



HP Smart Universal Printing Driver - User Guide

SUMMARY

Learn about the HP Smart Universal Printing Driver.

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1 Purpose and scope

Since 2006, thousands of businesses and millions of users worldwide have switched to the HP Universal Print Driver (UPD) to make printing easier across a changing landscape.

Now it's time to move to the HP Smart Universal Printing Driver (HP Smart UPD). Revolutionize printing to a heterogeneous fleet with the HP Smart UPD resulting in simple, intuitive & compelling printing experiences. HP Smart UPD is a true "single printing driver" based on Microsoft XPS driver technology (V4 and V3) that works with a true heterogeneous print fleet. You don't need to consider PDL-specific UPDs anymore. This is a true UPD with a single driver package supporting the entire print fleet generating any PDL. Thus, enterprise businesses can do away with the legacy PDL-specific UPD-based drivers and print queues, saving time, money and effort for enterprise businesses to maintain and upgrade just a single printing driver - HP Smart UPD - to print to their entire fleet.


Table 1-1 Key differences

Specification	UPD	Smart UPD
Driver technology supported	V3	V3 and V4
Page description language (PDL)	PS/PCL6	PCL6, PS, PCL3, PCLmS
Printer segment	Mainly Small & Medium Business and Enterprise printers	All HP products. For HP Printers currently supported, refer to HP Smart UPD - Supported printers .
ARM64 support through V4 driver	No	Yes

Introduction

This user guide provides information about the HP Smart Universal Printing Driver.

HP Smart UPD is a universal printing driver that provides support for all PDL for V3 and V4 drivers to print. This guide refers to HP Smart UPD without specifying the output format.

 **NOTE:** The information in this guide is based on the latest information available at the time of writing. For the most current information, always refer to hp.com/go/smartupd. Information on the website supersedes information in this guide.

Generally, procedures in this guide represent the steps required for Microsoft Windows 10. The steps required for other Windows operating systems might be slightly different.

This guide is distributed in an electronic format to serve as a reference for information technology administrators, customer-care agents, support engineers, system administrators, management information systems personnel, and printer users.

This guide includes the following information:

- Procedures for installing and uninstalling software components, including command-line configuration and installation of HP Smart UPD.
- Descriptions of the features, benefits, use, and management of HP Smart UPD.

The following table describes the structure of this guide. For more information about the location of information in these chapters, see the table of contents.

Table 1-2 Overview of the HP Smart Universal Printing Driver User Guide

Chapter	Content
Purpose and scope (Chapter 1)	Describes the focus and intent of this guide, including the conventions used and the hardware to which this guide pertains.
Software description (Chapter 1)	Describes HP Smart UPD software, including the software requirements for installing HP Smart UPD and software availability.
Planning an HP Smart Universal Printing Driver deployment (Chapter 2)	Provides information for planning and deploying HP Smart UPD in your environment.
Installing and uninstalling HP Smart UPD (Chapter 3)	Provides instructions for installing and uninstalling HP Smart UPD.
Using HP Smart UPD (Chapter 4)	Provides information about using HP Smart UPD and its features.
Troubleshooting (Chapter 5)	Provides instructions for troubleshooting possible communication or connection issues between HP Smart UPD and the target printer.
Frequently asked questions (Appendix A)	Answers common questions about HP Smart UPD.
HP Smart UPD deployment worksheet (Appendix B)	Provides a worksheet containing the line items for deploying HP Smart UPD.
HP Smart UPD deployment flowcharts (Appendix C)	Contains flowcharts that describe the deployment options for HP Smart UPD.
Support information to collect (Appendix D)	Contains a list of support-related questions for troubleshooting issues with HP Smart UPD.
Glossary	Contains explanations of commonly used terms in reference to HP Smart UPD.

Conventions used in this guide

Review the various conventions used in this guide.

This guide uses the following conventions:

- File names and file extensions display in uppercase.
Example: Find the `SAMPLE.TXT` file in the `C:\Temp` directory.
- Menu names, field names, and options to select display in bold type.
Example: On the **File** menu, click **New**.
- Names of windows, screens, and panels display in bold type.
Example: The **Job Manager** dialog box appears.
- References to other sections in this guide display in colored type.

Supported printers

For a list of the currently supported HP printers, click the link below.

[HP Smart UPD - Supported printers](#)

For release notes or more information, refer to the HP Smart Universal Print Driver Series for Windows [Manuals page](#).

Minimum system requirements

The following minimum system requirements are needed to use the HP Smart Universal Printing Driver.

For **SUPD V4 Driver**: Microsoft .NET 4.6.1

For **SUPD V3 Driver**: None

Supported operating systems

HP Smart Universal Printing Driver supports the following operating systems:

V4

- **Client**: Windows 10, Windows 10 ARM64, Windows 11, Windows 11 ARM64
- **Server**: Windows Server 2016, Windows Server 2019, Windows Server 2022

V3

- **Client**: Windows 10, Windows 11
- **Server**: Windows Server 2016, Windows Server 2019, Windows Server 2022



NOTE: For the latest information on supported operating systems, refer to the [HP Smart Universal Print Driver - Release Notes](#).

Language availability

The HP Smart Universal Printing Driver is available in 40 languages.

Table 1-3 Supported HP Smart UPD languages

Arabic	Kazakh
Bahasa Indonesia	Korean
Bulgarian	Latvian
Catalan	Lithuanian
Chinese - Simplified	Norwegian (Bokmal)
Chinese - Traditional	Polish
Croatian	Portuguese (Brazil)
Czech	Portuguese (Portugal)
Danish	Romanian
Dutch	Russian
English	Serbian (Cyrillic)
Estonian	Serbian (Latin)
Finnish	Slovak
French	Slovenian
German	Spanish - Mid-Atlantic
Greek	Swedish
Hebrew	Thai
Hungarian	Turkish
Italian	Ukrainian
Japanese	Vietnamese

Software description

Learn about the HP Smart UPD.

The HP Smart UPD helps eliminate driver chaos in your print environment by dramatically reducing the number of printing drivers needed. Broad compatibility ensures that HP Smart UPD works with many HP print products, often reducing printing driver use to a single driver.

HP Smart UPD works well with a broad range of networked and direct-connected HP LaserJet, HP PageWide, and MFPs, as well as a number of HP Business Inkjet/OfficeJet printers. HP printers share state-of-the-art technology, allowing HP Smart UPD to support complex capabilities across many HP printers and making them easier to use, support, certify, and deploy.

Easy management tools help meet your unique needs

HP provides tools and services to customize and manage drivers and printers. You can choose the driver capabilities that best suit your unique environment, such as managing print queues, managing color usage, ensuring secure printing for sensitive documents, and so on.

The following HP tools are available:

- HP Embedded Web Server (EWS) can be accessed by using a browser over HTTPS. You can use the EWS to access status information and configure the printer. For more information about using the EWS, see the whitepaper *Configuration Guide using the Embedded Web Server (EWS)*.
- HP Web Jetadmin is a web-based interface. You can use HP Web Jetadmin to create print queues and update drivers on remote systems from one location. more information about HP Web Jetadmin is available at www.hp.com/go/wja.
- HP Smart Print Administrator Resource Kit (HP Smart PARK) is a collection of tools, scripts and documents to help print administrators install, deploy, configure and manage the HP Smart Universal Printing Driver (HP Smart UPD) and the associated print queues. For more information, visit the [Manuals page](#).

Helps reduce paper use and save money

The EcoSMART Settings preset in HP Smart UPD enables two-sided printing by default, making it easier to reduce paper use.



NOTE: This feature might vary depending on the printer model.

Helps increase productivity and reduce support calls

HP Smart UPD enables advanced functions on all the printers it supports, from two-sided printing and stapling to private (PIN) printing and color themes. Users are not held up or held back by a lack of advanced print features.

The following versions of HP Smart UPD are available:

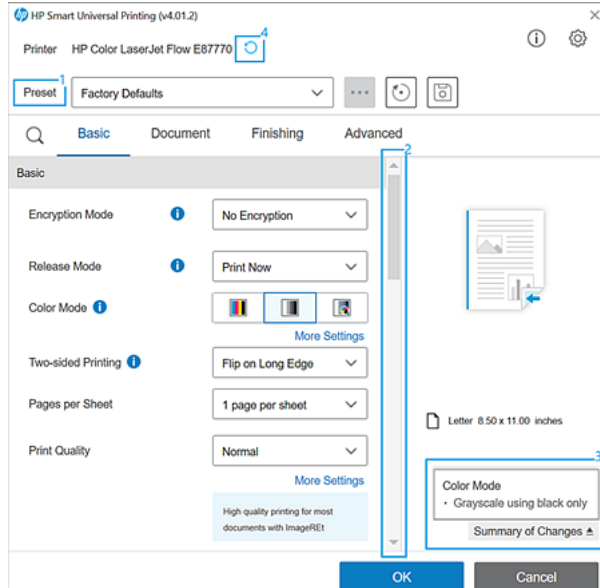
- V3 for 32-bit systems
- V3 for 64-bit systems
- V4 for 32-bit systems
- V4 for 64-bit systems
- V4 for ARM64 systems

By providing real-time print job and printer information, HP Smart UPD empowers you to resolve common problems and place fewer calls to the help desk. This feature can mean faster problem resolution, improved printer uptime, and increased productivity.

New streamlined user interface

The HP Smart UPD user interface has some changes from the older Printing Preferences screen.

Figure 1-1 HP Smart UPD user interface screen



Rather than all of the tabs across the top of the screen there are just three tabs by default: **Basic**, **Document**, and **Advanced**. An additional **Finishing** tab appears if the device supports it.

The old **Printing Shortcuts** tab had been replaced by the **Preset** tab (callout 1).

A scrollbar (callout 2) provides access to features that used to be spread across various tabs.

A **Summary of Changes** list has been added (callout 3), which shows any updates to the printing preferences for a specific job.

A **Refresh** button has been added (callout 4). This is a new feature in the HP Smart UPD that does not exist in the predecessor HP Universal Print Driver.

When you click this button, the driver initiates a bidirectional communication with the printer and receives the latest printer capabilities. If the expected function does not display, click the **Refresh** button.



NOTE:

- The **Refresh** button is only available for the V4 driver. It is not available in the V3 driver.
- The **Refresh** button is only available for an admin user.
- The **Refresh** button is only available when the print queue is connected to a physical printer via TCP/IP, or USB, or a WSD connection.
- The **Refresh** button is currently available only for architecture x64 and x86.

To function, the **Refresh** button requires the IPP protocol to be enabled. If you have IPP disabled, when you click the **Refresh** button you might see a message that states **Failed to retrieve Device Capabilities**.

Figure 1-2 Error message: Failed to retrieve Device Capabilities



Enable IPP protocol to use the Refresh button

Use the Embedded Web Server (EWS) of the printer to enable the IPP protocol so you can use the **Refresh** button. For information to access the EWS, see [Use the HP printer Embedded Web Server \(EWS\)](#).

1. In the EWS, select **Networking**.
2. Select **Internet Printing Protocol**.
3. Select **Status**.
4. Click to select **Internet Printing Protocol (IPP)**.
5. Click **Apply**.

About Application Analytics

When a user opens the **Printing Preferences** User Interface for the first time in standalone **Add Printer Wizard** installations, a prompt for **Applications Analytics** displays. This is for app analytics data collection purposes.


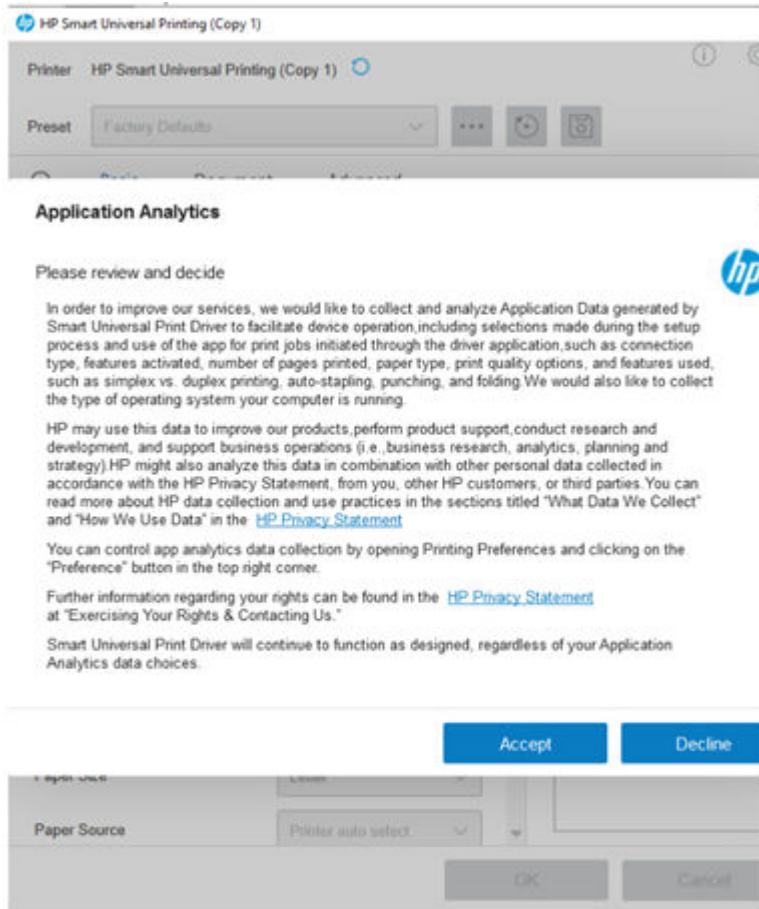
 **NOTE:** Starting with HP Smart UPD version 4.071.3204 and newer, the **Application Analytics** feature has been removed. Users will no longer receive prompts for Application Analytics.

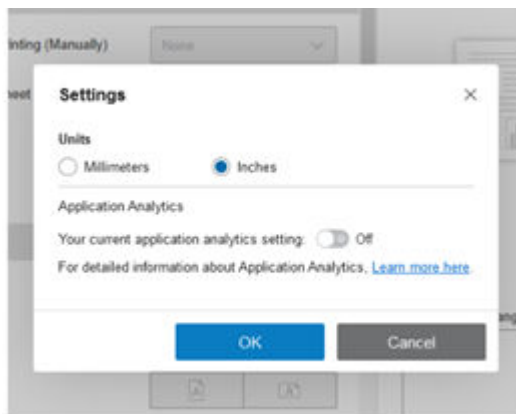
Figure 1-3 Accept or decline Application Analytics



If the user clicks **Accept**, the Application Analytics data is collected. If the user clicks **Decline**, the Application Analytics data is not collected.

At any point, the user can change the consent by opening Printer Preferences and clicking the settings icon.

Figure 1-4 Settings for HP Smart Universal Printing



NOTE:

- By default, Application Analytics is turned off. Application Analytics is turned on for app analytics data collection only if the user accepts.

- Application Analytics is only application for the V4 driver. It is not available in the V3 driver.
-

2 Planning an HP Smart UPD deployment

Review the options and recommendations for integrating HP Smart UPD into your printing environment.

Introduction

This chapter is designed to help you make strategic deployment decisions as you integrate HP Smart UPD into your printing environment.

The deployment of HP Smart UPD in your printing environment will be unique based on your specific objectives and current IT infrastructure. This chapter assumes that you have a basic understanding of the functionality of print drivers and the Windows printing architecture.

This chapter provides options and recommendations for customizing your deployment experience based on your current printing environment, printing goals, and objectives. Although your environment might vary slightly from the installation models described in this chapter, you should be able to use the recommendations in this guide to ensure that your deployment is smooth and has the least impact on your printing environment. In some cases, you might need to use more than one of the solutions described in this chapter.

This chapter contains the following sections:

- Five steps to a successful deployment
- Initiate and plan
- Communicate and train
- Create a pilot test environment
- Test and evaluate
- Deploy to production
- Close the project

Steps to ensure a successful deployment

Learn how to gain the maximum benefit and ensure a successful deployment of the HP Smart UPD.

⚠ CAUTION: The HP Smart UPD deployment requires major changes to your IT environment and should be treated accordingly. Make sure that you back up your print servers and print queues before beginning any installation.

A successful deployment of HP Smart UPD includes the following steps:

- **Initiate and plan**
- **Understand your printing requirements and environment**
- **Make key deployment decisions**

- **Communicate and train**
 - Obtain executive sponsorship
 - Provide training
- **Create a pilot test environment**
- **Test and evaluate**
- **Deploy to production**
- **Close the project**

Understand your printing requirements and environment

Follow these guidelines to understand the printing requirements and environment.

Determine the deployment objectives

Describe the objectives of HP Smart UPD deployment.

The purpose of this step is to obtain a clear and detailed picture of what the end result will be after the migration or upgrade. For more information, see [HP Smart UPD deployment worksheet on page 79](#).

Identify the stakeholders

The stakeholders include anyone who is impacted by HP Smart UPD deployment.

Identify the stakeholders for the deployment, which can include, but is not limited to, the following groups:

- End users
 - Will there be downtime?
 - What will change?
- IT staff
 - How much time is required?
 - What resources are required?
- Help Desk
 - What do they need to know?

Make an inventory

You must make an inventory of all the printers, print servers, print queue names, printing drivers, and IP addresses.

If you have print servers, you also need to determine whether all of the print queues are still active.

Review the printing driver considerations

Determine if HP Smart UPD is the correct solution for your printing environment.

Review the following printing driver considerations:

- HP Smart UPD is supported and tested only on the specific HP printers listed as supported by this printing driver. For non-supported HP printers or non-HP printers, HP recommends using the printing driver that the printer manufacturer supplied.
- HP Smart UPD supports most workgroup-class HP LaserJet printers, HP PageWide printers, MFPs, and a number of business Inkjet and OfficeJet printers. HP Smart UPD does not support some personal HP LaserJet and Inkjet printers.

List the preconfiguration, policy, and access requirements

If you plan on using custom default settings or restricting access to printers or printer capabilities, such as color printing, make a list of those requirements.

Verify the environment and network compatibility

Verify that HP Smart UPD is compatible with your current environment and network communication protocols.

Make sure that SNMP v1/v2 and IPP is enabled at a minimum as Read Only and that the IPP and SNMP protocols are not being filtered or blocked. HP Smart UPD requires these protocols to discover and communicate with printers. For more information about making sure that HP Smart UPD will work in your environment, see [HP Smart UPD deployment worksheet on page 79](#).

Baseline the system

Test all your applications (shrink-wrapped and homegrown) to make sure that they are compatible with HP Smart UPD.

Run performance and printing tests using typical documents.

Identify the risk management requirements

As with most projects, there are risks involved. Spend some time identifying these risks and how to mitigate any that might be serious.

The following are some suggestions:

- Make a backup of all your systems before making any modifications.
- Thoroughly test before going into production.
- Plan your activities for a time of low print server usage to minimize user impact.
- When migrating to a new server, keep the old server operational for a period of time in case you need to fall back to it.
- Do the initial testing on a test server before moving to a production server.

Key deployment decisions

Follow these guidelines to make key deployment decisions.

Choose an installation method

Multiple methods can be used to install the HP Smart Universal Printing Driver.

Installation methods include the following:

- Add Printer Wizard
- HP Smart Print Administrator Resource Kit (HP Smart PARK)
- HP Web Jetadmin
- Microsoft Print Management Console
- Custom scripts using Microsoft-approved tools

There are preconfiguration implications for each installation method. For additional guidance about which installation method is best for your environment, see [deployment flowcharts on page 84](#).

Estimate the time requirements

Make sure that you allow sufficient time to complete all of the steps.

The following are some things to consider:

- Planning
- Performing system backups
- Gathering tools and/or writing scripts
- Installing the server
- Installing the client
- Testing

The amount of time required to install HP Smart UPD depends on a number of factors, including the number of printing drivers, number of print queues on the server, and number of host clients receiving the installation either through PnP vended or the Add Printer Wizard. The installation of any printing driver can be significantly slower if there are other print drivers on the system.

The amount of time required to create a print queue using an existing printing driver depends on the processor speed and so on. For example, if you need to create 1000 print queues, this might easily take a long time, possibly more than an hour.

Communicate and train

HP strongly recommends that you have a communication plan and training materials in place before you deploy HP Smart UPD.

Develop a communication plan that helps overcome the objections and ease the fears of end users who might be worried about losing some of their printing functionality. Make sure that your end users and IT staff understand the benefits gained by using HP Smart UPD.

Develop training reference materials and identify resources to help your end users successfully transition from standard printing drivers to HP Smart UPD. Include information about how to identify printers through HP Smart UPD. Conduct a survey to gauge the satisfaction of your end users.

Create a pilot test environment

HP recommends that you create a test environment to use during HP Smart UPD implementation.

Select a part of your printing environment that will not affect many users to test the implementation prior to deploying HP Smart UPD to the entire printing environment. Make sure that this test environment (applications and printers) is representative of the overall printing environment.

Test and evaluate

Review the tasks to test and evaluate HP Smart UPD implementation.

Testing and evaluation tasks include the following:

- Measure against the performance baselines
- Determine if there are variances and if they warrant corrective action or a change
- Make any necessary entries in the configuration management log

Deploy to production

HP strongly recommends a phased approach for deploying HP Smart UPD.

Deploying in a phased manner across the IT environments helps to do the following:

- Minimize issues and provide valuable information about each type of environment
- Uncover issues that should be documented and considered prior to the next phase
- Increase the confidence of end users and stakeholders in the project

Close the project

Learn how to finalize and close HP Smart UPD deployment.

To close the project, perform the following tasks:

- Confirm that the work is done to requirements.
- Gain formal acceptance of the product.
- Hand off the completed product.

3 Install and Uninstall the HP Smart UPD

Learn how to install and uninstall HP Smart UPD.

Introduction

The method used to install HP Smart UPD determines the users' experience with HP Smart UPD and influences the extent of HP Smart UPD management.

HP Smart UPD behaves like a product-specific printing driver. During the installation, the driver is associated with a specific printer, creating a permanent instance of the printing driver.

This chapter provides detailed instructions for installing and uninstalling the HP Smart UPD.

Point and Print Default behavior changes

Windows updates released August 10, 2021 and newer will, by default, require administrative privilege to install drivers. Microsoft made this change in default behavior to address the risk in all Windows devices, including devices that do not use Point and Print or print functionality.

By default, non-administrator users will no longer be able to perform the following tasks using Point and Print without an elevation of privilege to administrator:


- Install new printers using drivers on a remote computer or server
- Update existing printer drivers using drivers from remote computer or server

For more information on how to address the behavior change by Microsoft, Print Administrators are requested to follow the workarounds or solutions provided in Microsoft support article [Manage new Point and Print default driver installation behavior \(CVE-2021-34481\)](#) (kb5005652).

Determine which version of HP Smart UPD is installed

Follow these steps to determine which version of HP Smart UPD is installed:


1. Use one of the following methods to open the **Devices and Printers** window:

- **Command line**—To open a command prompt, right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type the following command, and then click **OK**:

```
cmd
```


At the C:\ prompt, type the following command, and then press [Enter](#).

```
control printers
```

- **User interface**—This method is dependent on the operating system version. For Windows 10, right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type the following command, and then click **OK**:

```
control panel
```

In the **Control Panel** window, click **View devices and printers** under **Hardware and Sound**.

2. Right-click the printer (print queue), and then select **Printing preferences**.
3. Click the information icon  located in the upper-right side of the dialog box.

Connect clients to servers using v4 drivers

Before a client makes a connection to the server, you can preinstall the same version of HP Smart UPD on the client using the same name as HP Smart UPD that is installed on the server. The driver is automatically placed in the Windows driver store.

If needed, you can install a 32-bit printing driver on a 32-bit client. However, HP Smart UPD must be the same model printing driver with the same name and version.

Microsoft operating system methods

HP supports the following available Microsoft methods for installing or upgrading HP Smart UPD:

- **Add Printer Wizard**
- **Add Printer Driver Wizard**
- **Print Management Console**
- **PrintUI**
- **PnPUtil utility**

Add Printer Wizard

Use this wizard to install a new printer. See the section in this document *Install using the Add Printer Wizard in Windows*.

