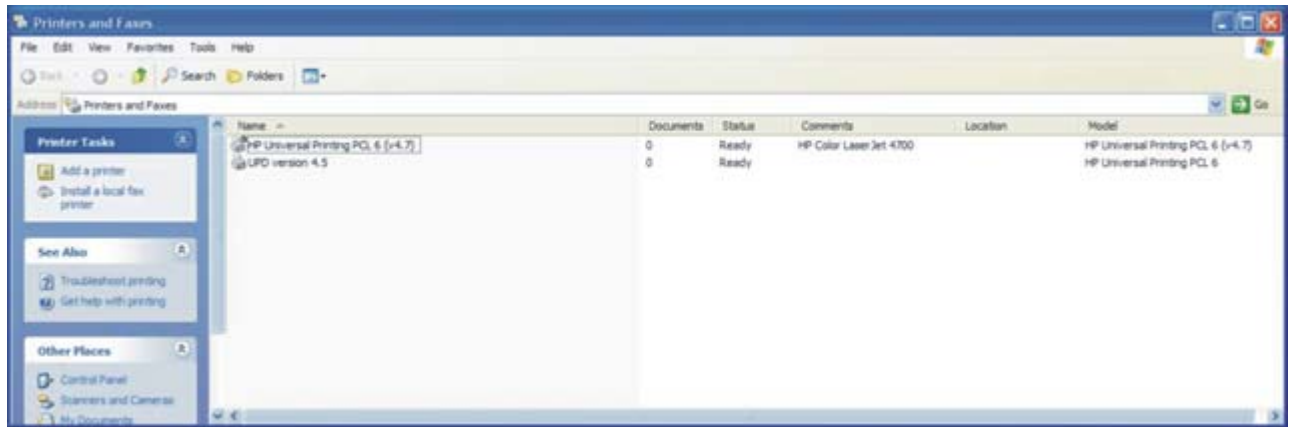| PDL	Recommended print environment
HP PCL6	Recommended for printing in all Windows environments
	Provides the overall best speed, print quality, and printer feature support for most users
	Developed to align with Windows Graphic Device Interface (GDI) for best speed in Windows environments. May not be fully compatible with third-party and custom solutions based on PCL5
HP PCL5 driver	Recommended for general office Windows printing
	Backward compatible with previous PCL versions or older HP LaserJet printers
	Is the best choice for third party or home-grown custom solutions (forms, fonts, SAP programs)
HP postscript emulation driver	Recommended for printing with Adobe or other highly graphics-intensive applications
	Use for HP postscript level 2 and 3 needs and postscript font support
	Slightly faster than PCL6 when using Adobe applications
	Best print compatibility between Apple Macintosh and Windows applications

For more information on installing the appropriate driver for your printing environment, refer to www.hp.com/go/upd and select the **Documentation** tab.

4. Download and save the HP Universal Print Driver specific to your operating system and printing needs.
5. Navigate to and unzip the HP Universal Print Driver download file to a folder on your PC.
6. Open the unzipped HP Universal Print Driver folder.
7. Double-click the install.exe file to install the software.
8. The **Universal Printing Installer Wizard** opens. Read the software license agreement and click **Yes** to continue.
9. The **Installation Mode** window opens.
10. Select **Traditional mode** and click **Install**, as shown in the image below. The **Add Printer Wizard** opens.

11. The **Installing** window opens. Wait for install to complete.

12. When the **Finish** window opens, click **Finish**. Both the HP Universal Print Driver version number and the model name of the installed device will be displayed.

Installing the HP Universal Print Driver in Dynamic mode

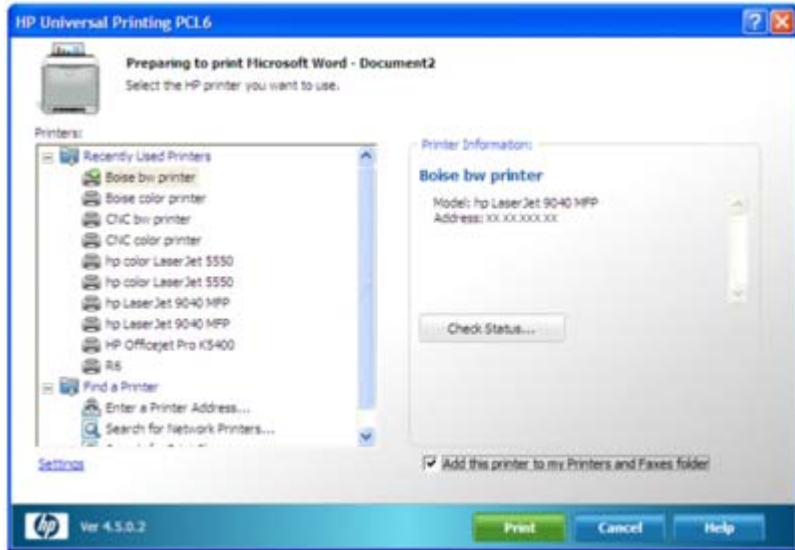Repeat instructions beginning at step 5 above, selecting Dynamic mode at step 10.

