



DRIVER CONFIGURATION SUPPORT GUIDE



HP DRIVER CONFIGURATION SUPPORT GUIDE

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Edition 7, October 2016

This guide was previously titled: *HP Driver Pre-configuration Support Guide*

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INTRODUCTION

The *HP Driver Configuration Support Guide* describes the HP printer management software used to configure and deploy HP drivers. Three separate tools for configuring and deploying HP drivers are described in detail.

- HP Driver Configuration Utility
- HP Driver Deployment Utility
- HP Web Jetadmin

Driver configuration, or pre-configuration, is an approach to managing the installation of print drivers in a managed network environment. Information Technology (IT) administrators in managed network environments can use HP printer management software to configure the printing defaults for HP printer drivers before installing the driver(s) in the network environment. In other words, IT administrators can preconfigure the driver before deploying it.

For example, a company has purchased several HP Color LaserJet printers to be shared among several workgroups. To reduce printing costs, management wants all of the print queues to print on both sides of the paper (duplex) by default. In addition, to minimize toner consumption, color printing is restricted to specific groups. Several different print servers are in use, each of which has one or more queues to the new devices. Some users can print directly to the new printers over the network. However, IT wants to apply the same driver configuration to those print queues.

Previously, printers in such a scenario would be installed on each print server and then manually configured with the required settings. The printers would then be manually configured with the required specifications on each direct-print workstation. By using driver pre-configuration technology, this process is greatly simplified. The following examples show how the various pre-configuration tools are used to support different corporate environments:

- If HP Web Jetadmin is used, its queue management capability can preconfigure and create the queue on each Windows printer server in one step. The configuration can be saved and used for later deployments of the same product (regardless of which driver is used for that product). Each print server can then supply configured drivers to all Windows clients. HP Web Jetadmin can also be installed directly on workstations.
- If an internally developed printer and driver deployment process is used, driver pre-configuration can define the proper driver settings before the driver enters that process. After the driver is configured, every subsequent deployment of the driver is installed with the same settings.
- If Novell is used, driver pre-configuration can be used before drivers are loaded to the servers, thereby ensuring that clients are using correctly configured drivers when they connect to the shared print queues.
- If Windows print servers or workstations are used, use any of the three tools to preconfigure the installed drivers. The HP Driver Configuration Utility only modifies the driver so that it reflects the specified settings when it is installed (through any method). The HP Driver Deployment Utility packages and deploys drivers. HP Web Jetadmin can both configure and install drivers.

HP DRIVER PRE-CONFIGURATION OVERVIEW

Network administrators can use the HP Driver Configuration Utility (DCU) to preconfigure a print driver before deploying and installing. It is most beneficial when configuring print drivers for multiple workstations or print servers for print queues that share the same configuration. Two classes of features can be configured: printer accessories and driver feature settings. The driver is configured to match the printer hardware so that access to all of the printer accessories through the driver is enabled. For duplex units, the settings can include additional input trays, output bins, device type (color/mono). Most driver feature settings can also be configured. You can **Delete** the ECO-Print shortcut or **Create** a new shortcut.

The pre-configuration process consists of three steps.

- Driver acquisition
- Driver pre-configuration
- Driver installation and deployment

The steps can be accomplished in different ways, depending on the tool being used to define the configuration.

Driver acquisition

Acquire the software by doing one of the following.

- Retrieve drivers only from the CD-ROM that came with the printer.
- Download drivers from the HP Web site (www.hp.com).
- Use drivers that are already in the organization. For example, a driver that was certified by internal testing procedures for use within the organization.

Driver pre-configuration

The process of configuring drivers and other software occurs before installation. This allows the driver to be configured once and installed on any number of server or client systems.

File format

The driver configuration information is stored in a small configuration file. The configuration file is separate from the standard driver files (dynamic link libraries [DLLs] used to render and present the user interface [UI]). Although the configuration file is maintained separately, the driver configuration information is included in the driver package and referenced in the driver .INF file. The configuration process involves reading the default information from this file and allowing an administrator to select new default settings for existing features. The file is then saved and used when the associated driver is installed.