To access this wizard from the **Printers** folder, click **Add a printer**.

Add Printer Driver Wizard

Use this wizard to create a new printer and add the printing driver version to the Windows driver store.

To access this wizard from the **Printers** folder, select a printer name, and then click **Print server properties**. In the dialog box, click the **Drivers** tab, and then click **Add**.


Print Management Console

Use the Print Management Console to install, view, and manage all of the printers in your organization. For more information, see the Microsoft documentation.

To access the Print Management Console from the **Control Panel** window, click **System and Security**, and then click **Administrative Tools**. In the right panel, double-click **Print Management**.

PrintUI


Use this UI to perform common print administration tasks from a command prompt or script, including adding printers, deleting printers, adding host connections, and removing host connections.

 **NOTE:** The PRINTUI.DLL is a Microsoft executable file that contains the functions used by the printer configuration dialog boxes. For more information, see the Microsoft document [rundll32 printui.dll,PrintUIEntry](#). If you have problems using PrintUI, contact Microsoft for support.

PnPUtil utility

Administrators can use this utility (PNPUTIL.EXE), a Microsoft command-line tool, to add or remove the HP Smart UPD from the Windows driver store including the following tasks:

- Add a driver package to the driver store
- Install a driver package on the computer
- Delete a driver package from the driver store

 **NOTE:** The PnPUtil utility adds HP Smart UPD to the driver store, but does not install the printing driver or create a printer.


The advantage of adding HP Smart UPD to the driver store is that the driver is available for Plug and Play USB-connected devices and users without administrator rights can create print queues.

For more information, see the Microsoft document [PnPUtil Command Syntax](#). If you have problems using the PnPUtil utility, contact Microsoft for support.


Install the HP Smart UPD

When installed, HP Smart UPD behaves as a product-specific printing driver, associated to a specific printer with a permanent instance of the printing driver in the **Printers** folder.

There are several methods that can be used to install or upgrade the HP Smart UPD on a Windows client/server.

 **NOTE:** You must have Print Administrator rights to install a print driver. The steps in this document use Microsoft Windows 10. Other Windows operating systems might be slightly different.

- Install using the Add Printer Wizard in Windows
- Install using a Point and Print connection
- Install using HP Web Jetadmin
- Install using a USB connection

 **NOTE:** The **HP SUPD Installer** is included as part of a driver package available on hp.com. For HP Smart UPD version 4.071.3204 and newer, the driver package will be available in zip format. The driver package can be downloaded to launch the installer or manually launch the SUPDInstaller.exe from the extracted package.

For more information, refer to the *HP Smart PARK User Guide* on the [Manuals page](#).

The HP Smart PARK is a collection of tools, scripts, and documents to help print administrators install, deploy, configure and manage the HP Smart UPD and the associated print queues.

Launch the HP Smart UPD using the installer

To launch the HP Smart UPD using the installer package, follow these steps.



NOTE: Starting with HP Smart UPD version 4.07.1.3204 and newer, the driver package will be available in a .zip format.

1. Go to hp.com/go/smartupd, and then download the HP Smart Universal Printing Driver package.
2. Unzip the driver package.
3. Open the installer folder.
4. Double-click the SUPDInstaller.exe file to launch the installer.
5. After the installer opens, accept the license agreement and click **Next**.
6. Select the mode of installation and follow the remaining prompts to complete the installation.

Install using the Add Printer Wizard

Follow these steps to use the Windows Add Printer Wizard to install the HP Smart UPD on a Windows client/server.



NOTE: The Windows Add Printer Wizard does not provide any custom options. If you use this method to install HP Smart UPD, the driver installs so that the user has common printing functionality.

1. Open **Devices and Printers**.
2. Click **Add a printer**.
3. Click **The printer that I want isn't listed**.

CAUTION: If you select a device from this list, the printer might be installed using a different printing driver and using WSD.

4. Select the **Add a printer using a TCP/IP address or hostname** option and click **Next**.
5. Create the port.
 - a. From the **Device type** drop-down list, select **TCP/IP Device**.
 - b. In the **Hostname or IP Address** field, type the hostname or IP address for the printer.
 - c. In the **Port name** field, type the port name for the printer or use the default.




NOTE: Perform a refresh if you are using the existing port.

- d. Clear the **Query the printer and automatically select the driver to use** check box.



CAUTION: If you do not clear this check box, a different printing driver might be loaded instead of HP Smart UPD.

- e. Click **Next**.

6. Install the driver.
 - a. Click **Have Disk**, browse to the location of the printing driver, and then click **Open**.
 - b. Select the *.INF file or use the default *.INF file, click **Open**, and then click **OK**.
 - c. Select the versioned printing driver (for example, HP Smart Universal Printing (X,Y,Z), and then click **Next**.
 - d. If asked, select the **Replace the current driver** option, and then click **Next**.
 - e. In the **Printer Name** field, type a name for the printer, and then click **Next**.
 7. After the installation is complete, configure **Printer Sharing**, and then click **Next**.
 8. Click **Print a test page**.
-
-  **NOTE:** If this is the V3 version of HP Smart UPD, the message **Validating the selected printer** appears to configure the printing driver through bidi.
-
9. Click **Close** to close the wizard.
 10. Click **Finish** to complete the setup.


Install using a Point and Print connection

The Point and Print install method on a Windows client/server depends on the type of driver (V3 or V4).

V3 drivers

For a V3 driver, the main difference is that the driver is automatically vended from the server and does not need to be prestaged.

To install the a V3 driver using a Point and Print connection, vend the HP Smart UPD from a server to clients that are connected to a shared printer, and then perform either a new printer installation or a printing driver upgrade.

 **NOTE:** After the printing driver is installed on the Windows server, it behaves like any other installed driver. The user prints to a statically bound port established on the server.

When using the V3 version of HP Smart UPD, HP Smart UPD automatically downloads to the client PC through Point and Print when the client PC connects to a shared printer.

V4 drivers

First prestage (install a driver in the driver store) of the same name as the driver on the server prior to connecting to the server.

Version 4 drivers are not downloaded from the print server. You must prestage the driver on the client, or use the Microsoft-enhanced Point and Print driver.

The steps in the following sections walk you through how to configure a server and connect clients for the V4 printing driver.

32-bit vs 64-bit

Vending 32-bit printing drivers is supported from all 64-bit server OSs.

- To vend a printing driver from a **32-bit server to a 64-bit client**, the 64-bit driver must be installed on the server.

Vending 64-bit printing drivers is supported from all 32-bit OSs that support 64-bit alternate printing drivers.

- To vend a printing driver from a **64-bit server to a 32-bit client**, the 32-bit printing driver must be installed on the server.

The drivers installed additionally to vend to a client should have the same name and version.

Install HP Smart UPD using the Add Printer Wizard over TCP/IP

Follow these steps to install the HP Smart UPD using the Add Printer Wizard over TCP/IP.

1. Download the HP Smart UPD package.
2. Navigate to the location where you saved the HP Smart UPD package.
 - a. Log on to Windows Server 2016 with the admin account.
 - b. At the bottom of the screen, click the **File Folder** icon.
 - c. Select the C: drive.
 - d. Open the directory where you saved the HP Smart UPD package.
 - e. Make a note of the INF file name: for example, HPONEDRIVER_V4_X64.INF.
 - f. Note the structure of the files and that the INSTALL.EXE file is not listed.
 - g. Close the folder.
3. Open **Devices and printers**.
4. Click **Add a printer**.
5. Click **The printer that I want isn't listed**.
6. Select the **Add a printer using a TCP/IP address or hostname** option, and then click **Next**.
7. Create the port.
 - a. From the **Device type** drop-down list, select **TCP/IP Device**.
 - b. Clear the **Query the printer and automatically select the driver to use** check box.
 - c. In the **Hostname or IP address** field, enter the IP address for the printer.
 - d. Click **Next**.
8. Install the driver.
 - a. Click **Have Disk**, and then browse to the folder containing the HP Smart UPD driver.
 - b. Click **HPOneDriver_V4_x64.inf**, click **Open**, and then click **OK**.
 - c. Select the driver with the version number, HP Smart Universal Printing (vX.Y.Z), and then click **Next**.
 - d. Use the default name for the printer, and then click **Next**.

9. Type a share name that is easy to remember, such as `Test1`, and then click **Next**.
10. To make this the default printer, select the check box.
11. Print a test page.
 - a. Click **Print a test page**.
 - b. In the dialog box that opens, click **Close**.
 - c. Verify that a test page printed.
 - d. Click **Finish**.
12. Close the **Devices and Printers** window.
13. Open **Print Management** preferences.
 - a. In the Windows search field, search for and select **Run**.
 - b. Type `PRINTMANAGEMENT.MSC`, and then click **OK**.
 - c. Open **Properties** and click **Print Servers**.
 - d. Select the name of the print server, and then select **Printers**.
 - e. Right-click the printer you just installed, and then select **Properties**.
 - f. Click **Preferences**.
14. Configure the driver.
 - a. Scroll through the list of features to see the default settings.
 - b. To access a specific group of settings, click **Basic**, **Document**, **Finishing**, and **Advanced**.
 - c. Click **Cancel** or **OK** to close the **Preferences**.
 - d. Click the **Device Settings** tab, and then scroll through the **Installable Options**.
 - e. Note that Automatic Configuration is not listed.
 - f. Click **Cancel** or **OK** to close the **Printer properties**.
 - g. Close the **Print Management** window.

Find where the V4 printing drivers are installed

Learn how to find where the V4 printing drivers are installed.


1. Log on to Windows Server 2016 with the admin account.
2. Open the **Devices and Printers** dialog box.
3. Select the HP Smart UPD print queue you just installed.
4. At the top of the dialog box, click **Print server properties**.
5. Click the **Drivers** tab.
6. Select HP Smart Universal Printing or HP Smart Universal Printing (v.X.Y.Z), and then click **Properties**.

7. Note the driver path and the name of the data file - HPONEDRIVER - SUPD.GPD.
8. Click **Close**, and then click **Cancel**.
9. In Windows File Explorer, select the driver path from Step 7.
C:\Windows\System32\DriverStore\FileRepository
10. Scroll down to the folder that begins with the driver path noted in Step 7.
 - V4 printing driver files are stored in the File Repository by creating sub-folders that begin with the name of the inf used.
 - Windows appends a GUID to the folder name to make sure that there are no file name conflicts.
 - Because the v4 printing drivers are loaded into and run directly from the driver store, copying a *.CFM or *.CFG preconfiguration file in the C:\Windows\System32\spool\drivers\x64\3 (for x64 machines) directory cannot be used to preconfigure the V4 printing drivers.
11. Double-click the folder to open it, and then open the amd64, x64, or x86 sub-folder.
 - Note that the *.GPD file noted in step 7 is listed.
 - This folder is where platform-specific files are stored.
12. Close Windows File Explorer.

Verify the IP address of the server and the share name

Learn how to verify the IP address of the server and the share name.

Follow these steps to verify the IP address of the server and the share name:


1. Log on to Windows Server 2016 with the admin account.
2. Open **Devices and Printers**.
3. Right-click the HP Smart UPD print queue, and then click **Printer properties**.
4. Click the **Sharing** tab, and then make a note of the **Share name** (for example, Test1).
5. Write down the share name. You will use it later.
6. Click **Cancel** or **OK**.
7. Minimize the **Devices and Printers** dialog box.
8. Click the **Start**  icon in the lower-left corner of the screen, and then select **Command Prompt (Admin)**.
9. Type `ipconfig`, and then press **Enter**.
10. Note the IP address of your print server.
11. Write this down as you will need to use it later.
12. Minimize the **Command Prompt** dialog box.

Connect to the print server

Learn how to connect to the print server.

1. Log on to Windows 10 with the admin account.
2. Connect to the print server.
 - a. In the Windows search field, search for and select **Run**.
 - b. In the **Open** field, type `\\<print server IP address>\<share name>` (where `<print server IP address>` is the IP address you wrote down earlier and `<share name>` is the Share name you wrote down earlier).
 - c. Click **OK**.
 - d. Type the user name and password for the server, and then click **OK**.
 - e. Note that the server is connecting to the HP Smart UPD queue you created on the Windows Server 2016 PC.
 - f. When the connection is complete, minimize the driver window.
3. Print a test page.
 - a. Open a file that you want to print.
 - b. Click **File**, and then click **Print**.
 - c. Select the printer you just connected to HP Smart UPD.
 - d. Click **Printer Properties** or **Properties**.
 - e. Note that the UI does not match the HP Smart UPD and features such as stapling are not listed.
 - f. Click **OK**, and then click **Print**.
 - g. Verify that the job prints correctly.
 - h. Close the document.
4. Close the **File Explorer** window.
5. Open **Devices and Printers**.
6. Right-click the printer you just installed, and then select **Printer properties**.
7. Click the **Advanced** tab, and note that the Microsoft-enhanced Point and Print driver is listed.

Version 4 drivers are **not** downloaded from the print server. The client must find a suitable driver in the local client driver store or use the Microsoft-enhanced Point and Print driver.

 **CAUTION:** Never use the **New Driver** option on the **Advanced** tab to update the driver. This method only works with a similar driver that has the same PDL and the same version or one version earlier. This method usually results in corrupting the print queue.

8. Click **OK** or **Cancel**.
9. Right-click the print queue, and then select **Remove device**.
10. Click **Yes**.
11. Close the **Device and Printers** window.

Install the printing driver on the client and then connect to the print server

Learn how to install the printing driver on the client and then connect to the print server.

Follow these steps to install the printing driver on the client and then connect to the print server:

1. Log on to the client (for example, Windows 10 x64) with the admin account.
2. Install the driver.
 - a. Open **Devices and Printers**.
 - b. Select a print queue, and then click **Print server properties** at the top of the window.
 - c. Select the **Drivers** tab.
 - d. Click **Add**.
 - e. Click **Next**.
 - f. Select the architecture of the client (for example, **x64**), and make sure the other options are not selected.
 - g. Click **Next**.
 - h. Click **Have Disk**, and then browse to the folder containing the HP Smart UPD driver.
 - i. Click the INF file (for example, HPONEDRIVER_V4_X64.INF), and then click **Open**.
 - j. Click **OK**.
 - k. Select the driver with the version number, HP Smart Universal Printing (v.X.Y.Z), and then click **Next**.
 - l. Click **Finish**.
 - m. If a message displays asking **Do you want to allow this app to make changes to your device?**, click **Yes**.
 - n. Click **Close**.
3. Close the **Devices and Printers** window.
4. Connect to the print server.
 - a. In the Windows search field, search for and select **Run**.
 - b. In the search window, type `\\<print server IP address>\<share name>` (where `<print server IP address>` is the IP address you wrote down earlier and `<share name>` is the share name you wrote down earlier).
 - c. Click **OK**.
 - d. If prompted, enter the user name and password for the server, and then click **OK**.
 - e. Note that it is connecting to the HP Smart UPD queue you created on the Windows Server 2016 PC.
 - f. When the connection is complete, close the driver window.
5. Print a test page.

- a. Open the file that you want to print.
 - b. Click **File**, and then click **Print**.
 - c. Select the printer you just connected to (HP Smart Universal Printing (v.X.Y.Z)).
 - d. Click **Printer Properties** or **Properties**.
 - e. Note that the UI matches the HP Smart UPD and the finishing features, such as stapling, are now listed.
 - f. Click **OK**, and then click **Print**.
 - g. Verify that the job prints correctly.
 - h. Close the document.
6. Close the **File Explorer** window.
 7. Open **Devices and Printers**.
 8. Right-click the printer you just installed, and then select **Printer properties**.
 9. Click the **Advanced** tab, and note that the HP Smart UPD (HP Smart Universal Printing (v.X.Y.Z)) is the printing driver listed.
 10. Click **OK** or **Cancel**.
 11. Close the **Device and Printers** window.

Install using HP Web Jetadmin

Administrators can use the Print management features in HP Web Jetadmin to create, edit, and delete printers, and to install or update printing drivers.


To install HP Smart UPD on a Windows client/server, you can use the Print Queue Creation feature in HP Web Jetadmin on some operating systems.

For more information, go to www.hp.com/go/wja.

Pre-stage and install the HP Smart UPD for USB-connected printers

To prestage the driver infs and install the HP Smart UPD on a USB-connected printer(s), follow these steps.

 **IMPORTANT:** Do NOT connect the USB cable until prompted in the steps below.

 **NOTE:** Starting with HP Smart UPD version 4.071.3204 and newer, the driver package is available in a .zip format.

1. Go to hp.com/go/smartupd, and then download the HP Smart Universal Printing Driver for USB.
2. Unzip the package.
3. To pre-stage all the driver infs, run the "Setup.bat" file in admin mode.
4. After the driver infs are prestaged, double-click the **HPSmartDeviceAgentBase.msi** file.

5. Connect the USB cable between the printer and the PC.

The installation starts automatically and a status window displays in the lower right-hand corner indicating that the software is installing.

6. Wait for the installation to complete.

When complete, the printer displays in the **Devices and Printers** folder.

Create a new USB Plug and Play instance in the printers folder for USB connections

HP Smart UPD supports USB Plug and Play, which is not an installation method for the driver.

USB Plug and Play is a method for an already installed printing driver to create a new printer instance in the **Printers** folder.


HP Smart UPD can be installed on a Windows client/server for use with USB Plug and Play products as either a software first, or a hardware first, installation.

Windows updates and USB connectivity

When a USB device is connected, Windows always searches for Windows Updates. You can disable this feature and only use previously installed printing drivers when connecting a USB device. This will speed up the installation time.

Disable the option to obtain driver software from Windows Update by default (optional)

Follow these steps to disable the Windows Update feature:

1. Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Search**.
2. Type `change device installation settings`.
3. In the search results, click the icon for **Change device installation settings**.
4. In the **Device installation settings** dialog box, select the **No (your device might not work as expected)** option.
5. Click **Save Changes**.

Printing driver selection criteria

Multiple versions of HP Smart UPD might be prestaged when a Plug and Play event is initiated.

When the operating system detects multiple compatible printing drivers, it uses the following criteria for selecting the printing driver to use:

1. A WHQL-certified printing driver has priority over all other printing drivers. If all the available printing drivers are WHQL certified, the operating system considers the next criteria.
2. Microsoft 7 and later operating systems evaluate the printing driver based on the available features. The printing driver with the most features is selected. If all the printing drivers are deemed equal, the operating system considers the next criteria.
3. The operating system selects the printing driver with the most current date.

Option 1: Preinstall the driver using the Add Printer Driver Wizard via USB

Follow these steps to install HP Smart UPD using a USB cable connection.

⚠ CAUTION: Do NOT connect the USB cable between the printer and the PC prior until prompted.

1. Open the **Devices and Printers**.
2. Select a print queue.
3. Select **Printer server properties**.
4. Select the **Drivers** tab.
5. Load the driver.

- a. Click **Add**.

The **Add Printer Driver Wizard** opens.

- b. Click **Next**.
- c. Select the client type.

⚠ CAUTION: Select only one option.

- To install a 64-bit driver on a 64-bit client, select the **x64** check box.
- To install a 32-bit driver on a 32-bit client, select the **x86** check box.
- To install an ARM driver on an ARM64 client, select the **ARM64** check box.

- d. Click **Next**.

- e. Click **Have Disk**.

- f. Click **Browse**.

The **Locate File** dialog box displays.

- g. Browse to the location of the printing driver, select the appropriate *.INF file, and then click **Open**.

- h. On the **Install From Disk** dialog box, click **OK**.

- i. Select the printing driver.

- j. Click **Next**.

- k. Click **Finish**.

6. Click **Close** to close the wizard.

7. Wait for the printer to arrive at a **Ready** state.

8. Connect the USB cable between the printer and the PC.

The installation will start automatically. A window displays in the lower right-hand corner that indicates the software is installing.

9. Wait for the installation to complete.

When complete, the printer displays in the **Devices and Printers** folder.

Option 2: Preinstall HP Smart UPD using the PnPUtil utility


You can use the Microsoft PnPUtil utility to prestage HP Smart UPD.

Follow these steps to preinstall HP Smart UPD by using the PnPUtil utility:

1. Go to hp.com/go/smartupd, and then download the HP Smart Universal Printing Driver.



NOTE: For HP Smart UPD version 4.071.3204 and newer, the driver package will be available in zip format.

2. Click **Unzip**.
3. Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Search**.
4. Type `cmd`.
5. In the search results, right-click the icon for **Command Prompt**, and then click **Run as administrator**.
6. To preinstall all the printing drivers (such as the HP Smart UPD printing driver), type the following command at the **C:** prompt, and then press **Enter**:

```
pnputil -a "<driver folder path>\*.inf"
```

For example: `pnputil -a "C:\Downloads\folderpath*.inf"`

For more information about the PnPUtil utility, see the Microsoft document [PnPUtil](#).
7. To close the command-line window, type `exit`, and then press **Enter**.
8. Connect the product to the computer using a USB cable. A window displays in the lower-right corner that indicates the software is installing. The product is listed in the **Devices and Printers** folder.



NOTE: Microsoft uses a ranking process when selecting a printing driver during a PnP USB installation.

If there is a conflict where a different printing driver might be installed, you can use the `RemovePNPDrivers` utility to search for HP Plug and Play printing driver files in the Windows driver store. An option is provided to remove these staged printing driver files. Currently installed printers are not affected by this utility.

For more information about using the `RemovePNPDrivers` utility, see the video [Staging Drivers for Plug and Play Using HP RemovePNPDrivers Utility](#).

Only the default location for staged printing driver files on Windows (`%SYSTEMROOT%\inf`) is searched for printing driver files.

Option 3: Hardware first installation

In a hardware first installation, a USB cable is connected to the PC first, and then HP Smart UPD is installed. When the operating system detects that no printing driver is installed for the connected product, it prompts for a disk or a location from which to install the printing driver. The user must be logged in to an account with administrator privileges to install the printing driver.

Follow these steps to perform a hardware first installation:

1. If you have not downloaded HP Smart UPD installation files, download them from hp.com/go/smartupd and unzip them.
2. Plug in the product USB cable.
3. When prompted, browse to the location where you downloaded and unzipped HP Smart UPD.



NOTE: If the system finds a compatible driver in the Windows driver store and/or on Windows Update, the system might not prompt for a disk.

Queue name for HP Smart UPD as a Windows print driver

The queue name for the HP Smart UPD driver varies, depending on how it is installed.

If the HP Smart UPD driver is installed using TCP/IP connectivity, the Windows system will set the driver name as the queue name. So the name of the installed print queue will be "HP Smart Universal Printing."

If the HP Smart UPD driver is installed using USB or WSD connectivity, the Windows system will set the device name as the queue name. So the name of the installed print queue will be the printer model name.

Uninstall the HP Smart UPD

HP recommends using Microsoft operating system utilities to remove HP Smart UPD from the Microsoft Windows operating system. This is the safest method to uninstall printing drivers. HP does not recommend manually editing the Windows Registry entries or manually deleting printing driver files. This can destabilize the printing environment and is not supported.

HP recommends the following procedure to uninstall HP Smart UPD:

1. Make sure no one is printing to any of the print queues associated with the printing driver you are uninstalling.
2. Open the **Devices and Printers** dialog box.
3. Right-click the print queues associated with the printing driver you are uninstalling, and then click **Remove**.
4. Verify that the print queues were removed.
5. Right-click a queue, and then click **Print server properties**.
6. Click the **Drivers** tab.
7. Select HP Smart UPD to be uninstalled, and then click **Remove**.




NOTE: If Windows displays an error message that the driver is in use, use one of the following methods to stop and restart the print spooler:

- Run the command prompt with administrator rights. To stop the print spooler, type the following command, and then pressing **Enter**:

```
net stop spooler
```

Restart the print spooler by typing the following command, and then pressing **Enter**:

```
net start spooler
```

- To open the **Services** applet in **Control Panel**, right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type the following command, and then click **OK**:

```
services.msc
```

In the **Services** window, right-click **Print Spooler**, and then click **Restart**.

After the print spooler is restarted, repeat the previous steps to uninstall HP Smart UPD.