11. Right-click on the HP Universal Print driver in your Printers and Faxes folder or select the HP Universal Print Driver from the Print dropdown menu of an application.
12. Click on **Properties**.
13. Click on **Search for Network Printers**.

14. Select a device and click **OK**.
15. Click **Check Status**.
16. Click **OK**.
17. Repeat 11 and 12.
18. Click **Enter a Printer Address**.
19. Type in the IP address or host name of a printer and click **OK**.
20. Click **Check Status**.
21. Click **OK**.

A permanent instance of this driver can be created by simply clicking **Add this printer to my Printer and Faxes folder**, as shown below. When you select this, the driver will function in Traditional mode and users can select print devices from an application's **Print** menu.

Note   This option is only available for users with Local Admin rights.

BROAD device support

With the HP Universal Print Driver, you get the broadest compatibility of any print driver:

- **Supports HP LaserJet devices as well as many non-LaserJet or non-HP devices**—The HP Universal Print Driver provides full printing support, including support for advanced features, for most HP LaserJet devices. The driver also offers basic printing capability for many other printing devices. To see a list of supported products, visit www.hp.com/go/upd and select the **Specifications** tab. (While the HP Universal Print Driver may enable printing to devices that are not included on the list, HP does not support these devices.)

- **Communicates with networked and direct-connected devices**—Simply plug your USB cable into any supported USB-enabled HP LaserJet device or find a network device using Dynamic mode. Either way you enjoy the benefits of instant connectivity.

- **Speaks your printer's language**—The HP Universal Print Driver is available in multiple printer languages, including PCL5, PCL6, and HP postscript 2 and 3 emulation. This means it is compatible with more HP printing devices than ever.

- **Speaks your language**—The HP Universal Print Driver is available in 35 languages.

- **Supports most Windows operating systems**—The HP Universal Print Driver includes support for Microsoft Windows Vista, XP, XP Professional x64, and 2003 and 2008 Server (32/64 bit); Microsoft Windows Terminal Services; Citrix Presentation Server Environments; and Novell iPrint.
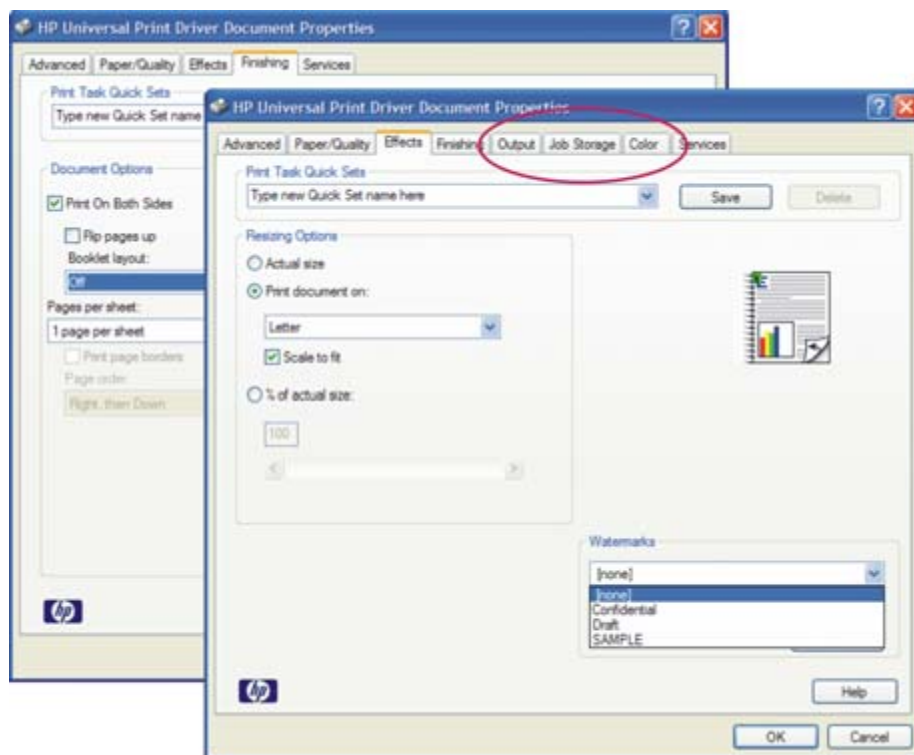
FULL-FEATURED, bidirectional communication

The HP Universal Print Driver communicates with each HP device to gather information and to provide real-time print job and device information. This accurate, up-to-date information gives users the details they need and empowers them to resolve common problems. The driver also automatically customizes the user interface for each device's unique features.