The configuration file is in XML format. The file contains a list of features and their available options on a product-specific basis. The file structure is specific, and one purpose of the HP driver configuration tools is to maintain the specific structure. The HP utilities maintain consistency in the configuration file through dynamic constraint checking. Before setting a value, the utility determines whether the proposed setting is valid within the pre-established constraints that were placed upon the device at the factory. The utility also ensures consistency by preserving the correct structure of the configuration file. This structure is assumed by the device that uses the configuration information, and must be strictly maintained.

From the default driver package, the configuration filename is dependent on the version of the HP Universal Print Driver (HP UPD) and has a filename of hpcpu*.cf_ (available in HP UPD 5.0.3 and earlier releases), or hpcpu*.cfg (available in HP UPD 5.1 and later releases). These configuration

files are compressed in the driver package supplied with the driver, so it is not generally editable except with a tool specifically designed for the task. When one of the HP tools is used to preconfigure driver settings, the driver's default configuration file is copied outside the compressed driver package to allow the contents of the configuration file to be modified with user-defined settings. These modifications become the default settings for any printer that uses the preconfigured driver package during installation. The hpcpu*.cf_ file gets saved externally from the driver INF package (that is, the modified configuration package does not get re-added in compressed form back into the default INF driver package). This process allows HP tools to restore to the HP driver default settings. When the installation is complete, the configuration settings are stored on the host as [file-name-hash].cfg. Driver settings and preferences defined through the driver user interface are exported and maintained in the [file-name-hash].cfg. Storing the settings allows persistence of user-defined settings during driver upgrade.

A second supported option is defining the driver installation defaults using the client's local driver store as opposed to defining the settings of the install package. Each client can have their own defaults that are different from the defaults of the source driver package. This approach starts by using the hpcpu*.cf* taken from the driver package. After defaults have been defined, the file is saved as hpcpu*.cfm, and the administrator copies the hpcpu*.cfm file to the client's local driver installation file store before installation of the print driver. When the client host performs a driver install, the hpcpu*.cfm is used.

Deployment options are described in detail in this guide.

Driver package configuration file names

The hpcpu*.cf_ file was last supported by HP UPD 5.0.3. From HP UPD 5.1 onwards, it support hpcpu*.cfg and hpcpu*.cfm files only. The following are the driver package configuration file names based on the HP UPD version.

Table 1 Configuration file suffixes (by HP UPD version)

HP UPD Version	CF_ or CFG
HP UPD 5.0.3 and earlier releases	Contains hpcpu*.cf_
HP UPD 5.1 and later releases	Contains hpcpu*.cfg

The following table lists the configuration file support by HP UPD version.

Table 2 Configuration file support

Configuration file support and folder location	Supported in HP UPD version 4x	Supported in HP UPD version 5x
hpcpu*.cf_ same directory as HP UPD install.exe	Yes (breaks Microsoft WHQL)	No (5.1 and newer)
hpcpu*.cfg same directory as HP UPD install.exe	No	Yes (breaks Microsoft WHQL)
\\.\3\hpcpu*.cfm	Yes	Yes
install /gcfm \\.\hpcpu*.cfm	No	Yes (5.2 and newer)
\\3\hpcpu*.cfg or *.cf_	No	No

Lockable features

Each individual HP printer model defines the feature set that you can preconfigure. In general, all driver features are supported. This means that both the device settings (such as Optional Paper Sources and Duplex Unit) and the printing preferences (such as default Paper Source and default Output Bin) can be customized in advance of installation. In addition, a number of features can be locked to a particular state if an IT administrator wants greater control over how compatible devices are used. Features defined under custom shortcuts cannot be locked. The following are the lockable features.

- **Print on Both Sides (Duplex)**
- **Print in Grayscale**
- **Color Options**
- **Economode**
- **Media Type**
- **Paper Source**
- **Job Retention**
- **Output Bin**
- **Watermarks**
- **Device Type**

New features in HP DCU

See the release notes for a list of new features in HP DCU

Constraints

To ensure that an invalid configuration is not applied to the driver when it is installed, the driver configuration file defines the valid relationships between specific settings included in the file. For example, the driver configuration file prohibits setting the media type to **Transparency** when **Print on Both Sides** is selected. The prohibition ensures that when the driver is installed it can successfully integrate the settings into its internal settings format.