4 HP Smart UPD features

Review the features of HP Smart UPD.

Basic features

The table below describes the basic features of HP Smart UPD.

Table 4-1 Basic Features

Feature	Function
Encryption Mode	<p>Encryption Mode enables users to select if the print job should be sent with or without encryption using one of the following two options:</p> <ul style="list-style-type: none"> • No Encryption - Sent a print job with no encryption. • Secure Encryption - Encrypt a print job before sending to the printer.
Release Mode	<p>Enables the printer to either print a print job immediately, or to store a print job on the printer's hard drive or in its memory.</p> <p>The stored job can be printed at any time from the printer control panel, eliminating the need to send commonly printed jobs or forms from a user PC each time they are printed.</p> <ul style="list-style-type: none"> • Print Now - Sends print jobs to the printer and prints them immediately. If Secure Encryption is selected as the Encryption Mode, the job will be encrypted using the printer's certificate. • Release at printer - Saves the print job on the printer as a stored job, No PIN or Password is needed to retrieve the job. • PIN release - Saves the print job on the printer as a stored job. Enter a 4-digit PIN in the Enter PIN and Confirm PIN fields. The PIN must be entered at the printer control panel to print the stored job. • Password Release - Allows users to store the job on the printer as an encrypted print job. Enter a print job password in the Enter Password and Confirm Password fields. The password must be entered at the printer control panel to print the personal or stored job. • Smart Card Release - Allows users to store the job on the printer as an encrypted print job. The Job will be encrypted using the Smart Card inserted at the host machine. The same card needs to be swiped at the printer to release the job. <p>For PIN released files, the printed document is processed and converted to printer-ready bits as it is stored on the printer.</p> <p>For Password Released files, the file is encrypted and stored on the printer. The first time the file is printed, the job is unencrypted and converted to print-ready bits and then printed.</p> <p>This difference between the options is why it might appear to take longer to store a job when PIN released versus Password Release is selected. This difference is also why it might appear to take longer to print an encrypted job versus printing a PIN-released job.</p> <p>NOTE: The following Job storage features are supported in the HP Universal Print Driver but are NOT supported in the Smart Universal Printing Driver:</p> <ul style="list-style-type: none"> • Proof and Hold - Alternative is the PIN released option. • Quick Copy - No alternative due to very low usage.

Table 4-1 Basic Features (continued)





Feature	Function
<p>Color Mode</p>	<p>Configures HP Smart UPD to print text and graphics in color or grayscale on color printers.</p> <ul style="list-style-type: none"> •  (Color)—Select this option to print in color on color devices. This is the default. •  (Grayscale using black only)—Select this option to print in black and white on color devices using Black Only. •  (Grayscale using CMYK black)—Select this option to print in black and white on color devices using CMYK Grayscale. <p>When printing in grayscale, the printing driver prints all the text and graphics as black regardless of the color of the text and graphics in the original document. Color text is printed as black. White text remains white. White text is a reliable method of printing reverse typeface against a dark background.</p> <p>TIP: You can configure the Print All Text as Black setting on the Advanced tab, and the RGB Color Selection setting by clicking the More Settings link located below the Color Mode setting. For more information about these settings, see the RGB Color Selection description in the <i>Advanced features</i> table.</p>
<p>Two-sided Printing</p>	<p>Enables printing on two sides of a sheet of paper.</p> <p>The choices are Flip on Long Edge and Flip on Short Edge. The default is None.</p> <p>Two-sided Printing is available when the following conditions exist:</p> <ul style="list-style-type: none"> • Media Type on the Document tab is set to any paper type except for the following types: <ul style="list-style-type: none"> – Labels – Monochrome Laser Transparency – Envelopes • Paper Size on the Document tab is set to any paper size except for the following sizes: <ul style="list-style-type: none"> – Statement, 3x5, 4x6, 5x7, 5x8, A6, B6, 10x15 cm, Japanese Postcard – Envelope #10, Envelope #9, Envelope Monarch, Envelope B5, Envelope C5, Envelope C6, Envelope DL
<p>Smart Duplexing</p>	<p>Increases printing performance by preventing one-page print jobs or single-sided pages of a duplexed print job from going through the duplexing unit even when the duplexing feature was selected in the driver.</p> <p>Most printer models that support two-sided printing (duplexing) support smart duplexing.</p> <p>Smart duplexing is not supported on paper types that cannot be printed on both sides (such as labels, transparencies, envelopes, pre-punched, pre-printed, letterhead, or card stock).</p> <p>When Media Type is set to Unspecified, the Smart Duplexing feature is disabled.</p>

Table 4-1 Basic Features (continued)

Feature	Function
<p>Pages per Sheet</p>	<p>Specifies the number of pages to print on a single sheet of paper. If more than one page is printed per sheet, the pages appear smaller and are arranged on the sheet in the order that they would otherwise be printed.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> • 1 page per sheet (the default) • 2 pages per sheet • 4 pages per sheet • 6 pages per sheet • 9 pages per sheet • 16 pages per sheet <p>Figure 4-1 Examples of Pages per Sheet settings</p> 
<p>Page Layout</p>	<p>Specifies the order and placement of pages on a sheet when more than one page is printed per sheet. This feature is available only when the Pages per Sheet setting is greater than 1.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> • Right, then Down • Down, then Right • Left, then Down • Down, then Left
<p>Page Border</p>	<p>Places a line around each page image on a printed sheet to help visually define the borders of each logical page. This feature is available only when the Pages per Sheet setting is greater than 1.</p>
<p>Print Quality</p>	<p>This list is not exhaustive as it might change through time. The options for Print Quality might vary depending on the printer model. Refer to the options listed for your printer.</p> <ul style="list-style-type: none"> • Standard—Professional quality, every day, at normal speed • Quick Draft—Fast preview of documents, lower resolution • Detailed—1200x1200 for line art, architectural drawings, fingerprints • Premium—Enhanced-quality printing for photos, presentations, and brochures.




Color features

Learn about the Color features for HP Smart UPD, including **Color Mode**.

Color Mode

Color Mode is available on the **Basic** tab. The following table describes the settings that are available from the **Color Mode** drop-down list.

Table 4-2 Color Mode settings

Setting	Description
 (Color)	Select this option to configure HP Smart UPD to print in color on color printers.
 (Grayscale using black only)	Select this option to configure HP Smart UPD to print in black and white on color printers using Black Only.
 (Grayscale using CMYK black)	Select this option to configure HP Smart UPD to print in black and white on color printers using CMYK Grayscale.

Document features

The table below describes the document features of HP Smart UPD.

Table 4-3 Document features



Feature	Function
Copy Count	<p>Specifies the number of copies to print. Valid entries are from 1 to 9999. The default is 1.</p> <p>This setting is useful for software programs that do not provide a copy count. If a copy count is available in the software program, set the copy count in the software program.</p> <p>In most cases, the software program and the printing driver communicate, so that the number of copies set in one location (such as the program) appear in the other (such as the printing driver). For some programs, this communication does not take place, and the copies values are treated independently. For these programs, setting 10 copies in the program and then setting 10 copies in the printing driver results in 100 copies (10 x 10) being printed.</p>
Collate	<p>Collates (collects and combines in the proper order) the printed copies.</p> <p>When Copy Count is set to more than 1, the Collate option becomes available.</p> <p>Most current software programs support the collating feature in the print dialog box or through the page settings in the software program.</p>
Orientation	<p>Defines the layout of the image on the page. This setting does not affect the way that the paper feeds into the printer.</p> <ul style="list-style-type: none"> (Portrait)—The top edge of the document is the shorter edge of the paper (the default orientation). (Landscape)—The top edge of the document is the longer edge of the paper. <p>NOTE: Most software programs establish the orientation for the printed page. The page orientation in the printing driver is useful only for the software programs that do not set an orientation.</p>

Table 4-3 Document features (continued)


Feature	Function
Rotate by 180 degrees	<p>Creates a landscape or portrait orientation in which the image is rotated 180 degrees. This setting is useful for printing prepunched paper.</p> <p>If you set the Rotate by 180 degrees option to On, the document preview image rotates by 180 degrees.</p>
Paper Size	<p>Specifies the paper size for the printed document. The drop-down list includes all the supported paper sizes for the specific printer.</p> <p>To toggle between millimeters and inches for the unit of measurement, click the settings icon  in the upper-right corner.</p> <p>Paper-size settings in most software programs override the settings in the printing driver.</p> <p>Use the printing driver to set the paper size only when you are printing from software programs that do not include a paper-size setting, such as Notepad, or when you are producing a book or a booklet.</p> <p>If you change the print-driver setting to a paper size that is not currently loaded in the printer, a control-panel message appears prompting you to load the paper size or select another tray.</p> <p>To create a custom paper size, scroll to the bottom of the list of paper sizes, and select + Custom.</p> <p>NOTE: Certain software programs can override the size command and specify different paper sizes within a single document.</p>
Paper Source	<p>Specifies the source tray to use for printing a document. The list of source trays varies depending on the printer model and accessories that are installed. Any optional source trays that are installed through the Device Settings tab are also in the list.</p> <p>The Paper Source drop-down list can contain the following options, depending on what is installed on the printer:</p> <ul style="list-style-type: none"> • Printer auto select <p>This is the default. The printer uses the source tray that supports the paper size and type that you selected.</p> • Manual Feed • Tray 1 through Tray X <p>If you select a source tray other than Printer auto select, make sure that the correct paper size and type is loaded in the source tray.</p>
Media Type	<p>Provides a list of all of the paper types that the printer supports. The default is Unspecified.</p> <p>If you select a setting other than the default, make sure that the correct paper type is loaded in the tray that you selected from the Paper Source drop-down list.</p> <p>When you change the print-driver setting to a paper type that is not currently loaded in the printer, a control-panel message appears prompting you to load the paper type or select another tray.</p> <p>NOTE: You cannot manually add custom paper types through the printing driver.</p>

Table 4-3 Document features (continued)

Feature	Function
Booklet Printing	<p>Specifies the binding options for booklet printing as either left or right binding for the print job. The options that are available are based on the current paper size. The default is Off.</p> <p>Enabling Booklet Printing automatically configures Two-sided Printing, disables some features (such as Special Pages and Image Shift), and modifies the available selections on other features (such as limiting the Staple options to None or Fold and Stitch).</p> <p>NOTE: Pages per Sheet and Booklet Printing can be used together. For example, when Booklet Printing is enabled, the default for Pages per Sheet is "1 page per sheet." With this setting, each side of booklet prints one page from source document. If Pages per Sheet is modified to "2 pages per sheet," each side of booklet prints 2 pages of the source document.</p>

Table 4-3 Document features (continued)


Feature	Function
<p>Scale/Resize</p>	<p>Specifies whether the document is scaled or resized to fit the target paper.</p> <ul style="list-style-type: none"> <p>Print actual size—Prints the document without changing the document size. This is the default.</p> <p>Print document on—Prints a document that is formatted for one paper size on a different paper size, with or without scaling the image to fit the new paper size.</p> <p>The drop-down list shows the available paper sizes. The list contains all of the standard paper sizes that the selected paper source supports and any custom sizes that were created.</p> <p>Scale to fit—Specifies whether each formatted document page image is scaled to fit the target paper size. This option becomes available when Print document on is selected.</p> <p>If you do not want the document reduced or enlarged to fit on the selected paper, clear this check box.</p> <p>When Scale to fit is not selected and the document size is larger than the target paper size, the document image is clipped. If the document size is smaller, the document is centered within the target paper.</p> <p>The following figure shows preview images for a document formatted for Legal-size paper with the Print document on option selected, and the target size specified as Letter, with Scale to fit selected and without Scale to fit selected. The preview image uses a dashed line to show the boundaries of the logical page in relation to the target paper size.</p>  <p>Scale manually—Specifies the percentage used to scale the document for printing on the target paper. The default is 100% of actual size. Actual size is defined as the paper size that is selected in the printing driver or what the printing driver receives from the software program (if the software program does not negotiate the paper size with the printing driver). The printing driver scales the page by the appropriate factor and sends it to the printer. Any change to the scale also changes the page preview, which increases or decreases from the upper-left corner of the preview.</p> <p>The valid range is from 25% to 400%. If you enter a value outside of the range, an error message appears prompting you to enter a valid number.</p>
<p>Watermarks</p>	<p>Allows you to select a predefined watermark, create a text or graphical watermark, or edit an existing watermark.</p> <p>Watermarks are applied to logical pages. For example, when Pages per Sheet is set to 4 and the First page only check box is cleared, four watermarks appear on the physical page (one on each logical page).</p> <p>When the First page only check box is selected, the watermark is printed only on the first page of the document. The First page only check box is disabled when Watermarks is set to None.</p>

Table 4-3 Document features (continued)

Feature	Function
<p>Watermarks - Custom</p>	<p>Allows you to create a custom watermark. When you select + Custom from the Watermarks drop-down list, the following options are available on the Watermark Details dialog box:</p> <ul style="list-style-type: none"> • Name—Specifies a name for the watermark. This name appears in the Watermarks drop-down list. • Type—Specifies if the watermark is text or an image. • Message—Specifies the text for the watermark. This field is available only if Text is selected from the Type drop-down list. <p>To have more than one watermark with the same message and define different settings (such as font and alignment) for each watermark, you must create a separate custom watermark for each one.</p> <ul style="list-style-type: none"> – Select None from the drop-down list, type the text for the watermark in the Input Text field. – Select a variable from the drop-down list, and then click Add. When the document is printed, the variable is replaced with the appropriate text and printed as the watermark. You can type additional text in the field with the variable. • Image File—Specifies the image file that is used for the watermark. This field is available only if Image is selected from the Type drop-down list. <p>To insert an image, click Select. In the Open window, browse to and select the image file, and then click Open. Use the Scale, Transparency, and Layering options to specify how the image is displayed on the page.</p> <ul style="list-style-type: none"> • Message Angle—Specifies the orientation of the watermark on the page. The following options are available: <ul style="list-style-type: none"> – Vertical - Centers the watermark vertically on the page. – Horizontal - Centers the watermark horizontally on the page. – Angle - Centers the watermark at the specified angle on the page. • Font Attributes—Specifies the font, font color, shade, transparency, size, and style for the watermark text. • Alignment—Specifies the position on the watermark on the page. • Vertical Offset—Specifies how much offset on the Y-Axis from the alignment position the watermark is placed. • Horizontal Offset—Specifies how much offset on the X-Axis from the alignment position the watermark is placed.

Table 4-3 Document features (continued)

Feature	Function
<p>Special Pages</p>	<p>Defines the special pages that are inserted in the printed document, such as front and back covers. Special pages use a paper type and paper tray that is different from the one used for the remainder of the document.</p> <p>NOTE: Special pages are not supported with Booklet printing.</p> <p>NOTE: The options for special pages might vary depending on the printer model. For more information, see the user documentation for the specific printer.</p> <p>Set Special Pages to On. The Special Page Settings dialog box appears. After you define a special page, click Add. The definition of the special page is added to the Special Page List. You can add multiple special pages to a print job.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> • Special Page Type <ul style="list-style-type: none"> – Front Cover—Inserts a blank page or preprinted cover at the beginning of the print job or prints the first page of the print job on the specified paper type. – Back Cover—Inserts a blank page or preprinted cover at the end of the print job or prints the last page of the print job on the specified paper type. – Print pages on different paper—Prints the specified pages in the document on the specified paper type. – Insert Blank Pages—Inserts blank pages before or after the specified pages in the document. • Paper Source—Specifies the paper tray to use for the special pages. The list of paper trays varies depending on the accessories that are installed. Any optional trays that are installed through the Device Settings tab also appear in the list. • Media Type—Specifies the paper type to use for the special pages. Changes made to the Media Type setting here override any previous Media Type settings using the same paper source. <p>NOTE: The paper size is not altered with this feature.</p> <p>When you change the type and source of the paper and covers, the settings remain configured until you close the software program.</p>
<p>Alternative Letterhead Mode</p>	<p>When selected, this option eliminates the need to flip or reload letterhead or preprinted paper in a tray, whether you are printing on one or both sides of the sheet.</p> <p>For Alternate Letterhead Mode, load the paper as you would for printing on both sides. If the printer tray has an icon that indicates whether to load the paper either face-up or face-down, load the paper in the opposite orientation of what is shown.</p> <p>NOTE: Alternate Letterhead Mode is available only if the printer is equipped with an automatic duplexing unit.</p>
<p>Tab Printing</p>	<p>Enables users to print text on the tabs of tab media and insert the tabs in a document during printing. This feature is available only on printers that support this feature. Check the product specifications to make sure this feature is supported.</p> <p>NOTE: This feature is not supported by the V3 driver.</p> <p>For more information, see About Tab printing on page 53.</p>

Table 4-3 Document features (continued)

Feature	Function
Image Shift	<p>Enables users to adjust the position of the print image on the page. The print image is shifted by the amount specified.</p> <p>NOTE: Image Shift is not available if Pages per Sheet (on the Basic tab) is not set to 1 or Scaling is enabled. Image Shift does not enable printing beyond the minimum page borders.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> • Horizontal—Shifts the print image to the left or right by the specified plus or minus amount. • Vertical—Shifts the print image to the top or bottom by the specified plus or minus amount. <p>You also have an option to do a different shift for the front and back side of the page.</p> <p>NOTE: This feature is not supported by the V3 driver.</p>
Job Separator	<p>Enables users to insert a page at the beginning of each print job in order to separate the jobs; thereby making it easier to find the print job for a particular user.</p> <ul style="list-style-type: none"> • Job Separator is not bi-directional driven, meaning Job Separator needs to be enabled manually. • To enable the feature, go to Printer Properties > Device Settings > and enable Job Separator. • By default, Job Separator is disabled in the driver. • Once enabled, the feature is listed in the PPUi (and off by default) When Job Separator is turned on in the PPUi, a pop-up message displays three options: <ul style="list-style-type: none"> – Off – Separator Page: User can change the media type and paper source settings. Finishing options such as stapling include the separator page – Separator Page (Alternate): Finishing options such as stapling do not include the separator page <p>NOTE: This feature was designed with the same behavior as HP UPD.</p>

About default Watermark settings

The following table shows the default **Font Attribute** settings for new and predefined watermarks.

Table 4-4 Font Attribute settings for new and predefined watermarks

Setting	New watermark	Predefined watermark
Font	Segoe UI	Segoe UI
Font Color	Black	Black
Shade	128	128
Transparency	50	50
Size	72	Varies by watermark

Table 4-4 Font Attribute settings for new and predefined watermarks (continued)

Setting	New watermark	Predefined watermark
Style	Regular	Regular

Finishing features

Learn about the finishing features of HP Smart UPD.

These features are dependent on the printer and its features.

Table 4-5 Finishing features

Feature	Function
Output Bin	Specifies the output bin where the print job is sent when completed.
Staple	Specifies the number and position of the staples. Includes the Fold and Stitch option if a booklet maker is attached.
Punch	Specifies the number and position of the punch.
Fold	Specifies the type of fold, including C-fold and V-fold options.

Advanced features

Learn about the advanced features of HP Smart UPD.

Table 4-6 Advanced features

Feature	Function
Page Order	Specifies the order in which the pages of the document are printed. <ul style="list-style-type: none">• Front to Back—Prints the document so that page 1 prints first (default).• Back to Front—Prints the document so that page 1 prints last. <p>NOTE: The page-ordering operation works on whole sheets of paper rather than on individual logical pages. If you set Pages per Sheet (on the Basic tab) to be greater than 1, the ordering of logical pages on a physical sheet of paper does not change.</p>
Print All Text as Black	Prints all text as black, regardless of the text color in the original document. The feature is set to Off by default. Color text is printed as black, except for white text, which remains white. White text is a reliable method of printing reverse typeface against a dark background. This setting does not affect graphic images on the page or any text that is part of a graphic.

Table 4-6 Advanced features (continued)

Feature	Function
<p>Edge to Edge Printing</p>	<p>Prints the document with 2 mm margins on supported devices. When this feature is set to Off, the document is printed with standard margins.</p> <p>This feature is auto configurable on the Device Settings tab in Printer Properties. By default it is set to Auto Config.</p> <p>Edge To Edge settings can be configured by clicking the More Settings link located below the Paper Size setting on the Document tab for the SUPD V4 Driver.</p> <p>Edge To Edge settings are available on the Advanced tab in the SUPD V3 driver.</p> <p>NOTE: The Edge To Edge Printing feature is only supported on printers that support Edge-To-Edge mode.</p>
<p>RGB Color Selection</p>	<p>Defines how the printer processes color printing.</p> <p>RGB Color Selection settings can be configured by clicking the More Settings link located below the Color Mode setting on the Basic tab in the SUPD V4 driver.</p> <ul style="list-style-type: none"> • Printer Default—Uses the default theme for the printer. • Office (sRGB)—This is the best option for most of your printing needs. Colors are optimized to match the RGB colors on the screen while still providing vivid images and graphics. This option interprets RGB color as sRGB, which is the accepted standard for many software companies and organizations, such as Microsoft and the World Wide Web Consortium. • Photo (sRGB)—Select this option for a photographic targeted rendering of documents and images. • Device RGB—Prints RGB data in raw device mode. <p>To render documents properly when this option is selected, you must manage color in the program in which you are working or in the operating system.</p> <p>NOTE: Use this option only if you are familiar with the procedures for managing color in the software program or in the operating system.</p> <ul style="list-style-type: none"> • Photo (Adobe RGB 1998)—Prints documents that use the Adobe RGB color space rather than sRGB. <p>For example, some digital cameras capture images in Adobe RGB. Documents that are produced with Adobe Photoshop use the Adobe RGB color space.</p> <p>When printing from a professional software program that uses Adobe RGB, it is important that you turn off the color management in the software program and allow the printer software to manage the color space.</p> <ul style="list-style-type: none"> • Vivid (sRGB)—Select this option to reproduce graphics (for example, pie charts and bar graphs) with more saturated colors. This option can be useful when printing business documents that do not contain images. • Custom RGB—Uses a custom profile to emulate color output from another product by modifying how color is rendered. <p>You can download custom profiles from the following website: www.hp.com</p>

Table 4-6 Advanced features (continued)

Feature	Function
<p>Edge Control</p>	<p>Specifies how edges are rendered. Edge control has the following components:</p> <ul style="list-style-type: none"> • Adaptive halftoning increases the edge sharpness. • Resolution Enhancement Technology (REt) smooths the edges. • Trapping reduces the effect of incorrect color alignment by slightly overlapping the edges of adjacent objects. <p>The following options are available:</p> <ul style="list-style-type: none"> • Off—Turns off trapping, adaptive halftoning, and color REt. • Printer Default—Uses the printer’s default setting for edge control. <p>NOTE: If you notice white gaps between objects or areas that have a slight shadow of cyan, magenta, or yellow at the edge, select Auto to increase the trapping level.</p> <ul style="list-style-type: none"> • Light—Sets trapping at a minimal level, and turns on adaptive halftoning and color REt. • Normal—Sets trapping at a medium level, and turns on adaptive halftoning and color REt. This is the default trapping setting. • Maximum—Sets adaptive halftoning and color REt on. This is the most aggressive trapping setting. <p>TIP: You can configure the Edge Control setting by clicking the More Settings link located below the Color Mode setting on the Basic tab (V4 driver only). In the V3 driver this feature can be configured under Advanced features.</p>

Table 4-6 Advanced features (continued)