Accurate device features

Because the HP Universal Print Driver discovers device features using bidirectional communication with your HP printing devices, it provides current, accurate device information. The print driver knows and displays such advanced features as automatic two-sided printing, job storage (private print, stored, or proof-and-hold jobs), input trays, output bins, stapling, and watermarks. In addition, if you add or remove a feature, such as a paper tray or a hard disk, the HP Universal Print Driver will revise the device's capabilities via the **Update Now** option.

The images below show the differences in the **Document Properties** tab between two different printers. The second printer has **Output**, **Job Storage**, and **Color** capabilities that the first printer does not. The HP Universal Print Driver detected these differences and customized the user interfaces accordingly.

If you want more control of your print environment, you can use the HP Driver Configuration Utility to disable the bi-directional communication and configure the driver. This is particularly useful when you need to create queues before print devices are physically installed. You can also use this utility to limit print features, such as paper sizes or finishing devices, to specific user groups depending on need. You can also limit types of media, such as transparencies. For more on this utility, see "Configure the HP Universal Print Driver" on page 15.
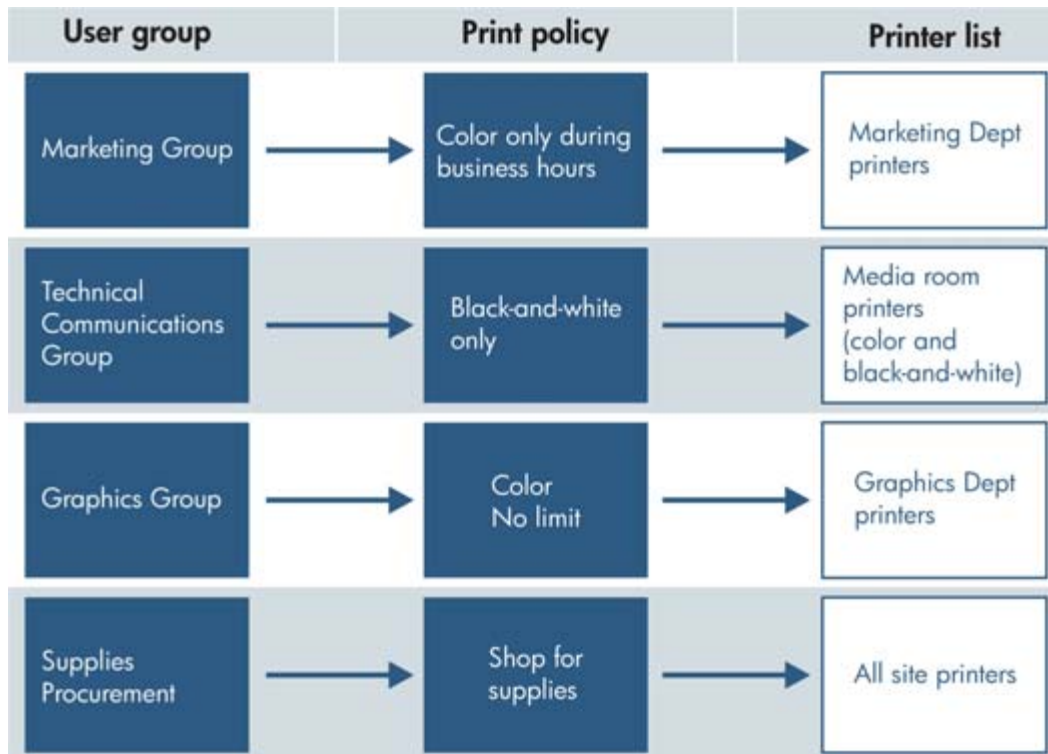
Note   You can also manually configure the HP Universal Print Driver from the **Device Settings** tab without bidirectional communication. (See the System Administrator's Guide, which can be found at www.hp.com/go/upd. Select the **Documentation** tab.)

EASY to manage and configure

The HP Universal Print Driver is a straightforward, simple solution that you can implement with minimal disruption to your existing print environment. There's no need to change your workflow or your processes.

Get even more functionality from the HP Universal Print Driver—use HP Managed Printing Administration (MPA) software or Active Directory (AD) group policy templates to create User Groups or Managed Print Policies that manage notifications and control color access. HP MPA software also allows you to create Managed Printer Lists to help users quickly find a printer. Both provide an automated method to create a controlled and customized print environment. Download HP MPA software or AD templates from www.hp.com/go/mpa.

The image below illustrates the potential relationship between user groups, print policies, and printer lists.