Driver installation and deployment

The process of deploying and installing printer software varies across organizations. While some companies have tightly controlled client and server software configurations, others have an informal distribution network of software not under the control of a centralized IT department. For driver pre-configuration to be usable within a wide range of computing environments, it must be compatible with the standard deployment and installation methods used by corporate and enterprise customers. This means that driver pre-configuration must be compatible with any installation process that uses the system application program interfaces (APIs) defined by Microsoft to install drivers and printers.

HP Driver Configuration Utility supports the following deployments.

1. First time driver installations sourced from the INF driver package provided by HP. This includes running the installation via Add Printer Wizard and HP UPD's INSTALL.EXE (hpcpu*.cf* file).
2. Using the existing install driver on the host system hpcpu*.cfm file.

ENVIRONMENTAL SUPPORT

Hewlett-Packard has gone to great lengths to ensure that driver configuration supports the most common corporate and enterprise printing environments. This chapter provides detailed information about specific workflow requirements for these environments, as well as limitations that they might impose on the pre-configuration solution.

Product/driver coverage

Driver pre-configuration is a feature available on all current HP LaserJet and Business InkJet products.

HP PCL6 and PS discrete with .cfg files and HP UPD drivers are supported on Microsoft Windows 7, Windows 8, Windows 8.1 and Windows 10 operating systems; Windows Server 2008, Windows Server 2008 R2, Windows 2008 Cluster Server, Windows 2008 R2 Cluster Server, Windows Server 2012 and Windows Server 2012R2.

Direct installation - workstation/Windows print server

Direct installation is the common method used when a printer is created on either a Windows workstation or print server by using almost any installation method (such as Add Printer Wizard, HP Installer Customization Utility, HP Web Jetadmin, and other homegrown installation applications). Providing the driver for the printer being installed is preconfigured by using one of the tools described in this document, and the installation method follows the standard Microsoft process for printer creation, the printer reflects the defined settings once installation is complete.

Windows Point and Print

In Windows environments, when the preconfigured server-side driver is installed onto the server, the settings are stored. All connecting clients receive the same server-defined settings when they connect. All server-side settings are vended to the clients.

Novell Point and Print

There are three main categories for pre-configuration in Novell environments:

- NetWare Directory Services (NDS)
- ZenWorks
- Novell Distributed Print Services (NDPS)

In the case of NDS and ZenWorks, at most one pre-configuration definition is available per product (that is, one pre-configuration definition for each HP printer model). This is because Novell stores all printer drivers to be vended in the same physical directory on the server. Driver pre-configuration uses the same file name for all drivers for a given product to store the configuration information, thus making the file both portable and consistent across all drivers for a particular product. For this reason, only one configuration can be stored at a time.

In the case of NDPS printer objects, multiple instances of the same driver can be stored on the server, each with its own pre-configuration data. These resources can then be associated with the appropriate NDPS print queues and vended to printing clients accordingly. If multiple configurations for the same driver model are required on the server (for example, the HP LaserJet 4200 PCL6 driver for Windows Server 2003), the Novell Resource Manager allows each new instance of the driver to be used with a different name. See Novell documentation for step-by-step instructions for adding drivers in this manner.

Regardless of the queue type, all Windows client platforms are supported when using the configurations that are defined on the server.

Windows Terminal Server

Driver pre-configuration is supported in the Windows Terminal Server environment for Microsoft Windows Server 2008, Windows Server 2008 R2, and Windows 7. When a preconfigured driver is installed on the server, all terminal clients receive that configuration when they connect to the server. The only limitation in this scenario is that as printers are being added, the server administrator must be working on the server directly, not working from a terminal session. This limitation is related to the Distributed Component Object Model (DCOM) infrastructure in the Terminal Server environment.

Windows Terminal Server (Citrix Metaframe Printer Auto-Create)

Citrix Metaframe provides a feature allowing the workstation on which the terminal clients for a server are running, to install a local printer and gain access to the printer within the context of a terminal session. This allows terminal users to print to locally defined printers even when they are working from within a terminal session. The feature is called Printer Auto-Create because the Citrix environment creates a server-side printer for those printers that are dynamically installed on the terminal workstation when the user logs on to the server during a terminal session. The client workstation and server must both have the same driver installed for the client-side printer.