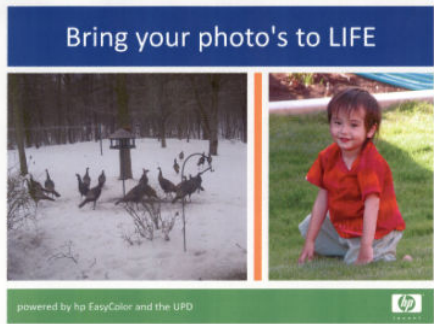
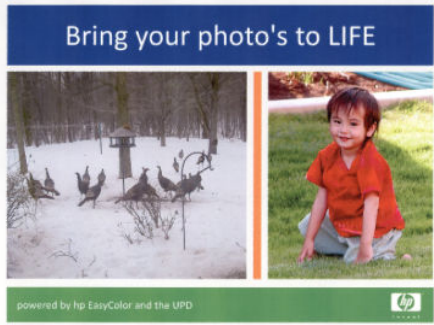
Feature	Function
<p>HP EasyColor</p>	<p>HP EasyColor automatically improves mixed-content documents, adjusting photographic images. Resulting in improved sharpness, detail, and faster printing.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> • Automatic • Off • Conservative—Modifies HP EasyColor to only perform smoothing and sharpening. The adaptive brightness and contrast is disabled. <p>The following example is an image created without using the HP EasyColor option (disabled):</p> <p>Figure 4-2 Example of HP EasyColor disabled</p>  <p>The following example is an image with HP EasyColor enabled and the enhancements that result from using the HP EasyColor option:</p> <p>Figure 4-3 Example of HP EasyColor enabled</p>  <p>The HP EasyColor option is enabled by default in HP Smart UPD, so you do not need to make manual color adjustments. To disable the option so you can manually adjust the color settings, set the HP EasyColor feature to Off or Conservative.</p> <p>NOTE: Print in Grayscale can be selected when HP Easy Color is set to On.</p>

Table 4-6 Advanced features (continued)

Feature	Function
Neutral Grays	<p>Specifies the method for creating gray colors used in text, graphics, and photographs.</p> <ul style="list-style-type: none"> • Printer Default—Allows the printing driver to determine the best method to use. This is the default. • Black Only—Generates neutral colors (grays and black) by using only black toner. This guarantees neutral colors without a color cast. This setting is best for documents and grayscale viewgraphs. • CMYK Gray—Generates neutral colors (grays and black) by combining all four toner colors. This method produces smoother gradients and transitions to other colors, and it produces the darkest black. <p>TIP: You can configure the Neutral Grays setting by clicking the More Settings link located below the Color Mode setting on the Basic tab.</p>
Halftone	<p>Affects the resolution and clarity of your color output.</p> <ul style="list-style-type: none"> • Printer Default - Allows the printing driver to determine the best method to use. This is the default. • Smooth - Provides better results for large, solid-filled print areas. Enhances photographs by smoothing out fine color gradations. Select this option when uniform and smooth area fills are the top priority. • Detail - Provides better results for text and graphics that require sharp distinctions among lines or colors or for images that contain a pattern or a high level of detail. Select this option when sharp edges and details are the top priority. <p>TIP: You can configure the Halftone setting by clicking the More Settings link located on the Basic tab under the Color Mode setting.</p>
Raster Compression	<p>Specifies how HP Smart UPD selects the compression method used for graphics.</p> <ul style="list-style-type: none"> • Automatic—Allows the printing driver to determine the best compression method to use. This is the default setting. • Best Quality—Forces the printing driver to use a compression method that results in no loss of data during compression. • Maximum Compression—Where applicable, requires the printing driver to use a compression method that maximizes compression. This setting can result in a loss of quality in the printed output. <p>TIP: In the V4 driver you can configure the Raster Compression setting by clicking the More Settings link located below the Print Quality setting on the Basic tab.</p>

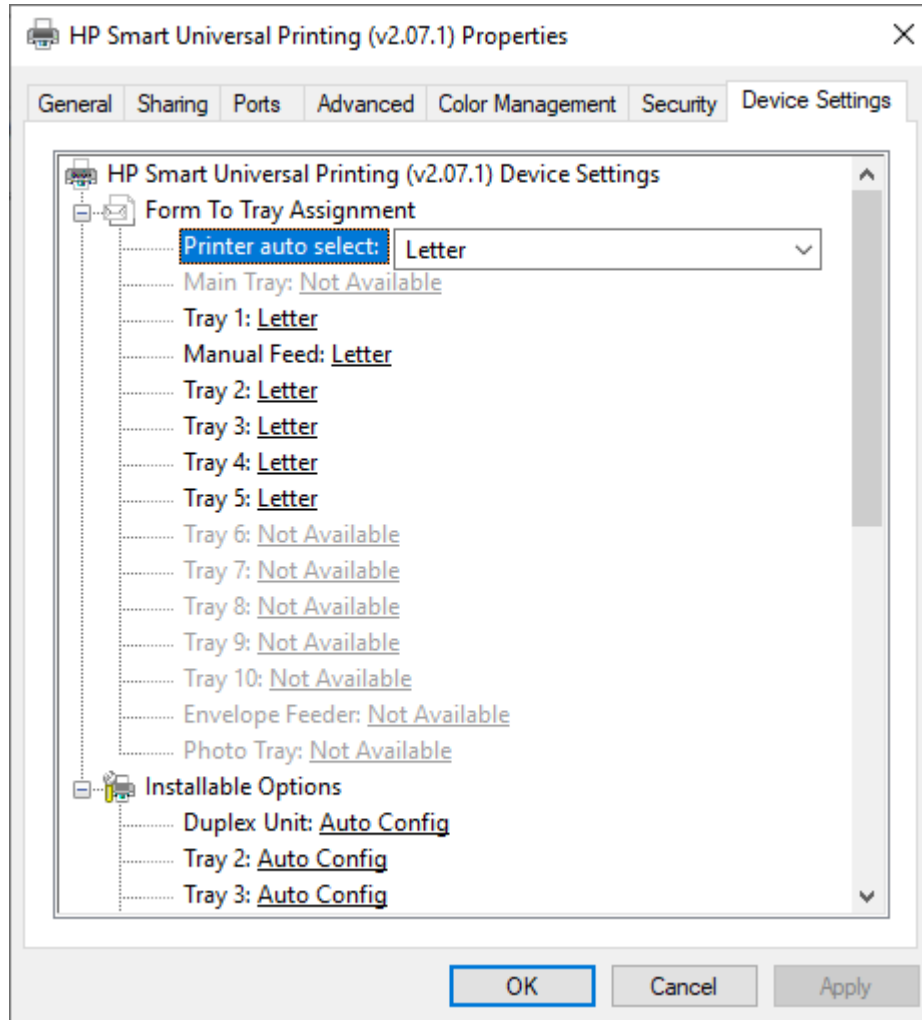
Table 4-6 Advanced features (continued)

Feature	Function
Accounting Type	<p>Disables or enables a job accounting user access code.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> • Off—Prints the job without a job accounting user access code. • User Access Code Only—Requires the user to enter the user access code to print the job. The print administrator provides the user access code. <p>When User Access Code is selected, the following settings are available:</p> <ul style="list-style-type: none"> – User Access Code—Enter a 4 to 8 digit (0-9) user access code. – Always prompt when printing—Select this check box to prompt a user to enter a job accounting user access code before printing every job. After the code is entered, the job is printed. <p>NOTE: The Accounting Type feature is available when Job Accounting is set to Installed on the Device Settings tab in the Printer properties dialog box.</p>
Ink Dry Time	<p>Specifies the amount of time that the printer takes to dry a printed page. The ink drying time is factored into the time between the first page finishing and the next page finishing. Printing pauses temporarily if more time is needed.</p> <p>The ink drying time reduces the chances that a page smears the page below it in the output tray. Increasing the drying time works best for jobs printed on plain paper.</p>
Ink Saturation	<p>Specifies the amount of black or color applied. Increasing the saturation works best for jobs printed on brochure or photo paper.</p>
Black Ink Spread	<p>Limits the spread of black onto adjacent areas of color on the printed page. Decreasing the spread works best for jobs printed on plain paper.</p>

Device Settings tab features

The **Device Settings** tab in **Printer Properties** contains controls for paper-handling devices and for managing the printer. Available options vary depending on the specific printer and features.

Figure 4-4 Device Settings tab



NOTE: Edge To Edge Printing is supported only on printers that support both Edge-To-Edge and Capabilities mode.

Table 4-7 Device Settings tab - Form To Tray Assignment (legacy)

Setting	Description
Form to Tray Assignment (legacy feature)	Instead of using this legacy feature, set the paper size and type from the printer control panel and select the paper size and type in the printing driver when the document is printed.

Table 4-8 Device Settings tab - Installable Options feature

Setting	Description
Tray 3 - X	Specifies if optional trays are installed on the printer. Settings include: Auto Config , Not Installed , or Installed .
Envelope Feeder	Specifies if an optional envelope feeder is installed on the printer. Settings include: Auto Config , Not Installed , or Installed .

Table 4-8 Device Settings tab - Installable Options feature (continued)

Setting	Description
Duplex Unit (for two-sided printing)	<p>Specifies if a Duplex Unit is installed on the printer. Settings include: Auto Config, Not Installed, or Installed.</p> <p>NOTE: For printers that support smart duplexing, the printer uses the smart duplexing feature to detect whether there is information on both sides of the print job pages and only runs the pages through the duplexing unit if printable information appears on the second side of the page.</p>
Mopier Mode	<p>Specifies if the printer supports the multiple-original print (mopy) function. Mopy is an HP-designed feature that produces multiple, collated copies from a single print job. This feature increases performance and reduces network traffic by transmitting the job to the printer once, and then storing it in memory or on the hard disk. The remainder of the copies are printed at the fastest speed. All documents that are printed in mopier mode can be created, controlled, managed, and finished from the computer, which eliminates the extra step of using a photocopier.</p> <p>The printer supports the mopy feature when the Mopier Mode setting on the Device Settings tab is Enabled.</p> <p>Settings include: Auto Config, Not Installed, or Installed.</p> <p>When you use HP Smart UPD, mopying is performed either through the software or through the printer hardware. When Mopier Mode is enabled, mopying takes place through the printer hardware. One copy of a multiple-page print job is transmitted once through the network to the printer with a printer job language (PJM) command that directs the printer to make the specified number of copies.</p> <p>When you disable Mopier Mode, you are not necessarily disabling multiple collated copies, which the driver can still perform through the software. Only the printer hardware path is disabled. However, a multiple-copy print job that is sent when Mopier Mode is disabled loses the advantage of transmitting the print job once. The job is sent through the network for each collated copy.</p>
Device Type	<p>Specifies the type of printer. The default is Auto Config. If bidi is not working, you can specify a color device by selecting Color. To disable the Color tab, select Monochrome.</p> <p>NOTE: Even with a device type of Monochrome, HP Smart UPD might still send color data to the printer. In some cases, the best print quality can be achieved by sending color data to a monochrome printer.</p>

Table 4-8 Device Settings tab - Installable Options feature (continued)

Setting	Description
Optional Output Bin	<p>Specifies if an optional output bin is installed on the printer and the type of output bin.</p> <p>On most HP LaserJet printers running FutureSmart 4.28 or later, Accessory Output Bin is replaced with Optional Output Bin, which lists the type of bin instead of the model number.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed • HP 2 Bin Mail box • HP 3 Bin Mail box • HP 5 Bin Mail box • HP 8 Bin Mail box • HP Stacker Bin • HP Collator Bin • HP Job Separation Bin • Optional Alternate Bin • Standard Alternate Bin • Standard Output Bin
Stapling Unit	<p>Specifies if an optional stapling unit is installed on the printer and the type of stapling unit.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed • 1 Staple Unit • 2 Staple Unit • 3 Staple Unit
Booklet Maker Unit	<p>Specifies if an optional booklet maker is installed on the printer.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed • Installed
Punch Unit	<p>Specifies if an optional punch unit is installed on the printer and the type of punch unit.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed • 2/3 Holes • 2/4 Holes • 4 Holes-Swedish

Table 4-8 Device Settings tab - Installable Options feature (continued)

Setting	Description
V-Fold Unit	<p>Specifies if an optional V-fold unit is installed on the printer.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed • Installed <p>For V-fold, the sheet is folded into two equal sections with a single fold, creating four separate panels for printed content. This format is often used for bulletins, menus, programs, greeting cards, technical instructions, and booklet pages.</p>
C-Fold Unit	<p>Specifies if an optional C-fold unit is installed on the printer.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed • Installed <p>For C-fold, the sheet is folded into three nearly equal sections with two folds, creating six panels for printed content. One panel serves as the cover. This format is often used for self-mailing brochures or pamphlets, letters, statements, invoices, bulletins, any Letter-size sheet (8.5 in x 11 in) requiring insertion into a standard #10 or #9 envelope.</p>
Job Accounting	<p>Serverless Job Accounting (SJA) with Local Quotas provides the ability to track and report mono and color copied sides, mono and color printed sides, scanned sides, and sent fax sides.</p> <p>SJA is configured through the HP Embedded Web Server (EWS).</p> <p>Local quotas provide the ability to track and limit, allow or deny, users the ability to print, copy, digital send, and fax. You can also block guest printing copying, and digital sending.</p> <p>This includes the ability to easily block guest printing, copying, and digital sending.</p> <p>For more information, see Use the Job Accounting feature on page 61.</p>
Job Storage	<p>When set to Auto Config, specifies that the printer can store print jobs so that users can gain access to those print jobs later at the printer control panel.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed • Installed
Secure Printing	<p>When set to Auto Config, specifies that HP Secure Encrypted Printing (SEP) is available for personal and stored jobs.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed
Edge to Edge Printing	<p>Prints a document with 2 mm margins on supported printers. The default is Auto Config. If this option is not enabled, documents are printed with standard margins.</p> <ul style="list-style-type: none"> • Auto Config • Not Installed • Installed <p>NOTE: Edge-to-edge printing is supported only on printers that support both Edge-To-Edge and Capabilities mode.</p>

About Mopier mode and collation

Mopying and collating print jobs are independent but closely related functions. Mopying is the ability to send original print jobs to the printer and is performed by the printing driver. Collating can be controlled by either the printing driver or the document software program.

Mopier mode is enabled by default in the printing driver. To disable mopier mode, change the **Mopier Mode** setting on the **Device Settings** tab in the **Printer properties** to **Not Installed**.

Collation is controlled through the printing driver by using the **Collate** feature on the **Document** tab in **Printing preferences**. Type the number of copies in the **Copy Count** field on the **Document** tab. To allow the software program to control collation, set the **Collate** option to **Off**. The **Collate** option is available only when the **Copy Count** option is set to more than 1 copy.

To receive uncollated multiple copies of a print job, you must set the **Collate** option to **Off** *and* make sure that the software program collation feature is not selected.

The following table shows the relationship between mopier mode settings and collation settings in the software application and the printing driver. The first three columns show the settings. The last column, *Expected result*, shows how a 3-page print job would appear.

Table 4-9 Driver Mopier Mode and Collation Settings

Mopier mode	Software application collation	Printing driver collation	Expected result
Not Installed	Not Selected	Off	3 copies uncollated
Not Installed	Not Selected	On	3 copies collated
Not Installed	Selected	Off	3 copies collated
Not Installed	Selected	On	3 copies collated
Enabled	Not Selected	Off	3 copies uncollated
Enabled	Not Selected	On	3 copies collated
Enabled	Selected	Off	3 copies collated
Enabled	Selected	On	3 copies collated

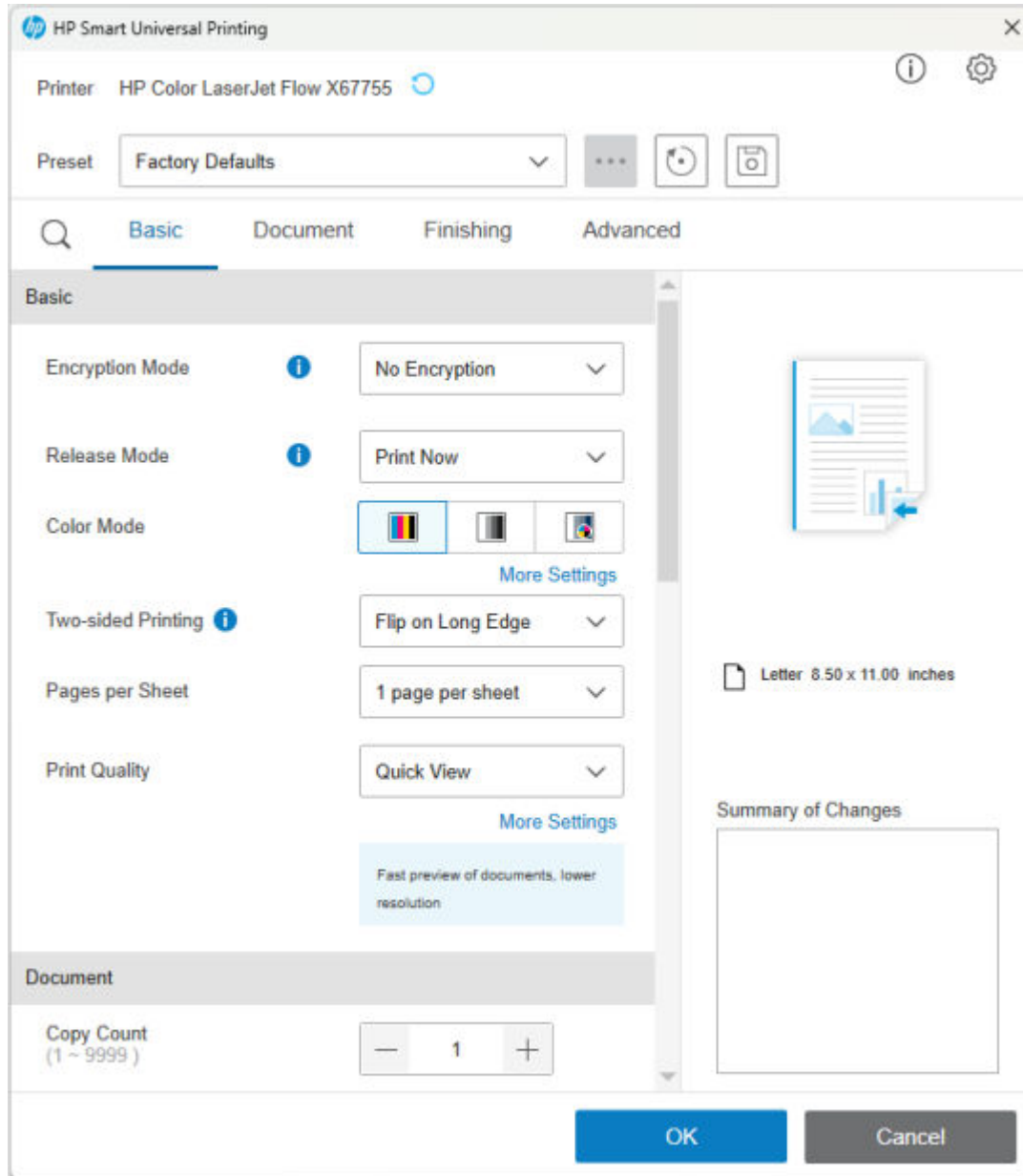
About Printing preferences

The **Printing preferences** dialog box contains options for formatting documents that are printed.


Gain access to the **Printing preferences** tabs either through the software application or through the Windows **Printers** folder.


The following is an example of the **Printing preferences** tabs that might be available depending on the capabilities and accessories in the currently selected printer.


Figure 4-5 Example of printing preferences



You can scroll down through the features or click the **Basic**, **Document**, **Finishing**, or **Advanced** tab to jump down to a specific grouping of settings.

HP Smart UPD also has a Search feature that you can use to quickly access a specific feature. Click the search icon , type the name of the feature, and then select the feature from the list provided to go directly to the feature in the user interface.

 **NOTE:** The **Color Mode** selection is only available for printers that support color.

 **NOTE:** The **Finishing** tab displays only if the device supports it, and the finishing settings vary depending on which paper-handling options are installed.

About HP Secure Encrypted Print

HP Secure Encrypted Print (HP SEP) provides a solution for printing sensitive documents.


HP Smart UPD provides true symmetric AES256 print-job encryption and decryption from the client to the page based on a user-defined password using a FIPS-140-validated cryptographic module from Microsoft. Both the key and the job are stored in the encrypted format on a printer that has HP FutureSmart 4 firmware version 4.8 or later until the user releases the job to print.

IT departments can configure the driver to require either a PIN or HP SEP password on every job. This balances the need for security in certain IT departments with the user-print experience.

About Tab printing

The **Tab Printing** feature can be used to print text on the tabs of tab paper and insert the tabs between document pages during printing on supported printers.

The following are the specifications for the **Tab Printing** feature:

 **NOTE:** This feature is supported on select printers only. Check the product specifications to make sure this feature is supported on the printer.

- Only supported on HP Smart UPD PCL 6.
- Requires HP FutureSmart firmware version 4.7 or newer.
- Tab printing is over a fixed set of paper sizes and are defined as custom paper sizes. The following paper sizes are supported:
 - Letter - Tab size (9 x 11 in + .05 in)
 - A4 - Tab size (8.5 x 11 in + .05 in)
- **Tab Media** is only supported on the MP Tray long edge, tabs facing away from printer.

Unsupported features

Learn about which features HP Smart UPD does not support when you use the **Tab Printing** feature.

The following features are not supported with **Tab Printing**:

- Booklet Printing
- N-Up
- Page Order
- Page Border
- Finishing including Staple, Punch, and Fold
- Duplex (two-sided printing)

Types of tabs supported

The HP Smart UPD and printer support a fixed set of standard tabs.

Figure 4-6 Supported standard tabs

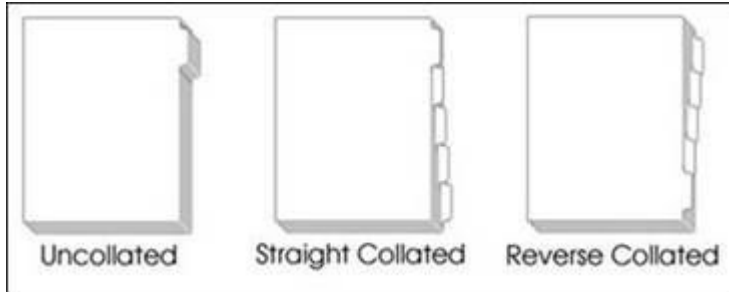


Table 4-10 Supported tabs

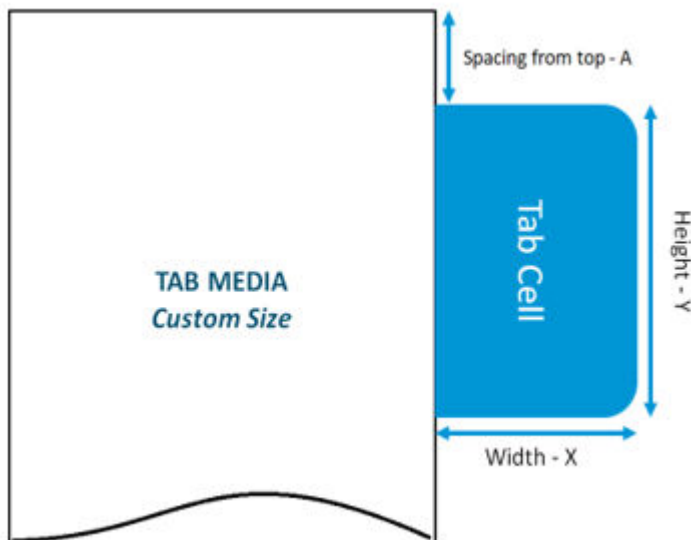
Tab types	Tab count	Style - collation
1/3 cut (3 Bank)	3-Tab	Reverse
1/4th cut (4 Bank)	4-Tab	Reverse
1/5th cut (5 Bank)	5-Tab	Reverse
1/6th cut (6 Bank)	6-Tab	Reverse
1/8th cut (8 Bank)	8-Tab	Reverse
1/10th cut (10 Bank)	10-Tab	Reverse

To print the tab text correctly, use the following standard dimensions:

- The following formula defines the printable tab region for HP Smart UPD:

$$\text{Height - Y Tab cell} = (\text{Height of Tab Media} - 0.5 \text{ in top} - 0.5 \text{ in bottom}) / (\text{Divide by number of tabs})$$
- Reverse first tab starts 0.5 in from the bottom.

Figure 4-7 Tab dimensions



How HP Smart UPD works with job storage

During installation, HP Smart UPD uses Printer Automatic Configuration to query the printers for installed options and additional equipment. When job storage capabilities are detected, HP Smart UPD enables job storage, related options (such as PIN Released jobs), and Mopier features.