User group	Print policy	Printer list
Marketing Group	Color only during business hours	Marketing Dept printers
Technical Communications Group	Black-and-white only	Media room printers (color and black-and-white)
Graphics Group	Color No limit	Graphics Dept printers
Supplies Procurement	Shop for supplies	All site printers

Create and modify Managed Print Policies

Use Managed Print Policies (MPPs) to create a customized print environment and to limit user network access to certain printers. An MPP controls the driver operation in a particular printing environment. For example, users in one environment could print in color any time, while in another environment could print only during business hours.
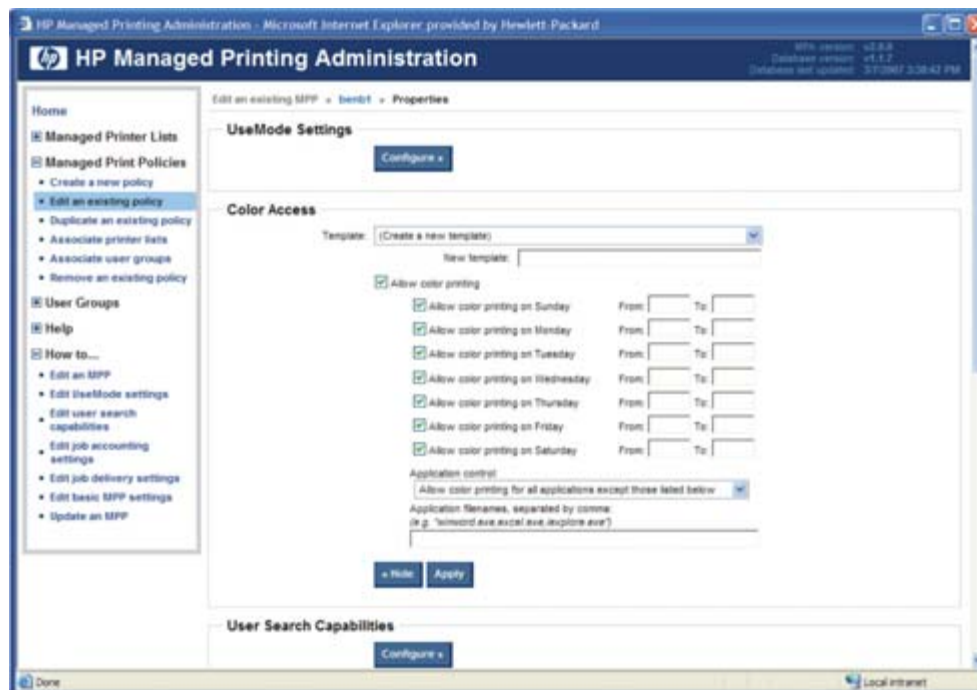
One benefit of an MPP is that it extends the control of IT administrators over the printer environment, ultimately reducing support costs, supplies costs, and productivity costs in the company. IT administrators can assign color access by user, time of day, or application, or shut color capability down completely until it's needed for special projects. This ensures that the people who truly need to leverage the power of color—such as your sales team and marketing department—can, while others automatically default to black-and-white printing.

The MPP contains the following features:

- **UseMode settings**. Controls how users access the printing environment and controls printing attributes, detection of HP printers, device-verification level, and availability of services.

- **Color access**. Controls users' access to printing color on a color-capable device.

- **User search capabilities**. Controls user searches based on local ports, network print shares, and network printers (in Dynamic mode).

- **Status and supplies notifications**. Controls what status and supplies notifications (if any) appear when the user opens the HP UPD dialog box.

- **Job accounting**. Controls what job accounting information to submit to an external application or post to a Web server.

- **Job delivery**. Controls what print-job data to submit to an external application. For example, the job data can be used in a pay-for-print environment.

- **Basic MPP settings**. Controls basic features such as refresh rate, name, and default MPP for users who are not currently associated to a specific MPP.

The image below illustrates the dialog box that limits color usage.