If the driver installed on the client workstation is preconfigured, then the settings are applied to the server-side printer when the terminal session is started.

NOTE: This functionality is available only on Metaframe 1.8 and later versions that run in a Microsoft Windows 2008 and Windows 2008R2 Terminal Server environment.

TOOLS

The process for driver pre-configuration can be accomplished using either the HP Driver Configuration Utility or the HP Driver Deployment Utility. Both are designed with the same basic UI controls for interacting with the `hpcpu*.cf_` or `[filename].cfm` file, but are packaged differently, to support established printer installation workflows or to leave the deployment and installation of the driver entirely up to the user.

- HP Driver Configuration Utility (HP DCU), a standalone tool for Windows operating system environments
- HP Driver Deployment Utility (HP DDU)

NOTE: HP strongly recommends that the `hpcpu*.cf*` file is modified using only the provided editing tools. Manual editing of the XML file can result in invalid statements or incompatible settings.

HP Driver Configuration Utility

The HP Driver Configuration Utility is a small Windows application used to edit the configuration file associated with a particular driver. The configuration file controls the print driver settings and takes effect when the driver is installed for both dynamic and traditional mode installation methods.

The HP Driver Configuration Utility does not handle any part of the deployment or installation of the driver. Rather, the default configuration file is modified and saved back to the same driver directory in which it was opened (`hpcpu*.cf*`) or saved to the local host's directory (`filename.cfm`). The HP Driver Configuration Editor is intended for use in environments where there is an established process for deploying drivers or where the server platform is not a Windows-based platform (such as, Novell).

Access/installation

The HP Driver Configuration Utility ships on CDROM with some HP printers. The most current version is also available for download at: www.hp.com/go/upd

NOTE: The HP Driver Configuration Utility is included with the HP Printer Administrator's Resource Kit (PARK). To download the PARK, which includes the HP DCU software and this guide (*HP Driver Configuration Support Guide*), go to the above URL, click the **Documentation** tab, and then click **HP Printer Administrator's Resource Kit** from the **Universal Print Driver Tools** section.

Release version history

Use the most current version of the HP Driver Configuration Utility to manage the supported features of the HP UPD. The most current version of the HP Driver Configuration Utility supports configuration changes to all supported versions of the print driver.

For information of the latest version, see the release note for HP DCU.

Supported operating systems:

- Microsoft Windows 7 SP1*
- Microsoft Windows 8 / 8.1
- Windows 10
- Microsoft Windows Server 2008 SP2 / 2008R2 SP1
- Microsoft Windows Server 2012 / 2012R2

*Microsoft has ended mainstream support for this operating system.

Procedure

After download, the HP Driver Configuration Utility compressed package can be expanded into a local or network directory. No formal installation process is required. Double-click the HPBCFGAP.EXE file in the destination directory to launch the HP DCU.

In order to use the HP Driver Configuration Utility, the driver(s) to be configured must be in their standard .INF-file driver packages that are obtained from either the HP Web site or from the product in-box CD-ROM. The driver(s) must be stored where the user has write accessibility. The driver must also support driver pre-configuration. The standard driver INF package contains an hpcpu*.cf* file that is read by the HP Driver Configuration Utility using **Open** from the **File** menu. If the tool is used to browse to a driver directory and there is no .cf*, the driver cannot be preconfigured.

The HP Driver Configuration Utility has two methods for creating preconfigured driver settings for driver installation. Each method uses the same configuration file but different file names for deployment. For either method, when driver installation is complete, the printer's default settings reflect the preconfigured settings. From this point forward, the printer and driver behave like any printer in terms of settings management. Users can modify the unlocked printer settings through the **Printers** folder and modify jobs within applications. The two methods are described in this section.