If HP Smart UPD detects the presence of a hard drive or RAM disk on a printer, the job storage related options are displayed and job storage is enabled by default.

If a RAM disk is used, jobs stored on this printer are lost when the printer is turned off and then turned back on.

Printing drivers do not perform capacity checks before attempting to store print jobs. If the job storage area becomes full, an **Unable to store job at printer** error message appears.

To override the Job Storage and Mopier features, open **Printer Properties**, click the **Device Settings** tab, and then set the **Mopier mode** and **Job Storage** features to **Not Installed**. This disables job storage as well as printer-based collation.

5 Using the HP Smart UPD

Learn how to use the HP Smart UPD and its features.

Introduction

HP Smart UPD provides a general-purpose printing driver.

For more information about installing HP Smart UPD, see [Install and Uninstall the HP Smart UPD on page 15](#).

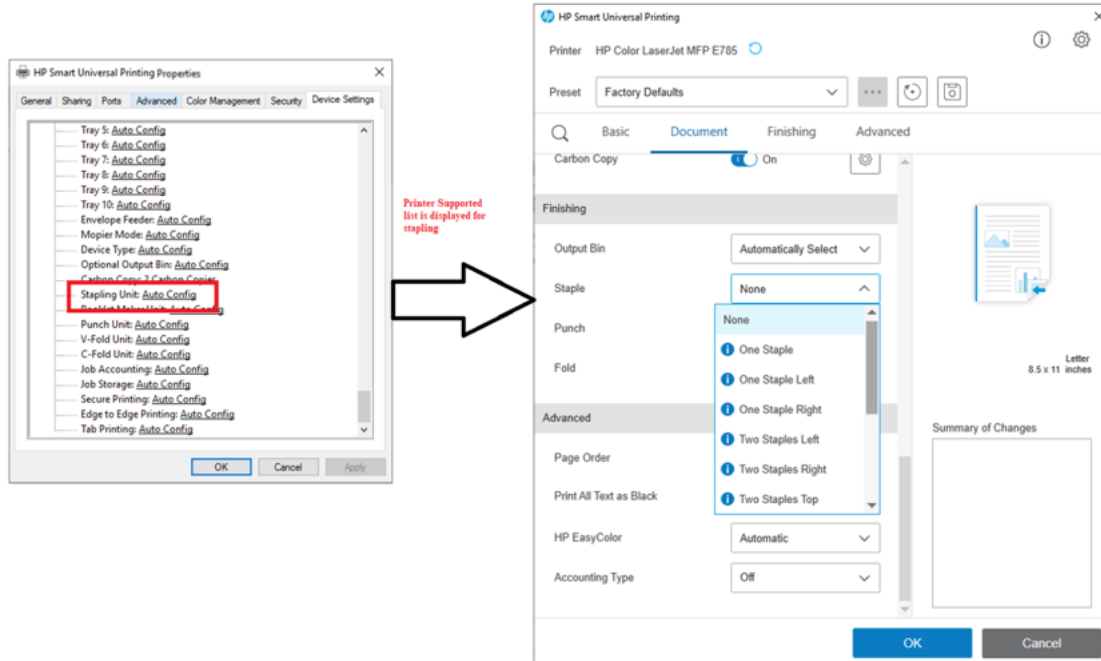
Changes between HP UPD and HP Smart UPD

The following are some of the changes in the features between HP UPD and HP Smart UPD.

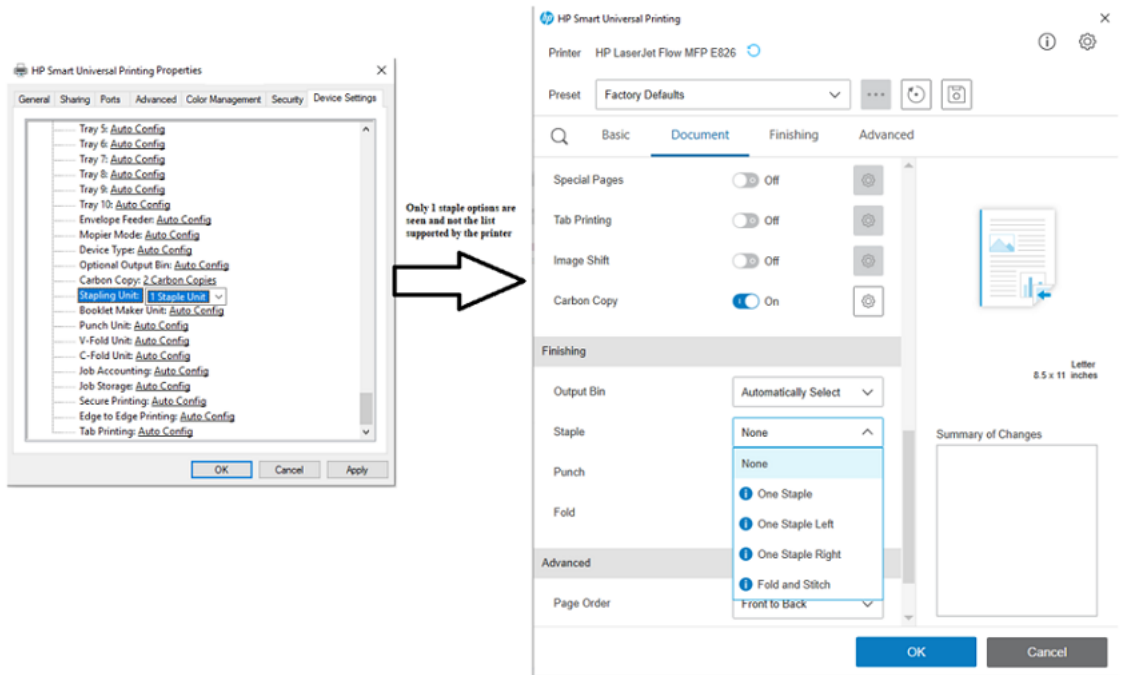
Behavior of Device Settings

In HP Smart UPD under Device Setting, there is an additional "Auto Config" option added. Depending on how this option is set up, printer capabilities derived through bidi will automatically drive the options supported.

For example, if Stapling Unit is set to "Auto Config", the staple options supported by the printer will be shown in the PPUI.

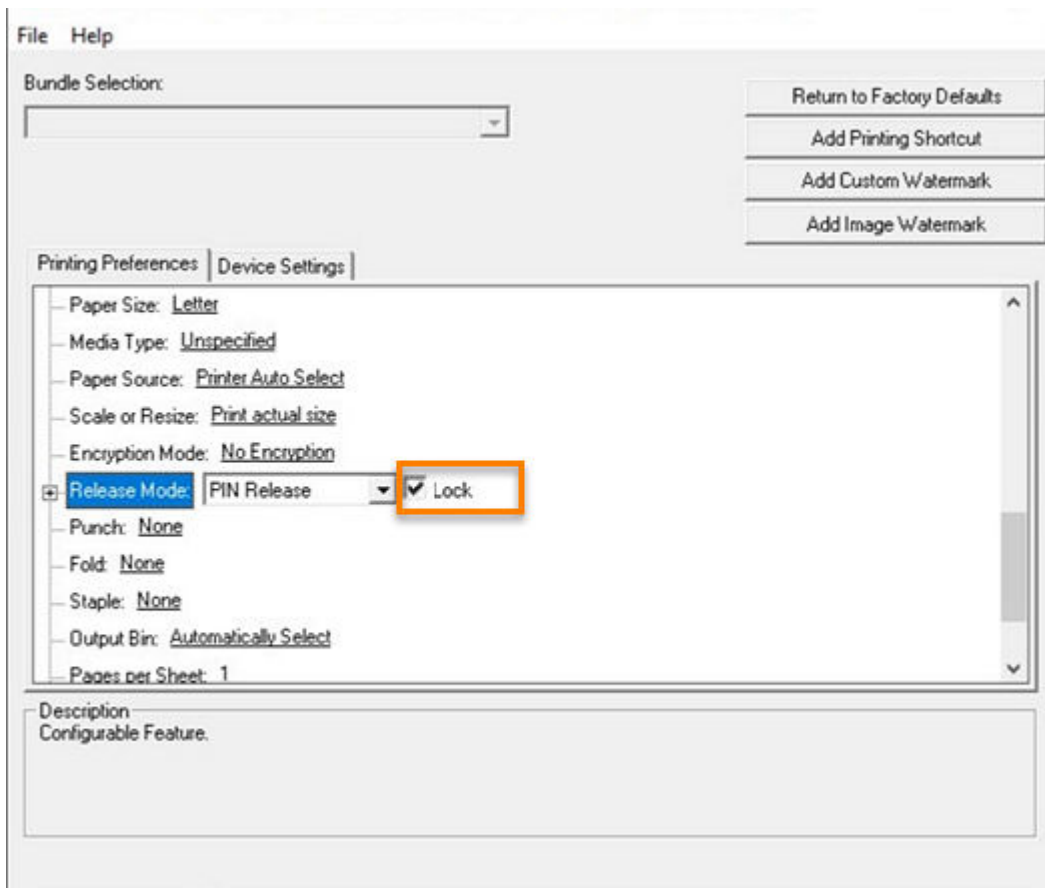


By contrast, if Stapling Unit is set to "1 Staple Unit," only options that are associated with "1 Staple Unit" will be seen in the PPUI, even if the printer supports other stapling options.



Deprecated features in Device Settings

PIN to Print Only is deprecated in HP Smart UPD. Alternatively, use the **Driver Configuration Utility (DCU)** from the **HP Smart Print Administrator Resource Kit (HP Smart PARK)** to lock the feature.



For guidance on how to download and use **HP Smart PARK**, see [HP Smart Print Administrator Resource Kit - User Guide](#).

To view the complete list of Smart UPD deprecated features in **Device Settings**, see [HP Smart Universal Print Driver - Release Notes](#).

New user interface with Refresh button

For more details, see the *Software description* section.

Queue Name for HP Smart UPD as a Windows Print Driver

If the user installs the HP Smart UPD driver using TCP/IP connectivity, Windows sets the Driver name as the queue name, which means the name of the installed print queue will be "HP Smart Universal Printing."

Whereas, if the user installs the HP Smart UPD driver using USB or WSD connectivity, Windows sets the device name as the queue name, which means the name of the installed print queue will be the printer model name.

Migration to HP Smart UPD from HP UPD

HP Smart UPD offers several advantages over HP UPD. See the release notes for details on the advantages. Because of these benefits, many customers are migrating from HP UPD to HP Smart UPD.

The HP Smart Print Administrator Resource Kit (HP Smart PARK) offers several methods for migration. For more details on how to migrate from HP UPD to HP Smart UPD, see the HP Smart PARK User Guide on the [Manuals page](#).


HP Smart UPD PDL and changing the PDL

HP Smart UPD generates PCL6 Page Description Language (PDL) by default if the printer supports it. This output can be changed to any other PDL which is supported by the device.

For PDLs supported by the HP Smart UPD, see the *Key differences* table in [Purpose and scope on page 1](#). To understand the method for changing the PDL output for HP Smart UPD, see the HP Smart Print Administrator Resource Kit (HP Smart PARK) User Guide on the [Manuals page](#).

Check the version of HP Smart UPD


Use the **Printing preferences** dialog box to check the version of HP Smart UPD.

To find out what version of HP Smart UPD is installed, click the information icon  in the upper-right corner of the **Printing preferences** dialog box.

Change the measurement units

Learn how to change the measurement units for HP Smart UPD settings.

Follow these steps to switch between inches and millimeters:

1. In the **Printing preferences** dialog box, click the settings icon  in the upper-right corner.

2. Select the **Millimeters** or **Inches** option.
3. Click **OK**.


Change HP Smart UPD properties

There are two methods to gain access to HP Smart UPD properties (print job preferences).

- **All jobs from the Devices and Printers folder**—Use this method to change the default print settings for all applications that use this printing driver.
- **Per job when printing from an application**—Use this method to change the print settings for a single print job or for print jobs during a single session in an application.

Change the properties for all jobs from the Devices and Printers folder

Follow these steps to gain access to the settings for HP Smart UPD.

1. Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**.
2. Type `control panel`, and then click **OK**. The **Control Panel** window appears.
3. Click **View devices and printers**. The **Devices and Printers** window appears.
4. Right-click the print queue, and then select **Printer Properties**. The **Properties** dialog box appears.
5. Click the **Advanced** tab, and then click **Printing Defaults**. The **Printing Preferences** dialog box appears.
6. Make the changes to the printing driver settings, and then click **OK**.

Change the properties for each job when printing from an application

Follow these steps to gain access to the settings when printing from an application.



NOTE: The changed settings apply only to the current print job or only to print jobs sent within the same session in that application.

1. In the application, click **File**, and then click **Print**.
2. In the **Print** dialog box, select the appropriate HP Smart Universal Printing Driver printer.
3. Click **Printer Properties** or **Properties**.



NOTE: The label for the button that opens the **Printer Preferences** dialog box varies depending on the software program.


4. Make the changes to the printing driver settings, and then click **OK**. The **Print** dialog box returns.
5. Click **Print** to print the job using the changed settings.

Change printing driver settings

The printing driver settings are available from within most software applications. The appearance and names of the printing driver features that display might vary depending on the operating system, specific printer, and paper-handling options.

These settings apply only while the software application is open. You can also control the printing driver directly from the **Devices and Printers** folder. These settings change the default settings for all software applications.

Use one of the following methods to change the printing driver settings:

- **Method 1:** Change the printing driver settings that apply only while the specific software application is open:
 1. In the application, click **Print**, and then click **File**.
 2. Click **Printer Properties** or **Properties**.
 3. Change the settings, and then click **OK**.
- **Method 2:** Change the default printing driver settings that apply to all software applications:
 1. Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**.
 2. Enter `control panel`, and then click **OK**.
 3. Under **Hardware and Sound**, click **View devices and printers**.
 4. Right-click the print queue for the printer, and then click **Printing preferences**.
 5. Change the settings, and then click **OK**.

Print using HP Smart UPD

HP Smart UPD behaves similar to a product-specific driver. It behaves according to the driver features available for the printer to which HP Smart UPD is attached.

Follow these steps to use HP Smart UPD to print:

1. In the application, click **File**, and then click **Print**. The application **Print** dialog box opens.
2. Select the printer from the list of available printers.
3. Click **Printer Properties** or **Properties**.
4. Change the printing driver features as needed. For example, click the **Document** tab, and change the **Copy Count** field.
5. When you are finished changing the settings, click **OK**.
6. Click **Print**.

Use Presets

A preset saves commonly used printing driver settings under a shortcut name.

Presets created from the application show the saved settings only while the application is open. Presets created from the **Devices and Printers** folder are default settings that are available to all applications.

Predefined presets



Learn about the predefined presets that are available in HP Smart UPD.

You can use the predefined presets as-is or use one as the base to create a custom preset.

Some of the predefined presets that a user might see are as follows:

- **Factory Defaults**—Select this option to print using the factory default settings.
- **EcoSMART**—Select this option to print using typical settings for duplex printing.

If you change any of the settings for a predefined preset, the following icons become active:


- **Save icon** —Saves the new settings as a custom preset.
- **Revert to the selected preset icon** —Returns the selected preset to the default options for all the features.

The **Summary of Changes** section in the right pane is updated to reflect the changes made to the settings for the preset.

Create a custom preset

Learn how to create a custom preset.

Follow these steps to create a custom preset:

1. From the **Preset** drop-down list, select **Factory Defaults** to use as a base.
2. Select the appropriate print settings for the preset.
3. Click the **Save icon** . The **Custom Preset** dialog box appears.
4. In the **Preset Name** field, type a name for the custom preset, and then click **Save**. The custom preset is in the **Preset** drop-down list.

Delete a custom preset

You can delete a custom preset. You cannot delete the predefined presets.

Follow these steps to delete a custom preset:

1. From the **Preset** drop-down list, select the custom preset.
2. For the V3 driver, click the **Delete** icon.
3. Click **Delete**.
4. In the **Delete** dialog box, click **Yes**.

Use the Job Accounting feature

Serverless Job Accounting (SJA) with Local Quotas provides the ability to track and report mono and color copied sides, mono and color printed sides, scanned sides and sent fax sides. SJA is configured through the Embedded Web Server (EWS)

Local quotas provide the ability to track and limit, allow or deny, users the ability print, copy, digital send, and fax. You can also block guest printing, copying, and digital sending.

In order to enable Serverless Job Accounting with Local Quotas, the EWS Admin Password must be set.

Job Accounting is disabled by default. To enable Job Accounting, open **Printer Properties**, and then click the **Device Settings** tab. From the **Job Accounting** drop-down list, select **Installed**. Click **OK**.



NOTE: For queues that are connected to devices that do not support the Job Accounting feature, leave the **Job Accounting** option set to **Not Installed**.

For more information, go to *Set up and Configure Job Accounting*.

Configure Serverless Job Accounting (SJA) in the Embedded Web Server (EWS)

Learn how to use the EWS to configure Serverless Job Accounting.

1. Enable job statistics (EWS)

- a. Open the Embedded Web Server.
- b. If the password is not set, set the password.
- c. Select the **General** tab.
- d. In the left navigation pane, select **Job Statistics Settings**.
- e. Scroll down to **Device Users Statistics Log**, and select the **Enable Device User Statistics Log** check box.
- f. Click **Apply**.

2. Enable local quotas (EWS)

- a. Select the **General** tab.
- b. In the left navigation pane, select **Quota Settings**.
- c. Select the **Enable local quota service** check box.
- d. Click **Apply**.

3. Add device users (EWS)

- a. Select the **Security** tab.
- b. In the left navigation pane, select **Access Control**.
- c. Scroll down to **Device User Accounts**, and then click **New**.
- d. Type the following user information:
 - **Display Name**—Name shown in the EWS, printer control panel, job log, and job statistics log
 - **Email Address**—(Optional) Email address for the user
 - **Network Name**—(Optional) Windows user name captured from the print stream
 - **Access Code**—Code required to access the control panel used in Print Driver if using Server-less Job Accounting with Local Quota
 - **Permission Set**—Set of permissions for accessing the control panel
- e. Click **OK**.
- f. Click **Apply**.

4. **Configure device access (EWS) (optional)**
 - a. Select the **Security** tab.
 - b. In the left navigation pane, select **Access Control**.
 - c. Scroll down to **Sign-In and Permission Policies**, and then clear the **Device Guest** check box. All printer options should display with lock icons.
 - d. Verify that the **Sign-In Method** option is set to **Local Device**.
 - e. Click **Apply**.
5. **Configure local quotas (EWS)**
 - a. Select the **General** tab.
 - b. In the left navigation pane, select **Quota Settings**.
 - c. Scroll down to **Local Quota Service**, and then select the **Enable local quota service** check box.
 - d. Click **Apply**.
 - e. In the left navigation pane, select **Local Quota Configuration**.
 - f. Enter the number of credits available for users, and then click **Apply**.
 - g. Scroll down to **Device User**, and then change the settings and set custom limits for individual users.
 - h. To change the default amount of credits for each user, select the check box next to the name, and then click **Edit**. Make the changes, and then click **OK**.
 - i. To configure quota credits for the number of credits each image will use, change the values for **Cost in Credits** under **Usage Charges**, and then click **Apply**.
6. **Install and set up a printing driver in Windows**
 - a. Use HP Smart UPD to install a print queue that points to a printer that has FutureSmart 4.6.1 or later.
 - b. Open **Printer Properties**, and then click the **Device Settings** tab.
 - c. From the **Job Accounting** drop-down list, select **Installed**, and then click **OK**.
 - d. Open **Printing Preferences**.
 - e. From the **Accounting Type** drop-down list, select **User Access Code Only**.
 - f. To configure the user access code, use one of the following methods:
 - Enter the code to use for this print queue in the **User Access Code** field.
 - Leave the **User Access Code** field blank, and select the **Always prompt when printing** check the box.
 - Enter the code to use for this print queue in the **User Access Code** field *and* select the **Always prompt when printing** check box. This sets the default user access code required for every print job, but still allows users to delete the default user access code and enter a different code before printing if needed.

- g. Click **OK**.

Set up a print job to use job storage

Follow these steps to set up a print job to use Job Storage.

1. From the software program, click **File**, and then click **Print**. The **Print** dialog box displays.



NOTE: If you click the print icon in the software program toolbar, the job prints without using Job Storage.

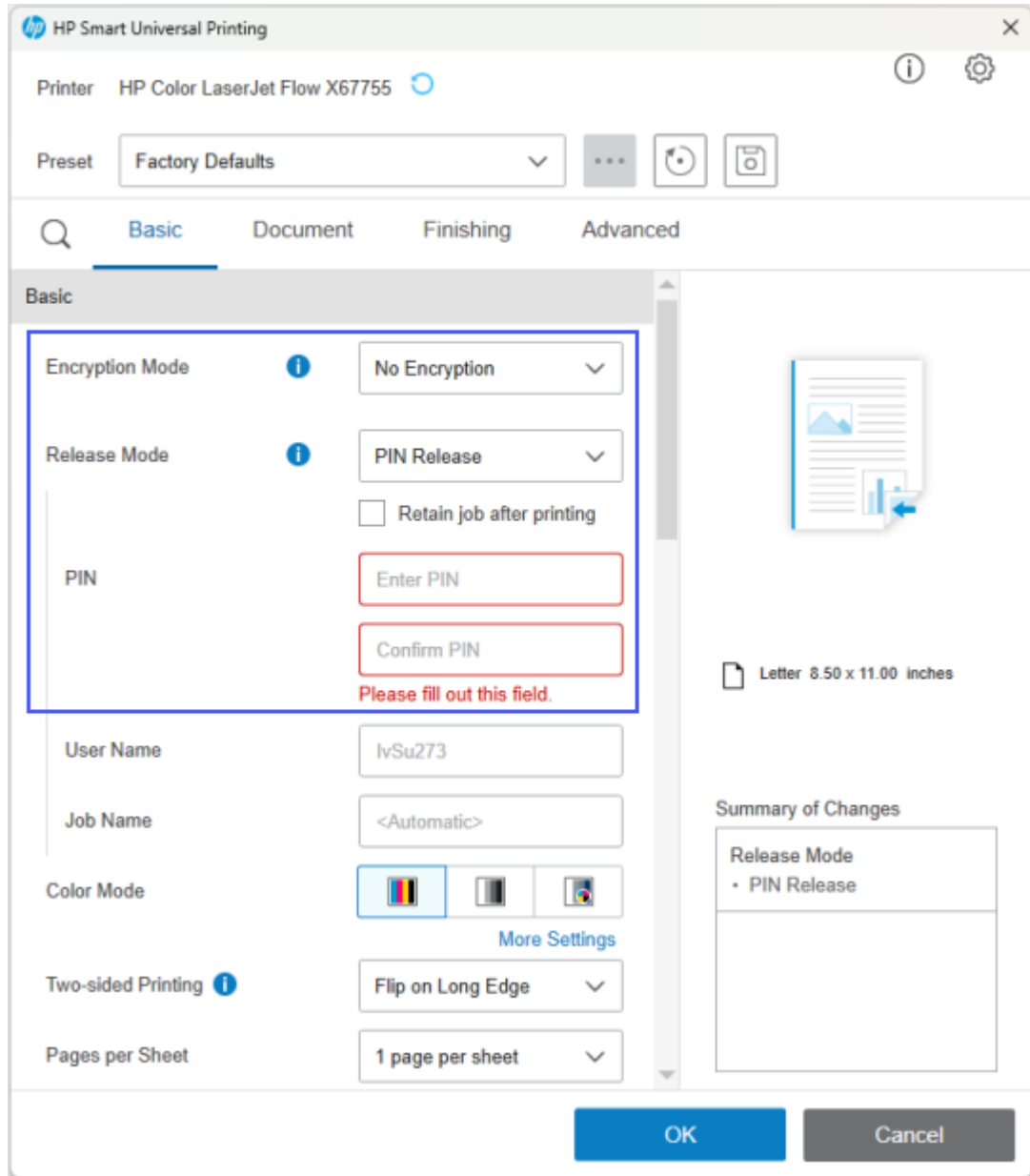
2. Click **Printer Properties** or **Properties**. The **Printing Preferences** dialog box displays.