MPPs also allow you to control when status and supplies notifications appear. Customize job, device, and supplies status notifications to fit the needs of your company or a specific department or group of users. If you decide it's appropriate, notifications may include links that allow the user to contact your company's support web page or shop online for supplies—or they may not.
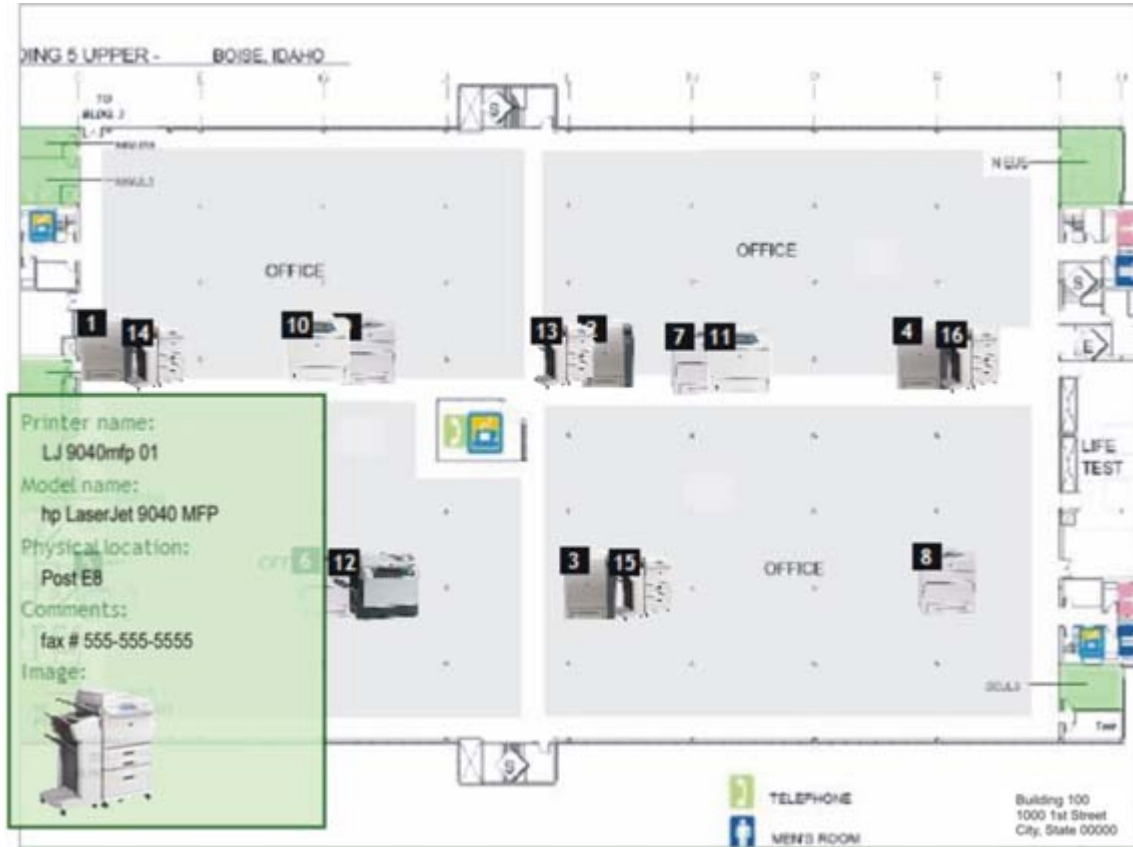
You can also disable or limit the information available to users in the **Services** tab of the HP Universal Print Driver with MPPs.

For additional information on all of the management capabilities and how to set them for your environment, see the documentation at www.hp.com/go/upd.

Create, import, and modify Managed Printer Lists

Help users find the printing devices they need by employing Managed Printer Lists (MPLs). MPLs are defined lists of printers based on department, printing needs (such as color or advanced finishing), or location. Printer lists may be imported from HP Web Jetadmin, and you may add printers to existing MPLs.

Use MPA software to customize MPL views to simplify locating available print devices. Printers that are located in an MPL can be automatically discovered using the Dynamic mode, making it easy for mobile users or users in a changing environment to find a printer. Display printer lists using the Default HP Universal Print Driver view, Tabular HTML view, List with Printer Graphics, or Clickable Image Map (shown below). This interactive image-based map displays printers that users can select. The image map allows users to click on the map to select specific printers.

The screen below shows the tabular view of the same MPL shown above in the image map.

Name	Model	Address	Location	Comments	Features
CLJ 4700 C5	HP Color LaserJet 4700	15.98.151.31	5 upper/C5		
CLJ 4700 L5	HP Color LaserJet 4700	15.98.151.37	5 upper/L5		
CLJ 4700 L8	HP Color LaserJet 4700	15.98.151.44	5 upper/L8		
CLJ 4700 R5	HP Color LaserJet 4700	15.98.151.41	5 upper/R5		
CLJ 5550 C8	hp color LaserJet 5550	15.98.151.33	5 upper/C8		
CLJ 5550 G8	hp color LaserJet 5550	15.98.151.35	5 upper/G8		
CLJ 5550 N5	hp color LaserJet 5550	15.98.151.39	5 upper/N5		
CLJ 5550 R8	hp color LaserJet 5550	15.98.151.42	5 upper/R8		
CLJ5550 G5	hp color LaserJet 5550	15.98.151.29	5 upper/G5		
LJ 4250dtn G5	hp LaserJet 4250	15.98.151.30	5 upper/G5		
LJ 4250dtn mono R5	hp LaserJet 4250	15.98.151.38	5 upper/N5		
LJ 4345mfp G8	hp LaserJet 4345 mfp	15.98.151.34	5 upper/G8	fax # 208-396-7581	
LJ 9000mfp L5	HP LaserJet 9000 MFP	15.98.151.36	5 upper/L5		

Create and modify User Groups

Establish user groups, determine their printing needs, and assign Managed Printer Lists and Managed Print Policies based on those needs. For example, create a user group for your finance department and assign a policy that allows color printing from 8 to 5 on weekdays, or assign a printer list to the departments that are located in the same building.