NOTE: The label for the button that opens the **Printer Preferences** dialog box varies depending on the software program. For example, in Adobe Acrobat on Windows 10, the button is labeled **Properties**.

3. Secure the print job with either a PIN or encrypted password:
 - **To secure the job with a PIN:** In the Encryption Mode drop-down list, select **No Encryption**, and in the Release Mode drop-down list, select **PIN Release**. In the **Enter PIN** and **Confirm PIN** fields, type a four-digit numeric pin.
 - **To encrypt the job:** In the Encryption Mode drop-down list, select **Secure Encryption**, and in the Release Mode drop-down list, select **Password Release**. After clicking **Print**, you will be prompted to enter the password to encrypt.

Figure 5-1 Example of printing preferences when securing a job with a PIN




4. Select the **Retain job after printing** check box, if required.
5. Click **OK**.
6. Click **Print**.
7. If the **Job Storage Identification** dialog box displays, click **OK**.


Release a print job from job storage

After you send a print job to the job storage on the printer, you can release the job to print from the printer control panel.


Follow these steps to release a print job from job storage:

 **NOTE:** These steps might vary slightly depending on the specific printer you are using.


1. On the **Home** page of the printer control panel, select **Retrieve from Device Memory**.

 **NOTE:** On printers running FutureSmart 4.8 or later, select **Print** on the **Home** page of the printer control panel, select **Print from Job Storage**, and then select **Choose**.

2. Select the folder to display the current files.
3. Select the file you want to print.
4. If the file is password protected, a dialog for entering the password appears. Type the password or PIN for the file, and then select **OK**.

 **NOTE:** On printers running FutureSmart 4.8 or later, select **Select**. In the dialog that appears, type the password or PIN for the file, and then select **OK**.

5. Select the number of copies.
6. Select **Retrieve from Device Memory** to print the file.


 **NOTE:** On printers running FutureSmart 4.8 or later, select **Print**.

7. If the **Status** dialog appears, select **OK**.


Delete a print job from job storage

Sometimes it is necessary to delete a print job from the printer hard disk. You can delete the print job from the printer control panel.


Follow these steps to delete a print job from job storage:

 **NOTE:** These steps might vary slightly depending on the specific printer you are using.


1. On the **Home** page of the printer control panel, select **Retrieve from Device Memory**.

 **NOTE:** On printers running FutureSmart 4.8 or later, select **Print** on the **Home** page of the printer control panel, select **Print from Job Storage**, and then select **Choose**.

2. Select the folder to display the current files.
3. Select the file you want to delete.
4. If the file is password protected, a dialog for entering the password appears. Type the password or PIN for the file, and then select **OK**.

 **NOTE:** On printers running FutureSmart 4.8 or later, select the **Select** button. In the dialog that appears, type the password or PIN for the file, and then select **OK**.

5. Select **Delete**, and then select **OK**.

 **NOTE:** On printers running FutureSmart 4.8 or later, select the trash can icon in the lower-left corner, and then select **Delete Jobs**.

Add custom paper sizes

Learn how to add a custom paper size.

You must have administrator privileges on the operating system to add custom paper sizes.

Follow these steps to create a custom paper size:

1. From the **Paper Size** drop-down list, scroll down and select **+ Custom**. The **Custom Paper Size** dialog box appears.
2. In the **Paper Size Name** field, type a name for a custom paper size.

If you type a name in the **Paper Size Name** field, but then do not click **Save**, you can change the width and height values without losing the name. However, if you close the dialog box without clicking **Save**, any unsaved name or size values are lost.

The name that appears in the **Paper Size Name** field depends on the following conditions:

- If you selected a saved custom paper size from the drop-down list on the **Document** tab, the name of the selected custom paper size appears in the **Name** field.
 - If you selected a standard paper size on the **Document** tab, the default name of **Custom** appears in the **Name** field.
 - If you typed a new name in the **Name** field for the purpose of saving a new custom paper size or renaming an existing custom paper size, the new name remains in the **Name** field until you save the new size or close the dialog box.
3. Modify the width and length values.


The range of supported custom paper sizes varies depending on the printer model. For more information about the supported range of custom paper sizes, see the user documentation for the printer.

- If you type a value that is outside of the range indicated in parentheses, the **Please enter a valid number** message appears.
 - If units are in millimeters, the custom paper-size range minimum is the limit rounded up to the nearest whole millimeter. The custom paper-size range maximum is the limit rounded down to the nearest whole millimeter.
 - The resolution of each control is 1 mm or 0.10 in, depending on the current measurement units.
4. Click **Save**.

Modify or delete a custom paper size

Learn how to modify or delete a custom paper size.

Follow these steps to modify or delete a custom paper size:

1. From the **Paper Size** drop-down list, click the settings icon  next to the name of the custom paper size. The **Custom Paper Size** dialog box appears.
2. To modify the custom paper size, change the settings, and then click **Save**.
3. To delete the custom paper size, click **Delete**, and then click **Yes**.

Create a graphical watermark

Learn how to insert a graphic for the watermark in a document.

Follow these steps to create a graphical watermark:

1. From the **Watermarks** drop-down list, select **+ Custom**. The **Watermark Details** dialog box appears.
2. In the **Name** field, type a name of the custom watermark.



NOTE: The name of the new watermark will be available in the **Watermark** drop-down list on the **Document** tab.

3. From the **Type** drop-down list, select **Image**.
4. Click **Select**.
5. In the **Open** window, browse to and select the graphic file to use as the watermark, and then click **Open**.
6. In the **Scale** field, type the percentage used to scale the graphic on the page.
7. In the **Transparency** field, type the percentage that is used to define how clear the graphic is when printed.
8. Select the **Overlay** or **Underlay** option to specify how the graphic is laid on the paper relative to the text.
9. Under **Alignment**, select the box that defines where the watermark is positioned on the page, and then use the **Vertical Offset** and **Horizontal Offset** fields to specify how far from the X and Y- axes of the alignment position the watermark is placed.
10. Click **Save**.

Create a text watermark

Learn how to create a watermark by specifying custom text or by using a variable that automatically inserts text, such as the current date or time, as the watermark.

Follow these steps to create a text watermark:

1. From the **Watermarks** drop-down list, select **+ Custom**. The **Watermark Details** dialog box appears.
2. In the **Name** field, type a name of the custom watermark.




NOTE: The name of the custom watermark will be available in the **Watermark** drop-down list on the **Document** tab.

3. From the **Type** drop-down list, select **Text**.
4. To specify custom text for the watermark, select **None** from the **Message** drop-down list, and then type the text for the watermark in the field below the drop-down list.
5. To use variable text for the watermark, select the variable from the **Message** drop-down list, and then click **Add**. The variable is inserted in the message field. When the document is printed, the variable is replaced with the current value. For example, if you select the **DATE (DD/MM/YYYY)** variable, the date that the document is printed is inserted as the watermark.

6. Under **Message Angle**, select one of the following options to specify how the watermark is positioned on the page:
 - **Vertical**—Places the text along a line that spans the lower to upper edges of the page.
 - **Horizontal**—Places the text along a line that spans the mid-left to mid-right edges of the page.
 - **Angle**—Places the text at the specified angle across the page.
7. Under **Font Attributes**, select the font name, font color, shade, transparency, size, and style to use for the watermark.
8. Under **Alignment**, click the box that defines where the watermark is positioned on the page, and then use the **Vertical Offset** and **Horizontal Offset** fields to specify how far from the X and Y- axes of the alignment position the watermark is placed.
9. Click **Save**.


Create and print a booklet

To modify the HP Smart UPD settings for booklet printing, follow these steps.

 **NOTE:** Application settings generally overwrite any settings in the printing driver, which might overwrite settings in the printer depending on the features that the physical printer supports and the output and finishing devices that are installed.


There are two types of book-related print jobs:

- A **book** is a print job consisting of at least two pages. A book can have different paper types for the front cover, the first page, other pages, the last page, or the back cover.
- A **booklet** is a print job that places two pages on each side of a sheet that can then be folded into a booklet that is half the size of the paper. Use the **Booklet Printing** drop-down list on the **Document** tab to control booklet settings.

 **NOTE:** Special pages are not supported with Booklet printing.

Follow these step to create a booklet using the HP Smart UPD settings:

1. In the application, click **File**, and then click **Print**.
2. Select the printer you want to use.
3. Click **Printer Properties** or **Properties**.
4. Click the **Document** tab.

 **NOTE:** **Two-sided Printing** must be set to **None** and **Pages per Sheet** must be set to **1**.

5. From the **Booklet Printing** drop-down list, select **Left binding** or **Right binding**.
6. From the **Scale / Resize** drop-down list, select **Print document on**, and then select the paper size for the booklet, such as 11x17 or A3, from the **Paper Size** drop-down list.
7. From the **Staple** drop-down list on the **Finishing** tab, select **Fold and Stitch**.
8. Click **OK**.

The booklet is printed.



NOTE: In some cases, a conflict between settings in the application and in the printing driver might result in an incorrect output.

For example, when printing a booklet in Publisher 2003, before selecting **File > Print**, select **File > Page Setup > Full page** (instead of **Booklet**), and click **OK**.

This forces the Booklet mode off in Publisher 2003 while keeping the booklet format. If this setting is not configured, the pages might print out of order because both the application and the printing driver reorder the pages.

Enable Tab Printing through the EWS

The **Tab Printing** feature can be enabled by using the HP Embedded Web Server (EWS).

1. To open the EWS, type the IP address of the printer in a web browser.
2. Click **Copy/Print**.
3. In the left pane, click **Manage Trays**.
4. Scroll down, and select the **Enable Tab Printing** check box.
5. Click **Apply**.
6. In **Printer Properties**, click the **Device Settings** tab, and then perform an **Update Now**.

Print on tab media

Follow these steps to print on tab media.

1. Load the tab media in the MP Tray with the long edge that has the tabs facing out in reverse collated order.
2. In the application, click **File**, and then click **Print**.
3. Click **Printer Properties** or **Properties**.
4. Click the **Document** tab.
5. Set **Tab Printing** to **On**.
6. From the **Divider Set** drop-down list, select the type of tab media.
7. From the **Paper Size** drop-down list, select the size of the tab media.
8. From the **Text Direction** drop down list, select the direction the text is printed on the tabs.



NOTE: This direction applies to all of the tabs.

9. From the **Tab Position** drop-down list, select the tab you are configuring.



NOTE: The **Auto** option automatically increments the tab position based on the tab type.

10. In the **Insert Before Page** field, type the number of the page that is positioned directly after the tab to be inserted.

11. In the **Text** field, type the text to print on the tab.
12. Click **Add** to add this to the list of tabs.
13. Repeat these steps for each tab.
14. Click **OK** when you are finished.

Print from a specific tray

HP printers can select a paper by the paper size and paper type. If multiple trays are loaded/configured for the same paper size, it is still possible to select a specific tray by using the paper type selection.


The paper types for the trays can be configured directly from the printer or through the printer's HP Embedded Web Server. The following are examples of the printer configuration:

- **Tray1: Size=Any Size; Type=Any Type**
- **Tray2: Size=Letter; Type=Letterhead**
- **Tray3: Size= Any Size; Type=Any Type or Plain**

To assign tray 2 as the default in HP Smart UPD, create a queue with the above settings.

If HP Smart UPD is already installed, use the following steps:

1. Go to the **Devices and Printers** folder.
2. Right-click the HP print queue, and then click **Printer Properties**.
3. Click the **Advanced** tab, and then click **Printing Defaults**.
4. From the **Preset** drop-down list, select **Factory Defaults**.
5. On the **Document** tab, select **Tray 2** from the **Paper Source** drop-down list.
6. Click **OK**.
7. Click **Apply**.

 **NOTE:** Do not use **Form to Tray Assignment** setting, which is accessed from the **Device Settings** tab in the installed HP Smart UPD, to select the paper tray.

6 Troubleshooting


Learn how to troubleshoot possible communication or connection issues between HP Smart UPD and the target printer.


Incompatible print settings messages

Incompatible print settings (constraints) messages are unsolicited messages that appear in response to specific selections in the printing driver. These messages alert you to selections that are illogical or impossible given the printer capabilities or the current settings of other controls.

Constraint messages are limited. The underlying software architecture might accept some settings that are illogical or impossible for the printer to perform. Sending a job with incompatible settings can lead to unexpected results. If print jobs do not print as expected, check the printer documentation for the printer capabilities.

In supported Windows operating environments, some technically invalid printing-driver configurations might result in warning messages. For example, duplexing is not possible when a transparency paper type is selected.

If you configure a setting and it is incompatible with other settings, an information icon  appears next to the setting name. To see a list of the settings that are incompatible, click the information icon. Note that the information icon also appears next to the names of the incompatible settings.

To resolve the conflicting settings, click the **Revert to the selected preset** icon . The printing driver resets the conflicting control back to its previous state.

Troubleshooting steps

Work through the following sequence of questions and procedures to troubleshoot possible communication or network connection issues between HP Smart UPD and the target printer.

1. Can HP Smart UPD print to the target printer?

No. Bidirectional communication might also fail because of connection issues between HP Smart UPD and the target printer.

2. Follow these steps to troubleshoot the network connection/port:

- a. Can you ping the target print product by the TCP/IP address? By the host name?
- b. Can you ping the print server by the TCP/IP address? By the host name?
- c. Is HP Smart UPD target port defined by the host name or the IP address?
- d. If pinging the host name fails, is the host name registered in DNS?

```
nslookup dns_name_of_device
```

- e. Does HP Smart UPD installed client traverse network subnets to the target print server or printer? If yes, is IPP and SNMP traffic allowed through these connection paths? To define the segments in the network path, run the following from HP Smart UPD install client:

```
tracert print_device_ipaddress
```

- f. Is the local host or the target print server running an internet firewall? Are ports 160 and/or 80 open?
- g. Can HP Smart UPD client host gain access to the printer's HP Embedded Web Server?
http://device_ip_address or https://device_ip_address
- h. Are there network issues, such as denial-of-service, at the print server or printer, a network service interruption, or an unauthorized and privileged access to the target printer or print server?

3. Does the target printer use bidirectional communication for Printer Automatic Configuration via HTTP or SNMP?

Bidirectional communication over the network might occur through IPP and SNMP, depending on the target printer. The errors that occur are specific to the protocol.

IPP

- a. Is IPP communication enabled in the device EWS page?
- b. Does the firewall on the HP Smart UPD installed host allow IPP traffic?

SNMP

- a. Do the community names for the installed HP Smart UPD host match the community name for the target printer?
- b. Does the firewall for the HP Smart UPD installed host allow SNMP traffic?
- c. If HP Smart UPD installed host is on a separate subnet, does the network route SNMP traffic?
- d. Is SNMP routing disabled? Wireless network security often disables SNMP routing as a security measure.
- e. Is SNMP v1/v2 set to Read Only at a minimum?

4. Install and test a new print queue.

Reduce the complexity to isolate variables. A simple test is to install HP Smart UPD downloaded from hp.com/go/smartupd using the default installation options on a clean system. During installation, create a new print queue targeted to a printer with an address on the test machine's subnet.

5. Is the network congested?

The HP Smart UPD bidi uses the SNMP protocol, which is carried on the network using HP Smart UPD protocol. The HP Smart UPD packets are low priority and can be discarded if the network is congested.

Troubleshooting FAQs

Find answers to frequently asked questions about using HP Smart UPD.

Table 6-1 Troubleshooting FAQs

Question	Answer
For non-permanent instance installations of HP Smart UPD, will the printer be queried every time?	If a user creates a permanent instance of a printer, settings are permanently saved to the local registry (like any other printing driver) and the user continues to print to that permanently created instance.
<p>After the Printer Automatic Configuration completes a successful bidirectional update, several features that my printer does not support appear in the user interface for HP Smart UPD.</p> <p>For example, why does the Device Settings tab show Tray X: Not Installed for several trays (where X is the tray number)?</p>	<p>The settings are placeholders for HP Smart UPD. HP Smart UPD does not know the specific settings before an automatic or preconfiguration of the driver's exact configuration occurs, so the user interface for HP Smart UPD must remain capable of displaying settings beyond the standard default settings.</p> <p>By preserving the setting locations, after completing the Printer Automatic Configuration update, the user interface can dynamically update the Not Installed settings to the current configuration when a change occurs to the printer configuration.</p>
Does the message "Windows Security Alert: Spooler Subsystem App" that is generated during the installation relate to the HP Smart UPD's installed bidirectional communication services over the network?	<p>The HP Smart UPD installation can make calls over the network using different ports and communication protocols for configuration, device capabilities, and status.</p> <p>For example, ports 160 and 80 might be used in the Printer Automatic Configuration process when HP Smart UPD uses bidirectional communication over the network to the target printer. If the print spooler uses ports that are not open, the firewall might need to be configured.</p>
Why does RGB color from the Color tab only have a NULL option?	<p>The Color Selection options on the Color tab in HP Smart UPD properties vary depending on the printer. HP Smart UPD configures the settings based on the printer model.</p> <p>If the Device Type in the Device Settings tab is manually set to Color and if there is no bidi communication with the color printer, HP Smart UPD displays NULL.</p> <p>The HP EasyColor option is not available either.</p>
Does HP Smart UPD support SNMP XPS v4?	<p>HP Smart UPD does not support SNMP XPS v4. Therefore, enabling or disabling SNMP XPS v4 at the HP printer has no impact on HP Smart UPD SNMP v1/2 print, status, or configuration.</p> <p>HP Smart UPD supports SNMP v1/2. All the HP printers that HP Smart UPD supports are v2 compatible.</p>
Does HP Smart UPD require SNMP for printing?	<p>No. The SNMP stack that HP Smart UPD installs is used only for returning printer configuration and printer status back to the printing driver.</p> <p>However, if the Microsoft SNMP stack used between the Microsoft spooler and printer are incorrectly configured (for example, SNMP name mismatch or enabled on one side but not the other), HP Smart UPD printer object might show a status of Offline.</p>

Table 6-1 Troubleshooting FAQs (continued)

Question	Answer
<p>What steps should be taken to confirm that there is an alignment of the SNMPv2 community name between the printer, HP Smart UPD SNMP stack, and MS SNMP stack?</p>	<p>The HP Smart UPD SNMP community name defaults to 'public.' Use one of the following methods to modify the SNMPv2 community name.</p> <p>Modify the SNMPv2 community name for an existing print queue</p> <ol style="list-style-type: none"> 1. From the Start menu, select Devices and Printers. 2. Right-click the printer, and then select Printer properties. 3. Click the Ports tab, and then click Configure Port. 4. Select the check box next to SNMP Status Enabled. 5. Type the SNMPv2 community name in the Community Name field. 6. Click OK. <p>Modify the SNMPv2 community name using the EWS</p> <ol style="list-style-type: none"> 1. Open a web browser, and then navigate to the printer's EWS by entering the printer's IP address in the address bar. 2. On the EWS home page, on the top navigation bar, click Networking. 3. In the left navigation pane, click Network Settings. 4. Click the radio button next to Enable SNMPv1/v2 read-write access to enable the setting. 5. In the Set Community Name and Confirm Set Community Name fields, type the SNMPv2 community name. 6. Click Apply to save the setting. <p>NOTE: The SNMP community name cannot be blank or end in a numeric value (characters 0 through 9 are reserved for multiport Jetdirect box functionality).</p>
<p>How does HP Smart UPD use SNMP?</p>	<p>HP Smart UPD's SNMP stack provides Automatic Configuration between HP Smart UPD print object and the HP printer, the Status Notification Popup after a new printer install and FILE-PRINT to HP Smart UPD printer, and the status message prompt for a manual duplex print job.</p> <p>HP Smart UPD (requester) and the printer (responder) use GET operations over TCP/IP connections. HP Smart UPD does not use SET operations.</p> <p>HP Smart UPD SNMPv2 functionality requires the following:</p> <ul style="list-style-type: none"> • The SNMP community name in HP Smart UPD SNMP stack and the Microsoft SNMP stack must match exactly. • The printer's SNMP settings must align with the Community Name in three places: HP Smart UPD printer object, the Microsoft operating system spooler, and the HP printer.
<p>How does HP Smart UPD use IPP?</p>	<p>HP Smart UPD uses IPP communication to obtain printer configuration by using the IPP Get-Printer-Attributes operation.</p> <p>The following features are enabled in SUPD through IPP only: Job Accounting, Max Sheets for folding, Secure Encrypted Printing, Paper Size, Media Type, RGB Color Selection, CMYK Color Selection, and Output Bin.</p>

A Frequently asked questions

Review the FAQs regarding HP Smart UPD installation, configuration, and use with various operating systems.

FAQs – HP Smart UPD installation and configuration

Find answers to common installation and configuration questions.

Table A-1 FAQs - HP Smart UPD installation and configuration

Question	Answer
Can I use HP Web Jetadmin to preconfigure HP Smart UPD?	Yes. HP Smart UPD supports preconfiguration through HP Web Jetadmin.
Is the printer queried every time it is printed to?	No. The printer is queried once and the settings are cached.
Are queues also updated with a new driver?	Yes. The Microsoft operating system updates all instances because each permanent instance has the same driver name, but has different registry entries. All queues that share the same driver name are updated.
If HP Smart UPD can discover my printer by using mDNS, but cannot communicate by using SNMP, what is the issue?	If the printer can be discovered by using mDNS, but cannot communicate by using SNMP, the Jetdirect might be configured so that SNMP is disabled. SNMP might also be disabled or might be using a non-default SNMP community name.
Are there any tips for using Microsoft's PrintMig?	Testing found limitations when using the PrintMig tool with both HP and non-HP printing drivers. For HP Smart UPD, first install HP Smart UPD on the target host to register all files and COM objects, and then perform the PrintMig restore on the host. Microsoft has placed the PrintMig tool on end-of-life.
What is the first step during an upgrade?	Updates to HP Smart UPD files are delivered through update services, the installation of service packs, the .NET framework, or via a hot fix from Microsoft that might impact driver upgrades, depending on the version. An upgrade has several steps that should be followed. To see what version of files are on the system compared to the version you are about to install, see Determine the current version of the shared printing driver files on page 90 . If the versions are different, this might increase the scope of testing required for an uneventful upgrade.
Is there a tool or method available to force clients to disconnect their print connection to the print server and re-establish the connection?	Yes. The HP Smart Print Administrator Resource Kit (HP Smart PARK) has the tool "prncon" which supports this functionality. Visit the HP Smart PARK on the Manuals page .
HP Smart Universal Printing Driver is seen in the Printers folder for HP Smart UPD. How can I make HP Smart UPD display the printer model name instead?	Follow these steps: <ol style="list-style-type: none">1. Right-click the queue in the Devices and Printers dialog box, and then select Printer Properties.2. Click the General tab.3. Enter the model name.4. Click OK.

Table A-1 FAQs - HP Smart UPD installation and configuration (continued)

Question	Answer
Are there thresholds or guidance limiters to scaling HP Smart UPD on a single print server?	HP Smart UPD does not have a bounded limit to scale of installation. The recommendation for how many queues to install on a single server is entirely site-dependent. Questions such as this are best answered by an IT administrator policy that defines the criteria for status and monitoring, server disk/CPU/network IO usage rates, print job throughput, peak load times, and so on. Some very well-managed sites with resources can run 1000 print queues on the appropriate server and satisfy redundancy and high-availability requirements.
What does WHQL look at when it breaks: file byte size, date of file, and so on?	When the printing driver is signed, part of the process is creating a hash of the contents of all the files that are part of the printing driver. If you alter even one bit in any file, the hash breaks.
Why am I unable to delete HP Smart UPD?	In some cases, HP Smart UPD might be still in use, which prevents it from being deleted. The print spooler must be stopped to release HP Smart UPD. Issue the following command from the command line: <code>C:\>NET STOP SPOOLER && NET START SPOOLER</code>
When I delete a printer that uses HP Smart UPD, is the standard TCP/IP port also deleted?	The answer depends on the operating system. On Windows 7 and Windows 2008 R2, the printer is deleted and the port associated with the printer is deleted if another printer is not using the port.
In some applications, it is possible to select a different paper source per page in the document. Does HP Smart UPD support this functionality?	No, HP Smart UPD does not support this functionality.
After installing HP Smart UPD and creating a print queue that prints to a monochrome printer, the Color tab is still visible in the properties of the print queue, but is not available in Printing preferences or Printing Defaults. How can this Color tab be removed in the properties screen?	This behavior is controlled by the operating system, not by HP Smart UPD. This behavior cannot be changed by an HP Smart UPD setting.
What does the following error message indicate? "Getting Printer Capabilities.... Failed to retrieve Device Capabilities. Try: Checking your network connection to device. Enabling IPP protocol through advanced printer settings"	The HP Smart Universal Printing Driver (by default) does IPP-based bi-directional communication when opening the Printing Preferences UI (PPUI) for the first time or when the user clicks "Refresh." In the event of the IPP-based bi-directional communication failing, this error message is displayed. Follow the onscreen instructions to troubleshoot the error.
If Passthrough of PCL5 is supported?	SUPD support only the passthrough of PCL5 to help enterprise deployment like SAP. SUPD does not generate PCL5 and does not support PCL5.
Why did the printer print an error page titled - "PCL XL Error" ?	"PCL XL Error" with a "MissingData" message can occur when there is a loss of connection and the printer receives only partial data, and therefore is not able to print the entire content. Instead, the error page is printed. To resolve this issue, fix any connection issues and try again.
Why did the printer receive a "MemAllocError" ?	A "MemAllocError" can occur when a memory intensive print job is sent to a low-configuration printer. To resolve this issue, try using lower print-quality setting such as Quick View .

Table A-1 FAQs - HP Smart UPD installation and configuration (continued)

Question	Answer
<p>The SUPD V4 driver displays the following features in Printer Properties but the printer does not support one or more of them:</p> <p>Model: HP Smart Universal Print</p> <p>Features</p> <ul style="list-style-type: none"> Color: Yes Double-sided: Yes Staple: Yes Speed: Unknown Maximum resolution: 1200 dpi 	<p>This can occur in Printer Properties with v4 drivers due to the following reasons:</p> <ul style="list-style-type: none"> • The features listed in printer properties are values from Microsoft. The information displayed for v4 drivers listed in Printer Properties in Windows cannot be dynamically changed by vendors like HP because Microsoft controls this information. <p>For v4 drivers, the information in this window is populated from the static configuration file (GPD) of the driver.</p> <ul style="list-style-type: none"> • Because SUPD v4 is a universal driver, it supports the superset of all the features and options available in HP Printers via the GPD. As a result, this static information can be a mismatch between the printer's actual capabilities and the features listed in the printer properties window. <p>Alternatively, in Printing Preferences, the driver intelligently configures itself depending on the printer connected, so only supported printer features and options are displayed.</p>

FAQs – Operating systems

Find answers to common questions regarding use of HP Smart UPD with various operating systems.

Table A-2 FAQs - Operating systems

Question	Answer
Can HP Smart UPD be used in an Apple Macintosh environment?	There are no plans for a Macintosh version of HP Smart UPD. HP printing drivers can be used, however, with the Apple Bonjour™ (formerly Rendezvous™) discovery mechanism. Bonjour behaves the same way HP Smart UPD does when looking for products on the local subnet (using mDNS).
Does HP Smart UPD support XPS print paths?	Yes. HP Smart UPD is an XPS printing driver that supports processing XPS as input. It converts the XPS input from the application to a printer-supported language such as PCL6, PS etc.
Can HP Smart UPD be used with direct IPP printing?	Yes. HP Smart UPD can print by using IPP. When you use the Add Printer Wizard , you can select the A network printer, or a printer attached to another computer option. For IPP printing specify: <code>http://<printer_ip>/ipp</code> or <code>https://<printer_ip>/ipp</code>
Can HP Smart UPD use IPP to print to a print server?	Yes. Client/server printing with HP Smart UPD over IPP is possible. For instructions on how to install the Internet Printing role and install printers on client systems, see the Windows Server documentation.
Can HP Smart UPD be used with the Web Services Delivery (WSD) port?	Yes. HP Smart UPD can print using WSD. One way to use WSD in Windows 7 is with Print Manager. Use Print Manager to install a new printer with Type of Device set to Web Services Printer . If HP Smart UPD was preinstalled, HP Smart UPD is automatically selected during printer creation and HP Smart UPD uses a WSD port for printing.

B HP Smart UPD deployment worksheet

Use this worksheet to guide your HP Smart UPD deployment.

General information

There are several issues to consider for large HP Smart UPD deployments.

Deployment considerations include the following:

- Do you primarily print in color or black and white?
- Does your company prefer that all users print in grayscale, with the option to manually select color?
- Should the default be set to print in simplex (single-sided) or duplex (double-sided)?
- Does your company prefer that all users or user groups print in simplex or duplex?
- Are all the users in your Windows environment a Local Administrator for their PC? If not, what are the default capabilities for the user?
- Is your company required to comply with any government or industrial regulations or restrictions regarding the process of printing jobs?
- Are all printer log files retained? What is your process for retaining printer log files?
- Is there a preferred driver language (PCL 6) for printing?
- Do users have any special production or operational environments (non-application print) that require specialized drivers or non-standard printing drivers?
- Do any users or groups use PIN printing? If so, which users or groups use PIN printing?
- Do any users or groups use encrypted printing? If so, which users or groups use encrypted printing?

Port and protocol information

How are IP addresses distributed to your printers?

- If static IP addresses are distributed, how are they reserved (DNS, DHCP reservation, BOOTP)?
- When IP addresses are configured, are printers set to DHCP, BOOTP, or Manual?

Ports and protocols:

- Is SNMP enabled across all the subnets in your environment? If not, describe the subnets where SNMP is disabled and if it is possible to enable SNMP.
- What versions of SNMP (SNMPv1/v2, XPS v4, other) are enabled in your network infrastructure?
- Verify that the Get Community names are consistent. Bidirectional communication between HP Smart UPD and the printer is required to gather product-specific configuration information.

- Make sure that mDNS broadcasts and IP multicast services are allowed on the network for HP Smart UPD to discover products.
- Use the HP Embedded Web Server (EWS) to activate the mDNS protocol on the printer.
- Make sure a firewall or router is properly configured to allow HP Smart UPD to communicate over the necessary network ports.

Table B-1 Internal

Port	Type	Service	Used by
161	UDP	SNMP	HP Smart UPD
9100	TCP	Print Data	HP Smart UPD
443/631	IPPS/IPP	IPPS/IPP	HP Smart UPD

Table B-2 External Software

Port	Type	Service	Used by
53	TCP	DNS query	Microsoft and HP Installers
5353, 5354	UDP	Multicast DNS	Microsoft and HP Installers
80	TCP	HTTP	HP EWS

Printer server environment

Use this worksheet for each server to be migrated.

Print server information

Table B-3 General production printer server information

Question	Answer
How many print servers are in production in your current environment?	-----
Is there a print server for each location or are there regional print servers?	-----



NOTE: If the answer is more than one, a checklist must be filled out for each of the servers that are to be created or migrated.

Are there any security settings, such as Access Control Lists (ACLs), that you want configured for products at the printer or queue level?

Table B-4 Production printer server information

Item	Information
Server name	-----

Table B-4 Production printer server information (continued)

Item	Information
Operating system version	-----
32-bit or 64-bit?	-----
Cluster environment?	-----
Active-Active or Active-Passive?	-----
Names of physical nodes	-----
Is this print server dedicated, or does this server have other server roles (file/printer, DNS/print, and so on)?	-----
Total number of print queues on the server?	-----
Print queue preconfiguration settings	<ul style="list-style-type: none">• -----• -----• -----

Goals


Choose one of the following goals for the deployment:

- **New**—Set up a new server that has new queue names.
- **Replace**—Set up a new server to replace an existing server. Use the queue names defined on the existing server as the queue names on the new server.
- **Upgrade**—Upgrade print queues on an existing server to HP Smart UPD.

Set up a new server that has new queue names

To set up new server that has new queue names, prepare a list of the following information

- Queue name
- HP printer model
- Port name and/or IP address

 **NOTE:** The HP print server does not support all HP printer models. Compare the list you created to the list of printers that HP Smart UPD supports. A list of supported printers is available at this website: hp.com/go/smartupd

Make a list of the queues that will use HP Smart UPD and the queues that will require a printer-specific driver.

Upgrade the print queues on an existing server to HP Smart UPD

To upgrade the print queues on an existing server to HP Smart UPD, collect the following information.

How will be server be backed up before the migration begins?

- Use the Microsoft Print Migrator 3.1 tool to back up the print servers.

- Will the backup be verified?
- Is a test server available?

⚠ CAUTION: HP does not recommend attempting to upgrade drivers to HP Smart UPD on a running production server.

- Will the test server become the new production server, or will the production server also need to be updated?
- Microsoft file version information:
- Print queues and drivers:
 - Queue name: _____
 - HP driver name or HP printer model: _____
 - Driver version: _____
 - Port name and IP address: _____
 - Kernel or user mode driver: _____

📝 NOTE: You can create this list automatically by running the PRNMNGR.VBS script on the server.

Driver mapping:

Not all of the HP drivers on the existing system can be migrated to HP Smart UPD. To develop a list of potential migration candidates, compare the list you created to the list of products that HP Smart UPD supports.

Decide what you want to migrate:

- Everything that is supported by HP UPD to HP Smart UPD
- A previous version of HP Smart UPD to a later version of HP Smart UPD
- Only HP kernel mode drivers
- Install HP Smart UPD only for new printers

Mark the list to indicate which queues will use HP Smart UPD and which queues will require a native driver.

What are the print queue preconfiguration settings?

- _____
- _____
- _____

Are there any security settings, such as Access Control Lists (ACLs), that you want configured for products at the printer or queue level?

Point and Print client information

How many clients?

- Windows 10 32-bit: _____
- Windows 10 64-bit: _____

Does the capability exist to run software or adjust client settings by using login scripts or AD Group Policy?

C HP Smart UPD deployment flowcharts

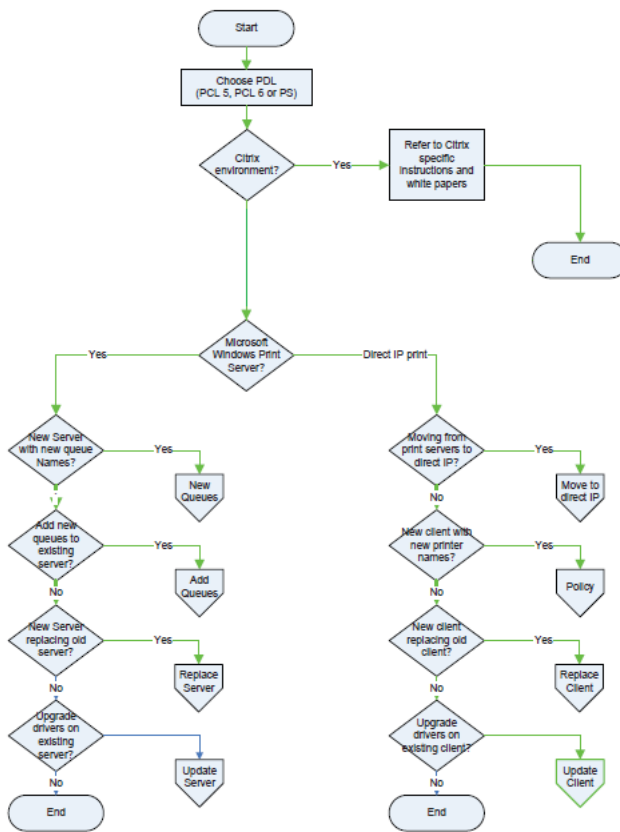
The HP Smart UPD can be installed and configured many ways. The following flowcharts contain green lines that outline the recommended deployment paths. These configurations allow for the simplest deployment and implement the full functionality of HP Smart UPD.

All of the paths outlined on the flowcharts are supported, but following some of the paths might involve extra steps or limit the functionality of HP Smart UPD. There are valid technical and business reasons for using the alternate paths, but when in doubt, follow the green line.

Start HP Smart UPD deployment

Learn about the recommended path for starting HP Smart UPD deployment.

Figure C-1 Deployment path for starting the HP Smart UPD deployment



Microsoft Windows Print Server

In a print server environment, there are four possible methods for deploying HP Smart UPD.

1. Set up a new server with new queue names

The administrator sets up a new print server and assigns new names to all the print queues.

2. Add new queues to existing server

The administrator adds HP Smart UPD to an existing print server and uses HP Smart UPD to create additional queues.

3. Set up a new server to replace an existing server

The administrator sets up a new print server that replaces an existing print server. This method differs from method 1 because the administrator wants this server to have the same queue names as the server it replaces to minimize the impact on existing installed client connections.

4. Upgrade the drivers on an existing server

The administrator upgrades the existing HP drivers on an existing print server to the latest version of HP Smart UPD.

Direct IP printing

Direct IP printing is an environment where the Windows client prints directly to the printer, either network connected or directly connected with a USB or LPT port. In the direct IP Printing environment, there are four possible methods for deploying HP Smart UPD.

1. Move from print servers to direct IP printing

The administrator moves from a print server environment to direct IP printing.

2. Install a new client with new printer names

The administrator installs new client PCs and uses HP Smart UPD.

3. Set up a new client to replace an existing client

The administrator replaces or upgrades the client PC hardware or operating systems and uses HP Smart UPD. The administrator wants the new PC to have the same list of printers with the same names as the old PC to minimize the impact on the users, or the users might not have administrator rights and cannot add printers.

4. Upgrade the drivers on an existing client

The administrator upgrades the existing HP drivers on an existing client to the latest version of HP Smart UPD.

Client driver deployment and software distribution systems

Printing driver installation must be done through an account that has administrator rights on the client PC. This is how the Windows operating system is designed, and it is for good security reasons.

If all the client users have administrator rights, HP Smart UPD can be deployed with the following methods:

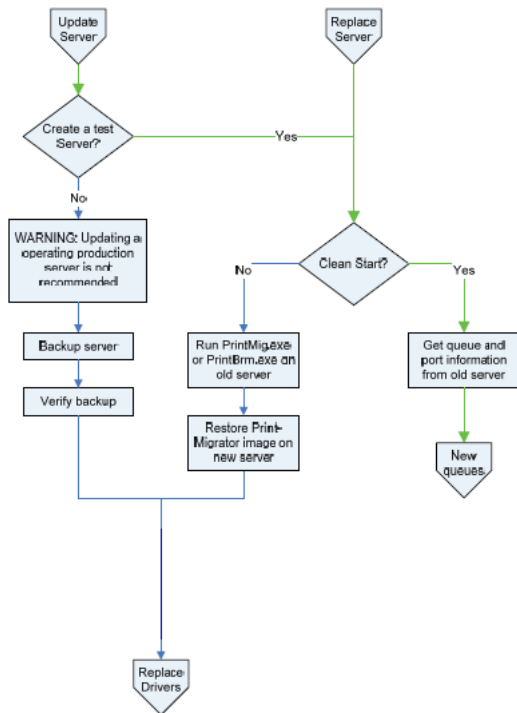
- Create a login script that performs the installation.
- Put HP Smart UPD on a local file system or a file share that is accessible to all users.

If the client users do not have administrator rights, the installations must be done either by someone who has administrator rights or by a software distribution system.

Update or replace the server

Learn about the recommended path for updating or replacing the server.

Figure C-2 Deployment path for updating or replacing the server



Update the server

When considering an update to an operating production server, HP strongly recommends that you set up a test server and perform the initial upgrade and testing on the test server.

Create a test server

The procedure for a clean start is similar to the procedure for replacing an existing server.

Replace the server with a clean start

Get queue and port information from the old server.

The Microsoft PRNMNGR.VBS and PRNPORT.VBS tools simplify the task of gathering information from the old server, such as queue names, driver names, port names, and IP addresses. This information can be used later to create the new queues manually or to automate the process by scripting.

Replace the server by importing the drivers and queues from the old server

Run PRINTMIG.EXE or PRINTBRM.EXE on the old server.

Restore the Print-Migrator image on the new server.

If the test server requires the same configuration as the old server, the Microsoft PRINTMIG.EXE or PRINTBRM.EXE tool can be used to import the configuration from the old server to the test server.

NOTE: Not all drivers are compatible with PRINTMIG.EXE. Make sure that you inspect the error log after the restore. The PRINTBRM.EXE tool is only available on later versions of the Microsoft operating systems, such as Windows 7. PRINTBRM.EXE can import from a down-level OS, but it might not be able to restore to a down-level OS.

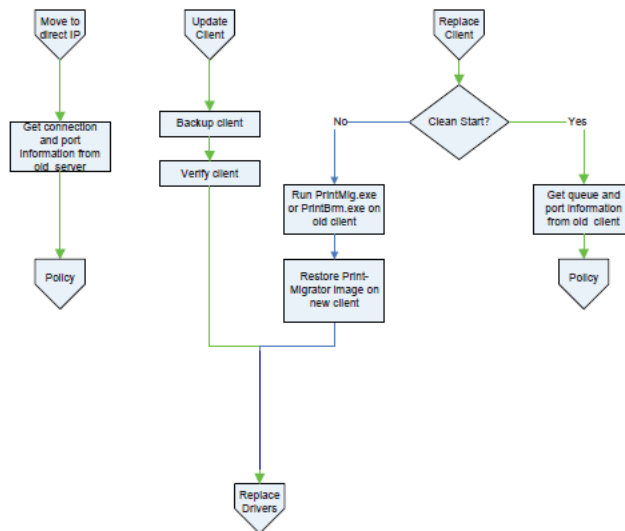
HP does not recommend updating printing drivers on an operating production server. Besides the obvious interruption of printing while the printing drivers are being replaced, other unforeseen problems might occur due to incompatibilities between the versions of the shared files currently on the system and the versions of the shared files about to be installed. For more information, see [Determine the current version of the shared printing driver files on page 90](#). If this is the only option, HP recommends that you make a full backup of the server before making any changes, so that there is a fallback plan if a problem occurs.

Deploy client printing

Learn about the recommended path for deploying client printing.

This section only applies to direct IP print deployments.

Figure C-3 Deployment path for client printing



Replace the client with a clean start

Get queue and port information from the old client.

The Microsoft PRNMNGR.VBS and PRNPORT.VBS tools simplify the task of gathering information from the old server, such as queue names, driver names, port names, and IP addresses. This information can be used later to create the new queues manually or to automate the process by scripting.

Proceed to the section on Policy.

Replace the client by importing the drivers and queues from the old server

Run PRINTMIG.EXE or PRINTBRM.EXE on the old client.

Restore the Print-Migrator image on the new client.

Use the Microsoft PRINTMIG.EXE or PRINTBRM.EXE tool to import the configuration from the old client to the test client.



NOTE: Not all drivers are compatible with PRINTMIG.EXE. Make sure that you inspect the error log after the restore. Also, the PRINTBRM.EXE tool is only available on later versions of Microsoft operating systems, such as Windows 7. PRINTBRM.EXE can import from a down-level OS, but it might not be able to restore to a down-level OS.

Update the client

When updating a client, HP strongly recommends that you set up a test client and perform the initial upgrade and testing on the test client. For more information about versioning printing driver shared files, see [Determine the current version of the shared printing driver files on page 90](#).

Policy

This section applies to direct IP print deployments only.

Policy means choosing settings other than the HP UPD defaults and applying them during or after the deployment. These settings can include who can print in color, setting grayscale or duplex to be the default setting, or assigning printers to users based on department, floor, and so on.

The policies can be set through pre-configuration utility or through Active Directory. After setting the policies, the driver can be installed through the HP Smart UPD Installer.

Using Active Directory

The decision to use Active Directory depends first on whether there is an Active Directory domain available, and the granularity of policy desired.

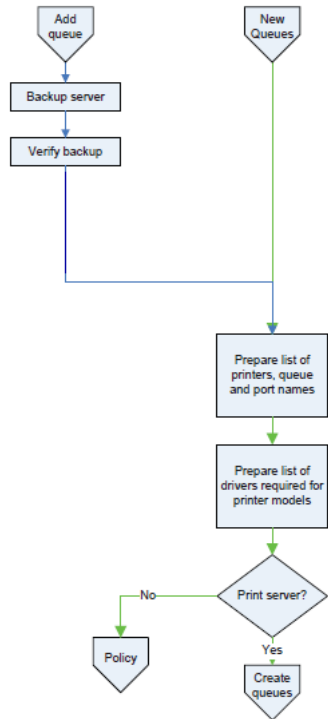
To set up Active Directory Policy, the administrator defines the policy settings in a Group Policy Object (GPO) and then assigns that GPO to the domain, site, one or more Organizational Units (OU) or users. Group Policy Objects cannot be assigned to security groups. If the administrator wants to set up domain-wide or site-wide policy with overrides for specific individuals, then AD is a viable choice. On the other hand, if the administrator wants finer-grained policy than the OU structure can provide, the options are to restructure the AD structure.

Add queues

Learn about the recommended deployment path for adding queues.

This section applies to both server deployments and direct IP print deployments.

Figure C-4 Deployment path for adding queues



Add queues

When you add a new printing driver (HP Smart UPD) and new print queues to an existing server, you might encounter change-management issues similar to upgrading drivers. In addition to the problems that can occur from increasing the load on an existing server, unforeseen problems might occur due to incompatibles between the versions of the shared files currently on the system and the versions of the shared files about to be installed. For more information about versioning printing driver shared files, see [Determine the current version of the shared printing driver files on page 90](#). If this is the only option, HP recommends that you do a full backup of the server before making any changes, so there is a fallback plan if a problem occurs.

New queues

Prepare a list of the printers, queue names, port names, and port settings

To create new queues on a new server or client, make a list of all the printers that are to be connected. Include the printer IP address or host name. If you decide not to use the default port-naming convention, you might also want to decide on a printer-naming convention, location information, and port name convention.

Prepare a list of the printing drivers required for the printer models

After you have a list of all the printers, the next step is to decide what printing drivers to use. For the most current list of printers that HP Smart UPD supports, go to hp.com/go/smartupd. For the printers that HP Smart UPD does not support, download the appropriate drivers from the manufacture's website.

Print server

HP Smart UPD in the direct IP print mode supports the application of policy in a user-by-user basis. If this type of configuration is desired, proceed to the Policy section.

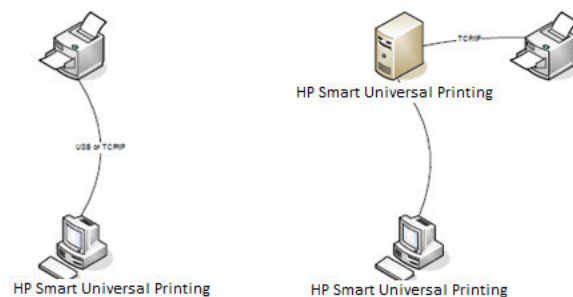
version of these files on your system and whether installing a printing driver, service pack, and so on will cause an upgrade. When an upgrade takes place, all printing drivers that use those shared files are impacted, so make sure you verify that all the printing drivers that use these shared files work with the latest versions.

Follow these steps to determine the current version of these shared files:

1. Open the **Devices and Printers** folder.
2. Select a printer, and then click **Print server properties** at the top of the window.
3. Click the **Drivers** tab.
4. In the **Property** column, see **File version**.