User groups can be created using MPA software. You can also apply print policies to user groups already established in Active Directory.

CUSTOMIZABLE deployment

The HP Universal Print Driver is easy to integrate and customize to your print environment. When you are creating a printer path in HP Web Jetadmin, the HP Universal Print Driver is the default driver. The two tools work seamlessly together.

Configure the HP Universal Print Driver

You can configure the HP Universal Print Driver before installing and deploying it using the HP Driver Configuration Utility found at www.hp.com/go/dcu. This is most beneficial when configuring the driver for multiple workstations or print servers for print queues that share the same configuration. This utility allows you to define device defaults and feature availability such as two-sided or grayscale printing. Some of these defaults can be locked so that users must always use certain features, for example two-sided printing to reduce printing costs.

You can also use the configuration utility to delete existing printer shortcuts and create new administrator-defined shortcuts. Users will be able to employ these shortcuts once they have installed the preconfigured driver.

Note   For additional information on the HP Driver Configuration Utility, please refer to the System Administrator's Guide, which can be found at **www.hp.com/go/upd**. Select the **Documentation** tab.

Supported printing environments

- **Point and Print environment**—Point and Print is the feature that enables a Microsoft Windows user to connect and print to a remote printer without any disks or other installation media. Using the HP Universal Print Driver in a Point and Print environment results in fewer drivers to manage on print servers. Point and Print automatically downloads and installs all printer driver and data files and the configuration information required to use the remote printer from the client computer.

- **Direct IP Printing**—Direct IP printing connects computers directly to network printers without requiring print servers. The HP Universal Print Driver makes Direct IP printing easy and convenient for users while simplifying printing support for IT administrators. You can use Add Printer Wizard, the HP Universal Print Driver installer, and/or Dynamic mode to create Direct IP printers on client PCs.

Installation methods

The HP Universal Print Driver can be deployed into most environments using the same tools and approaches used for product-specific drivers. Install or modify the driver using one of the following methods:

- Add Printer Wizard
- Install.exe
- Microsoft command line tools prompt
- HP Web Jetadmin display plug-in

Web Jetadmin installation

The HP Universal Print Driver postscript emulation driver is bundled with HP Web Jetadmin software and can be installed from any **Create** or **Edit** queue interface. HP Universal Print Drivers PCL5 and PCL6 can be added to HP Web Jetadmin through **Application Management**, **Application Update**.

When HP Web Jetadmin creates a queue using the HP Universal Print Driver, the driver and printer (specified in HP Web Jetadmin) are installed in Traditional mode.
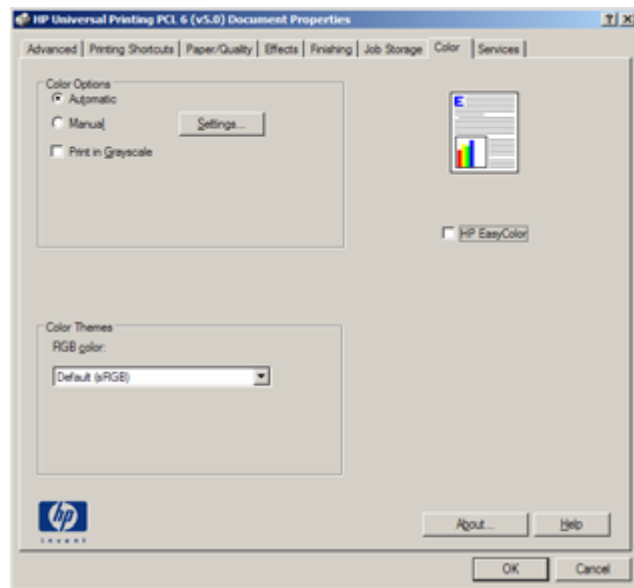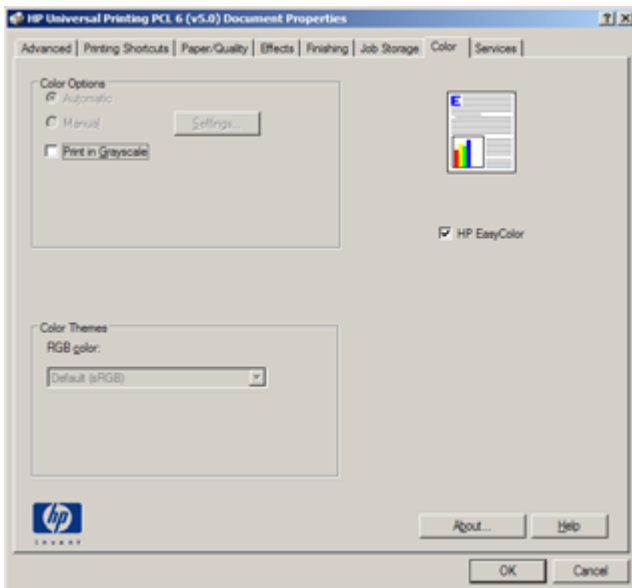
EFFORTLESS color performance