Basic printing

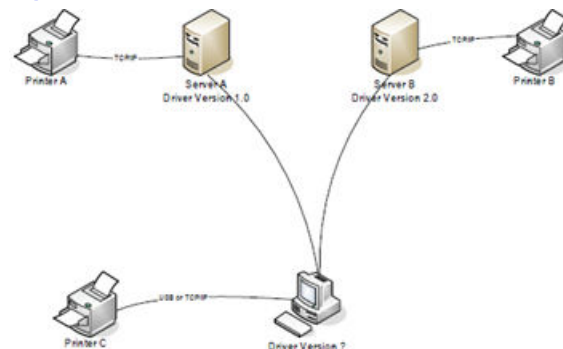
Figure C-6 Basic print environments



In both of the topologies shown in this diagram, the version of the printing driver does not matter as long as it is compatible with the printers. On the left, only one driver must be installed on the client to print to one or more printers. On the right, a simple Point and Print configuration is shown where only one printing driver must be vended down from the server to the client for printing. On a print server, HP recommends using the version-specific name for HP Smart UPD.

Complex print environments

Figure C-7 Complex print environments



This diagram shows a more typical enterprise printing environment where a client can be connected to more than one print server and might also have directly connected products. In these situations, careful driver version management is critical.

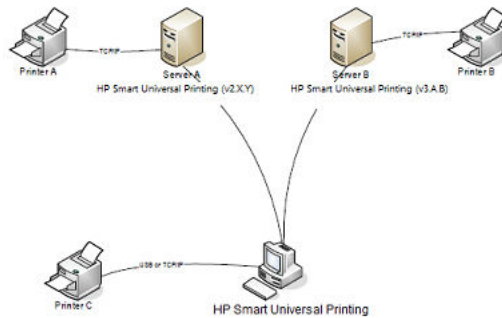
Consider the following scenario in this diagram: The client first Plugs and Plays with printer C, causing the preloaded printing driver XPS v4.0 to be installed. Next, the client connects and prints to server A. Microsoft Point and Print recognizes that the printing driver version on the client (XPS v4.0) does not match the printing driver version on the server (v1.0), so the server installs driver v1.0 on the client.

Then the client connects to and prints to server B. Again Point and Print recognizes the printing driver version difference and installs printing driver v2.0 on the client.

The net result is that every time the client switches from one print server to another, a printing driver installation takes place. For the client Plug and Play connection to printer C, the printing driver is also changed from the original XPS v4.0 to either v1.0 or v2.0.

Solution

Figure C-8 Solution



There are two solutions to this problem: One solution is to make sure that every client and every server in the enterprise is using the same version of the printing driver. However, given the size of most networks, this solution is impractical. The other solution is to use the version management feature of HP Smart UPD.

D Support information to collect

To efficiently troubleshoot and resolve an issue, you must collect basic and extended information related to the reported incident. Use this worksheet as the first step to contacting technical support.

Symptoms

Use this list to fully describe the symptoms of the problem.

1. What is the reported issue?
2. What are the symptoms?
3. Do you know the location of the issue (client, server, printer)?
4. Can you provide error messages and location source?
5. How often does problem occur?
6. What are the exact steps to produce the reported issue?

Printing driver

Use this list to collect information about the printing driver.

Determine HP Smart UPD version

1. In the **Printers** folder, right-click HP Smart UPD driver/queue, and then select **Printing Preferences**.
2. Click the information icon ⓘ in the upper-right corner of the dialog box. The **Information** dialog box opens with the printing driver version. Click **OK** to close the dialog box.
3. Test the latest version of HP Smart UPD available from hp.com/go/smartupd.


Does the error occur with the latest version of the driver from hp.com?

Determine the installation details

1. What is the printer description language, PCL 6?
2. Is this a new installation of HP Smart UPD or an upgrade of an existing HP Smart UPD installation?
3. Is the installation of HP Smart UPD on the server, on the print client, or vended from print server to client (PnP)?
4. What is the method of installation? Does each method produce the same result?
 - Add Printer Wizard
 - Point and Print vended from Microsoft Print Server

The V3 version of HP Smart UPD is vended. The V4 version of HP Smart UPD must be prestaged on the client.

- Other
 - **Printers** folder > **Server Properties** > **Drivers** tab > **Add or Reinstall**
 - Custom PRINTUI.DLL

 **NOTE:** Do not select or upgrade a driver by going to **Printers** folder > **Printer properties** > **Advanced** > **New Driver**.

5. Determine which port is in use (TCP, USB, and so on). Open the **Printers** folder, right-click the printer name, select **Printer properties**, and then click the **Ports** tab. Which Port is selected? What settings are defined, if applicable, for the port (select Configure Port)?
6. Was the driver preconfigured before HP Smart UPD installation?

Is Printer Automatic Configuration enabled (default)?



Yes or No.


Environment specifications

Use this list to collect information about the environment specifications.


Version of Microsoft operating system (print server and print client)

To obtain system information, use one of the following methods.

- Brief–Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type `WINVER.EXE`.
- Extended–Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type `CMD.EXE` to open the command prompt dialog box. At the command prompt, type the following command:


```
/k SYSTEMINFO.EXE
```
- Complete–Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type `MSINFO32`.

Microsoft Event log (spooler errors, and so on)?

Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type `EVENTVWR.MSC`.

Printer connectivity

1. Is the printer direct connected? If so, how is it connected (USB or network)?
2. Network and connectivity settings
 - a. IP addresses
 - i. Printer server
 - ii. Print client

- iii. Print product
- b. Print path network availability (client/server/printer). Execute the following commands:
 - i. `ping ip_address`
 - ii. `telnet ip_address`
 - iii. `Tracert ip_address`
 - iv. `http://device_ip_address` (or `https://device_ip_address`)
- c. Is SNMP enabled?
 - i. Is it able to be routed in your network?
 - ii. SNMP Community Name
 - `prnport -l`

Printer information

Use this list to collect printer information.

1. Printer model name.
2. Printer model firmware. Methods to obtain:
 - Printer control panel (print a configuration page).
 - HP Embedded Web Server (`http://ip_of_print_device`). See *Device Configuration Firmware Datecode*.
 - HP Web Jetadmin
3. Error information displayed or printed out from the product:
 - a. Error message content.
 - b. Event log:
 - Displayed from the control panel or HP Embedded Web Server.
 - Printed on the configuration page (last 3 items).
 - Printed from the control panel or HP Embedded Web Server (entire log).
4. Device configuration page. The product configuration can be obtained by using either of the following methods:
 - Printing at the printer control panel.
 - Printing a test page. Open the **Printers** folder, right-click the printer name, select **Printer properties**, and then click the **Print Test Page** button.


Application



Identify the applications affected and the application version number.

- Open the **Help** menu in the application, and select **About** to find the application version number.
- Provide test documents specific to reproducing the issue.

Files to collect

The following list contains information that might be requested to continue troubleshooting for the purpose of debugging, analyzing, and creating reproducible test cases.

1. MSINFO32—Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type `MSINFO32 . EXE`. Save the *.INFO file to disk.
2. System Information—From a command prompt, pipe the output to file:


```
C:\>SYSTEMINFO . EXE >SYSTEMINFO . TXT
```
3. For more information, see the [Microsoft Support Diagnostics Self-Help Portal](#).
4. Microsoft Event Viewer Logs—Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type `EVENTVWR . MSC`. Select the tree node, and then select **Save Log File As...** from the **Action** menu to save the log file.
5. PRN file—Application dependent. Example: Right-click the **Start** icon  in the lower-left corner of the screen, and then select **Run**. Type `WRITE . EXE`. Select **File**, and then select **Print**. Select **Print To File**, and save to `FILENAME . PRN`.
6. Application file—Provide a sample file from the application that created the reported issue.
7. Print a test page—Open the **Printers** folder, right-click the printer name, select **Printer properties**, and then click the **Print Test Page** button. Scan the output page to a distributable computer file format. Options to create the page include the following:
 - Device Configuration Page: Print from the printer control panel.
 - **Printers** folder > **Printer properties** > **Print Test Page**.
8. Scan of the printed document—After printing a page, use a colored pen to mark up and identify the issue with the printed output. Scan the marked up page back to a distributable computer file format.
9. Device Network Settings—Methods available include the following:
 - Telnet to the product, output all information to the console, select the upper-left icon, and right-click **EDIT-SELECT-ALL**. Repeat the right-click for **EDIT-COPY**. Paste into a file and save.
 - HP Embedded Web Server to printer:


```
http://ip_of_printdevice
```
10. Screen shots—Error dialogs, user interface, and so on.
11. Microsoft crash dump file—Operating system:

- Windows 7: [Manually generate a memory dump file](#) (dump files, when enabled, are stored by default in Drive:\Users\UserName\AppData\Local\Temp)



NOTE: NOTE: If a process hangs or is very slow, starting with Windows 7, the task manager has the ability to take a process memory dump file that can be useful to the lab to determine what the system is doing or waiting for. To create a dump file:

1. Start Task Manager.
2. Go to the **Processes** tab.
3. Select the process that is hanging. A good place to start is SPOOLSRV.EXE.
4. Right-click, and select **Create Dump File**.
5. Make a note of the location where the system stored the dump file. The location is not user selectable.

12. Directory file listing—From the command-line prompt:

```
C:\>DIR %SYSTEMROOT\system32\spool\drivers /s >C:\w32x86.tx
```

13. SETUPAPI.LOG: Located in %SYSTEMROOT%

14. Screen shots—Error dialogs, user interface, and so on.

15. Registry exports—For the following three targets:

```
regedit.exe /e c:\updreg1.txt
"HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard\HP Print Settings"
"HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard\HP SSNP"
"HKEY_CURRENT_USER\Software\Hewlett-Packard\HP Print Settings"
```

HP Smart UPD v4 user interface logs

Every time the user interface is opened, the following logs are created.


- HP.ONEDRIVER.V4.PRINTEREXTENSION.EXE logs
 - {LogDirectory}\HP.ONEDRIVER.V4.PRINTEREXTENSION.LOG
- PT/PC dumps
 - {LogDirectory}\{AppStartDateTime}\{INDEX}_PRINT_SCHEMA_TICKET_{FUNCTIONNAME}.XML"
 - {LogDirectory}\{AppStartDateTime}\{INDEX}_PRINT_SCHEMA_CAPABILITIES_{FUNCTIONNAME}.XML"
- UI Snapshot
 - {LogDirectory}\Snapshot_{AppStartDateTime}\DPB
 - {LogDirectory}\Snapshot_{AppStartDateTime}\QPB
 - {LogDirectory}\Snapshot_{AppStartDateTime}\UPB
 - {LogDirectory}\Snapshot_{AppStartDateTime}\PC.XML
 - {LogDirectory}\Snapshot_{AppStartDateTime}\PT.XML

- PTPC Converter
 - {LogDirectory}\CONVERTEDSTANDARDPC.XML

To enable all the previous logs:

Copy config file (HP.ONEDRIVER.V4.PRINTEREXTENSION.EXE.CONFIG) to either of the following two locations:

1. C:\Users\\AppData\Local\HP\- 2. C:\Users\\AppData\Local\Temp\HP\

 **NOTE:** The {LogDirectory} will be one of these two locations, depending on where the config file was copied. Path 1 (listed previously) would take priority over path 2 if both locations have the config file present.

HP Smart UPD v3 user interface logs

Every time the user interface is opened, the following logs are created.


Logging is supported at following events:

- Driver Installation
- UI Related (Opening, Closing, Modifications)
- Printing

To enable all the previous logs:

Set the following key in the registry:

1. Under `Computer\HKEY_LOCAL_MACHINE\SOFTWARE\HP\HPSUPD`, set the DWORD Value Data "EnableLog" to 1.

 **NOTE:** If the path not present, create an "HP" key under HKLM\Software:

1. Under `HKLM\Software`, create an HP key.
 2. Under `HKLM\Software\HP`, create an HPSUPD key.
 3. Under `HKLM\Software\HP\HPSUPD`, create a DWORD value as "EnableLog" and then set the Value Data to 1.
-
2. Create "temp" folder under c drive (C:\temp).

The `C:\Temp\HPSUPD_V3.log` will be generated for all events listed above.

HP Smart UPD printing logs

When the user selects Print from any application, the following logs are created.


- Client Interface logs
 - {LogDirectory}\CLIENTINTEFACE.LOG
- PT dumps

- {LogDirectory}\H_JOBSETUP_INPT.XML
- {LogDirectory}\H_JOBSETUP_OUTPT.XML
- {LogDirectory}\JOBEXTPT.XML
- Render Logs
 - {LogDirectory}\XPSDYNAMIC.TXT

To enable all the previous logs:

Create a new **DWORD** non-zero value “**DebugTraceEnable**” under the registry key.

- HKLM\SYSTEM\CurrentControlSet\Control\Print\Printers\{PrinterName}\PrinterDriverData

 **NOTE:** The {LogDirectory} will be C:\Temp for all the above logs and {PrinterName} is to be replaced with the Printer Queue Name.

HP Smart UPD Refresh logs


When the user selects the **Refresh** button in the user interface, the following logs are created.

- Refresh button progress logs
 - {LogDirectory}\CUSTOMBIDI.LOG

To enable the previous log:

Create a new **DWORD** non-zero value “**DebugTraceEnable**” under the registry key.

- HKLM\SYSTEM\CurrentControlSet\Control\Print\Printers\{PrinterName}\PrinterDriverData


 **NOTE:** The {LogDirectory} will be C:\Temp for all the above logs and {PrinterName} is to be replaced with the Printer Queue Name.

- Bidi JSON from IPP [Refresh Button]
 - {LogDirectory}\JOBJSONDEVCAPS.JSON

To enable the following log:

Copy the config file (HP.ONEDRIVER.V4.PRINTEREXTENSION.EXE.CONFIG) to either of the following two locations:

1. C:\Users\<user>\AppData\Local\HP\<DriverName>
2. C:\Users\<user>\AppData\Local\Temp\HP\<DriverName>

 **NOTE:** The {LogDirectory} will be either of the previous two locations, depending on where the config file was copied. Path 1 would take priority over path 2 if both locations have this config file present.

The file HP.ONEDRIVER.V4.PRINTEREXTENSION.EXE.CONFIG should have the following contents:

```
<?xml version="1.0" encoding="utf-8" ?>
<log4net xsi:noNamespaceSchemaLocation="http://csharptest.net/
downloads/schema/log4net.xsd" xmlns:xsi="http://www.w3.org/2001/
XMLSchema-instance">
```

```

<root>
  <!--
  Log Level :
  ALL
  DEBUG
  INFO
  WARN
  ERROR
  FATAL
  OFF
  -->
  <level value="ALL"/>
  <appender-ref ref="LogFileAppender"/>
</root>
<appender name="LogFileAppender"
type="log4net.Appender.RollingFileAppender">
  <file type="log4net.Util.PatternString"
value="%property{LogFilePath}\HP.OneDriver.V4.PrinterExtension.log"/>
  <appendToFile value="true"/>
  <rollingStyle value="Size"/>
  <encoding value="utf-8"/>
  <maxSizeRollBackups value="10"/>
  <maximumFileSize value="10MB"/>
  <staticLogFileName value="true"/>
  <layout type="log4net.Layout.PatternLayout">
    <param name="ConversionPattern" value="%date{yyyy-
MM-dd hh:mm:ss,fff} %10timestamp %5level [%thread] -
%message%newline%exception"/>
  </layout>
</appender>
</log4net>

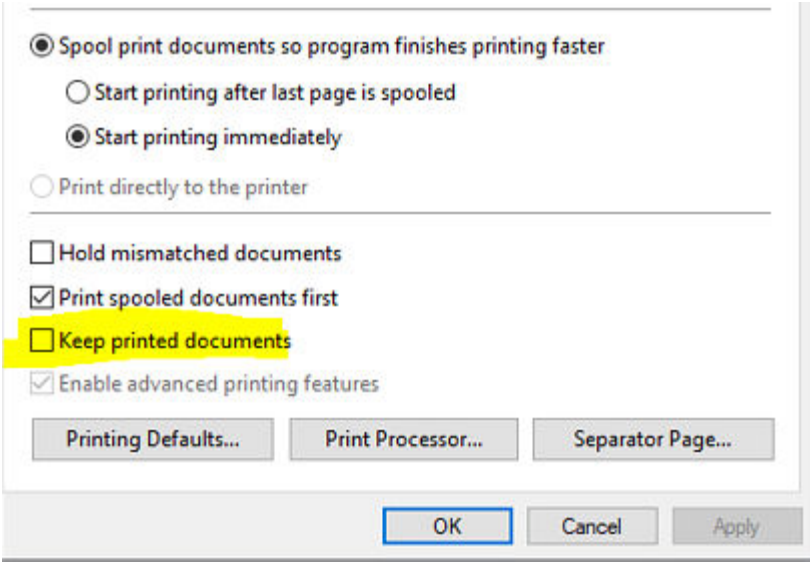
```

How to collect a spool file

To collect a spool file, follow these steps.

1. Open **Devices and Printers**. For instructions, see section *Determine which version of HP Smart UPD is installed*.
2. Right-click the print queue and open printer properties.
3. Navigate to the **Advanced** tab.
4. Select **Keep Printed Documents** and click **Apply**.
5. Print a test page.
6. Locate the spool file, with *.SPL file name listed in C:\Windows\System32\spool\PRINTERS.
7. Copy the spool file for further investigation.

8. After the spool file is copied, clear the **Keep Printed Documents** option and click **Apply** to stop storing spool file.



The image shows a printer properties dialog box with the following options:

- Spool print documents so program finishes printing faster
 - Start printing after last page is spooled
 - Start printing immediately
- Print directly to the printer
- Hold mismatched documents
- Print spooled documents first
- Keep printed documents**
- Enable advanced printing features

Buttons: Printing Defaults..., Print Processor..., Separator Page..., OK, Cancel, Apply

9. Click **OK** to close the properties dialog.

Glossary

[FILENAME].INF

A driver information file designed within the required Microsoft operating system specifications. This file is used during installation of the Windows printing driver. For more information, see the Microsoft document [Printer INF File Entries](#).

Bidirectional Communication (bidl)

See printer automatic configuration

Capabilities mode

Capabilities mode is a generic term used to describe how settings are shared between the firmware and printing driver. Firmware on supported devices can share the capabilities of the device and input/output devices with HP Smart UPD in order to configure settings directly in HP Smart UPD.

Device

The physical output device at the end of the print connection (for example, a printer or MFP).

Device mode

Device mode is a generic term used to describe how settings are shared between the firmware and printing driver. Device mode is how prior releases of the firmware shared device information with HP Smart UPD, such as part numbers and model numbers, with HP Smart UPD mapping the device information to settings in the printing driver.

Driver Name

By default, HP Smart UPD installation sets the printer name to match the printing driver name for the first installed printer. The vendor defines the printing driver name. The Microsoft operating system reads the printing driver name from the driver's *.INF file. To view the "Driver" name, from the **Printer** folder, right-click an installed printer, and select **Properties** or **Printer Properties**. Go to the **Advanced** tab, and find the **Driver** field.

During an HP Smart UPD installation that uses the Add Printer Wizard, the option exists to install HP Smart UPD as either non-version specific or version specific. Selecting either option provides the same set of printing driver features.

The version-specific option allows installation of two or more HP Smart UPD versions on the same system. Here is an example of an HP Smart UPD version-specific driver name:

HP Smart Universal Printing (X, Y, Z)

With the non-version-specific option, all printer names will use the same driver version of the installed HP Smart UPD. Here is an example of an HP Smart UPD non-version-specific driver name:

HP Smart Universal Printing

As a best practice, HP recommends installing HP Smart UPD in version-specific mode to best support control of driver version upgrades and new product introductions. This benefit allows multiple versions of HP Smart UPD to be installed on the same system. Administrators can create new print queues for new print products without the need to recertify/retest existing deployed products to the new driver version.

Version-specific and non-version specific HP Smart UPD installations can exist on the same system. The same HP Smart UPD version can be installed two times on the same system using an HP Smart UPD version-specific install, followed by an HP Smart UPD non-version-specific install option. The result is two different driver names, both using the same driver version.

HP Smart Universal Printing

HP Smart Universal Printing (X, Y, Z)

Driver Store

After a printing driver is installed on the system, the printing driver is added to the Windows driver store. The driver store facilitates installation of a new printer without requiring the user to specify the driver file location using Browse, Have Disk, or other Microsoft-supported methods.

Driver, Product-specific

The driver is specific to a particular model of print product and not universal.

Duplex

Printing on both sides of a single sheet; opposite of the terms Simplex or Single Side.

Enterprise Auto Configuration (EAC)

See printer automatic configuration.

HP Embedded Web Server (EWS)

HP Embedded Web Server in the HP printing product is accessible by a browser over HTTPS and allows status and configuration access to the product.

HPONEDRIVER_V3_X64.INF

Driver information file for HP Smart UPD 64 Bit V3.

HPONEDRIVER_V3_X86.INF

Driver information file for HP Smart UPD 32 Bit V3.

HPONEDRIVER_V4_X64.INF

Driver information file for HP Smart UPD 64 Bit V4.

HPONEDRIVER_V4_X86.INF

Driver information file for HP Smart UPD 32 Bit V4.

In-Box Driver

HP-provided printing drivers distributed with the Microsoft operating system.

Model

The **Model** field is the same as the Driver name assigned to the printer. Starting with Windows 7, Microsoft removed the **Model** field from display in the **Printer** folder and the Print Management Console.

Multicast Domain Name Service (mDNS)

Multicast DNS (also known as Zeroconf, Apple Rendezvous, and Apple Bonjour) effectively allows name resolution by common Unix®/Linux programs in the ad-hoc mDNS domain.local.

PCL

Printer Control Language

PnP Point and Print

Context dependent, sometimes used to refer to as Plug and Play.

Prestage

Install a driver to the driver store to support Plug and Play connections (like USB) and Point and Print use cases (for Version 4 driver only).

Print Queue

The print queue refers to an instance of an installed printer name with a driver name and printer port assigned. The terms Print Queue and Printer are often used interchangeably.

Printer (Print Name, Printer Object)

An arbitrary name assigned to identify a print queue; also known as the printer object. During an application FILE-Print operation, end users select the printer name to define the output device for their print job. By default, HP Smart UPD install sets HP Smart UPD printer name to be the same as the driver name. For example, the printer name would be HP Smart Universal Printing. If HP Smart UPD version-specific install method is selected, the printer name would be HP Smart Universal Printing (X, Y, Z). For any installed printer, the Microsoft default printer will have a check mark next to the printer's Name.

Printer automatic configuration

Executed at installation. HP Smart UPD communicates with the device to retrieve device capabilities directly from the device. Information passed between the device and HP Smart UPD can be in the form of a SNMP, IPP, WSD response over the network.

Printers Folder

The Windows folder that contains a listing of all installed printers, providing access to administrator functions to define a printer's settings, install new printers, or delete installed printers. Printer objects (printer names) exist in the Printers folder, which are also accessible from the Microsoft Print Management Console (PMC).

Share Name

An installed printer name that is shared on the network for connecting clients for Point and Print connectivity.

Simplex

Single-sided printing, opposite of the term duplex.

Smart UPD Non-Version Specific

HP-installed universal printing driver that does not contain HP Smart UPD's release version as part of the driver name string, for example, HP Smart Universal Printing. The features of the printing driver are the same as the HP Smart UPD Version Specific.

Smart UPD Version

A product version number assigned to each release of the HP Smart UPD. An example would be version number X, Y, Z.

Smart UPD Version Specific

HP installed universal printing driver that contains HP Smart UPD's release version as part of the Driver name string, for example, HP Smart Universal Printing (X, Y, Z). Using the version-specific driver name allows more than one version of HP Smart UPD to be installed on the same system. The features of the printing driver are the same as the Smart UPD Non-Version Specific.

SNP

Status Notification Pop-up.

WHQL

Windows Hardware Quality Lab is a testing process required to receive the Certified for Windows logotype. This certifies that Microsoft completed testing for HP Smart UPD driver before HP released the printing driver. Drivers that do not have WHQL certification at the time of installation receive the prompt "The software you are installing for this hardware [DEVICE] has not passed Windows Logo testing... Continue Anyway / Stop Installation."

WJA

HP Web Jetadmin is a print and imaging peripheral management software tool that helps optimize product usage, control color costs, secure products, and streamline supplies management by enabling remote configuration, proactive monitoring, security, troubleshooting, and reporting of printing and imaging products.