The culmination of years of HP color innovation, HP EasyColor ensures you get the best color and black-and-white prints—combining multiple technology enhancements into one, easy-to-use feature. This smart technology detects document content and adjusts color rendering automatically, improving the appearance of photos and reducing rasterized images.

A key feature is image classification. HP EasyColor scans your file, and if it detects a photo, it determines which enhancements are necessary and adjusts the photo image quality automatically. HP EasyColor does this by employing your application's JPG and PNG pass through, which enables it to enhance the entire image at once rather than in little pieces. This also improves color consistency within the image. HP EasyColor delivers sharper photos with a more natural appearance.

In addition to improved color photos, your PowerPoint presentation may print more quickly with HP EasyColor. And because the spool file size is smaller, the network traffic to your color printer will also be reduced.

Best of all, you don't need to make a series of complex, manual adjustments. HP EasyColor is automatically enabled, so there's no need for you to do anything. Experience better color printing—effortlessly.
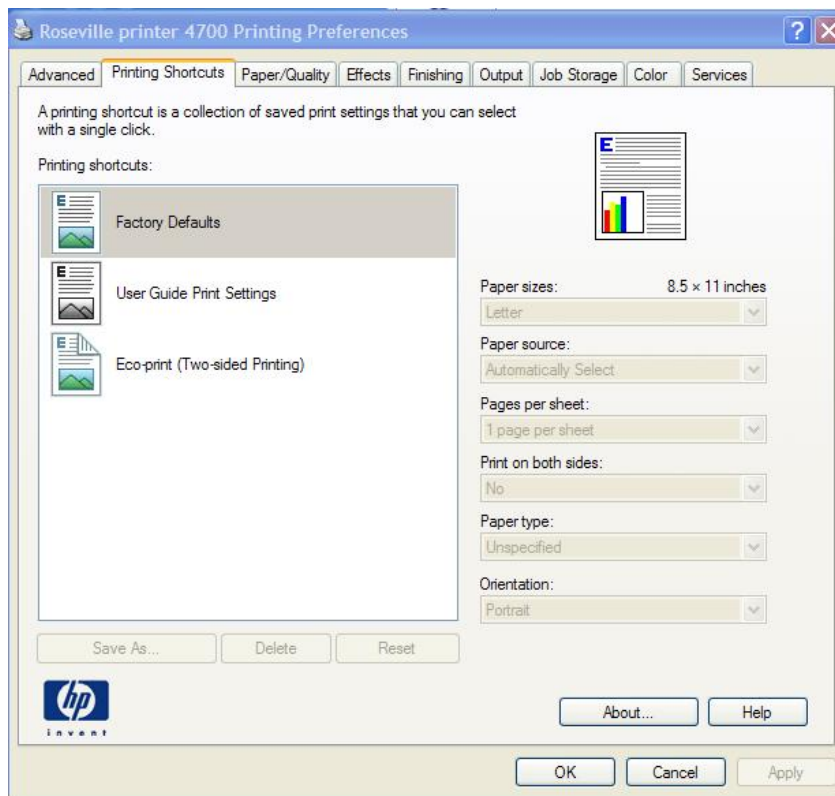
Environmental RESPONSIBILITY

As one of the world's largest consumer IT companies, a leading IT supplier to small and medium-size businesses, and a leader in enterprise computing, HP's largest impact on the environment is through its products. The environmental performance of products is largely determined at the design stage. HP's Design for the Environment initiative is driving improvements at every stage in the product lifecycle—helping to reduce the amount of energy, paper, packaging, and materials used at HP and by our customers. Through intelligent design, we can reduce the environmental impact of our products, and of our customers.

The HP Universal Print Driver makes it easy to reduce paper use by controlling print settings automatically from one location, helping your company to print more responsibly and save money.

- **Two-sided printing Eco-Print short cut saves paper**. The HP Universal Print Driver's new **Eco-print** short cut enables two-sided printing, making it easier to reduce paper use.
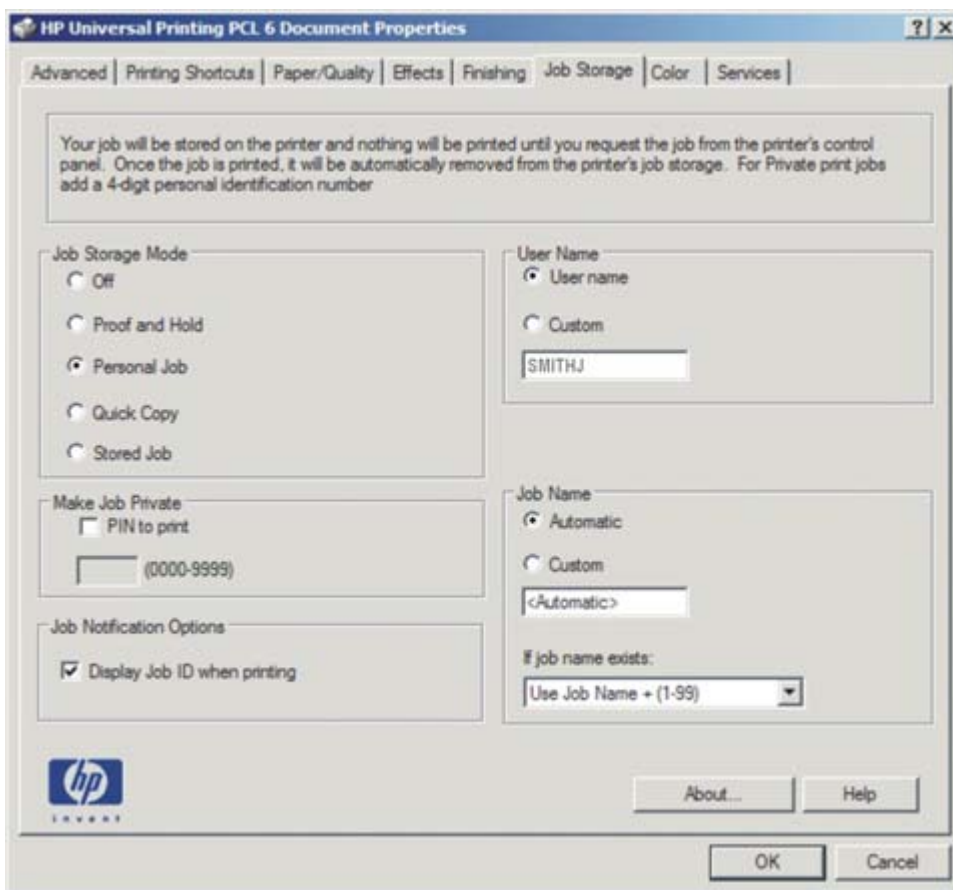

- **Policy controls help you reduce the impact of printing on the environment while saving money**. The HP Managed Printing Administration and Active Directory templates support a variety of policy controls that can help your company lessen its impact on the environment and save money via your HP LaserJet and Edgeline print devices. The **Duplex Default** setting reduces paper use and **Edgeline Quality Modes Control** ensures the right print quality is pre-set for HP Edgeline MFPs.

INDUSTRY-LEADING security

HP has made security an integral component of its imaging and printing devices and solutions. In addition to supporting a wide range of standard, trusted security protocols, HP digital senders and HP LaserJet printers and MFPs offer industry-leading security capabilities and solutions that are designed to enable secure management, network communications, output, access, and device integrity. Moreover, HP has reduced complexity—the biggest obstacle to ensuring end-to-end security. Impressive security features are frequently ignored because IT can find them difficult to implement, so HP focuses not only on delivering state-of-the-art security capabilities but on creating seamlessly integrated, easy-to-use solutions as well.

- **PIN printing provides extra security when printing**. In environments where privacy and security are critical, PIN printing ensures that the right person picks up a printed document. With PIN printing, the user enters a four-digit PIN in the driver when sending a print job. When at the printer, the user enters the same PIN to authorize the printer to begin printing the document. Print jobs are cleared from the printer's memory when they have finished printing for added security.

- **Print private documents securely without a PIN**. New PIN-less printing allows users to print and then pick up documents when they want. Users queue print jobs and control when they print by printing from the print device. Print jobs are then cleared from the printer memory after printing for added security.

> **Note**   The printer must support PIN and PINless printing to use these features.

- **Help make your printing environment and your printers more secure**. The HP Managed Printing Administration and Active Directory templates can make your printing environment more secure throughout the organization. You can set Private (PIN) Printing as a default, which allows users to queue print jobs when they want but requires them to enter a PIN at the print device when jobs are printed. You can also secure your print path using solutions specifically created for the HP Universal Print Driver by our print solutions partners.

FOR MORE INFORMATION

Download the free HP Universal Print Driver for Windows today at www.hp.com/go/upd. Need more help? Visit www.hp.com/support/universalprintdriver for support and more information.

To download the HP Managed Printing Administrator or HP's Active Directory Templates, go to: www.hp.com/go/mpa. Need more help? Visit www.hp.com/support/mpa for support and more information.

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