Configuration file hpcpu*.cf*: Print Administrators can create multiple custom configurations of the complete print driver INF package by altering the hpcpu*.cf* file with the HP DCU. (You cannot change the default filename.) For example, the administrator can copy the driver package to two separate directories. Each directory contains a custom *.cf* created by the HP DCU (for example, \\fileservers\upd_duplex_enabled and \\fileservers\upd_ColorOptions). When a preconfigured driver is installed from the driver source package, the modified hpcpu*.cf* is read and the settings applied as the defaults for the installed driver. Because the configuration file shipped with the drivers is part of the *.INF file package (referenced in the .INF file as a dependent file of the driver), modifying this file invalidates the digital signature of the Microsoft WHQL certified driver package. The hpcpu115.cfg file in UPD 5.3 and latest versions can be saved with the custom name using extension *.cfm. For example – hpcpu*.cf* file with custom Duplex settings can be saved with custom name as “duplex.cfm” in any directory. This file can be used by using the UPD install switch /gcfm. For example: c:\UPD53\install /gcfm”c:\upd\cfmfiles\duplex.cfm”

The following does not apply to Windows XP, Server 2003, or Server 2008. Starting with Windows Vista and newer Microsoft operating systems, driver store and driver package awareness was added to the operating system changing the behavior of preconfigured driver installations using the hpcpu*.cf* method of installation. Assume the following steps.

1. Modify the hpcpu*.cf* file in the driver package using the HP DCU. Set **Orientation** to **Landscape**.
2. Install the preconfigured driver. The installed queue will have a default orientation of Landscape.
3. Modify the hpcpu*.cf* used in Step 1 using the HP DCU. Change the **Orientation** from **Landscape** to **Portrait**.
4. Install this second preconfigured driver using **Add Printer Wizard, Have Disk...** and select **Replace the current driver** or **Use the driver that is currently installed**. The installed queue will have a default orientation of Landscape.

There are two logically separate operations in driver installation for Vista and later: Driver staging and device installation. During Steps 1 and 2, the installation performs the driver staging and device installation. During Steps 3 and 4, the driver setup bypasses the driver staging because the INF file is the same. It is recognized as signed and considered the same driver already installed in the system's driver store. This results in the second installation not using the preconfigured hpcpu*.cf* file from Step 3. To make Steps 3 and 4 force new driver staging, remove the device, driver, and the package installed in Steps 1 and 2. An additional option is to use the *.cfm method for driver pre-configuration.

Benefit of hpcpu*.cf* method:

- Centralized management of settings for preconfigured driver packages to a single file source (such as, file server)

Configuration file *.cfm: The *.cfm file is not deployed as part of the standard driver installation package. This restricts its use to local installations. Utilization requires that the .cfm reside on the local machine's driver installation directory before the HP UPD's installation. When the HP UPD installation is launched, the settings defined in the *.cfm file become the installed defaults. If both a *.cf_ or *.cfg and a *.cfm file exist, the *.cfm file in the local machine's driver installation directory takes priority. Following the installation, the hpcpu*.cfm changes to hpcpu*.cf_ on the local machine's driver directory maintaining the administrator's installation defaults of the original *.cfm file. If the user wants to change the defaults for new printers using the existing installed driver, the local machine's *.cf_ file can be modified with the HP Driver Configuration Utility, or a new hpcpu*.cfm file can be placed onto the local machine.

Benefits of [filename].cfm method:

- Prevents the Microsoft WHQL Digital Signature during installation.
- Changes to the preconfigured driver settings are applied at installation for all supported Microsoft operating systems.

Preconfigure the HP UPD

Use the following steps to preconfigure the HP UPD:

1. Run the HP Driver Configuration Utility. Double-click HPBCFGAP.EXE.
2. The **Information** dialog box appears.

This dialog box warns users that, depending on how the driver is installed, a Windows Hardware Quality Labs (WHQL) Digital Signature Warning will appear. Changing the configuration of the driver does not impact the performance or quality of the driver. Changing the configuration does invalidate the driver's digital signature and triggers the appearance of this dialog box.

NOTE: To prevent the Microsoft WHQL Digital Signature warning from appearing during driver installation, use the .cfm method of driver installation.

The **Digital Signature Not Found** dialog box shows the Microsoft warning dialog that appears at installation.



3. Open a configuration file and modify settings to your requirements.

Device Settings tab: Installed hardware on the device.

Printing Preferences tab: Related to the actual formatting of documents as they are printed. By modifying the feature settings, the default behavior of the driver is altered. For example, if **Media Type** is changed to **Letterhead**, then every job printed defaults to printing on letterhead paper. This setting can be modified by individual document and by individual printer.

Lock: Some features provide the **Lock** option. When a feature is locked, the selected default option is the only option available to users. For example, the **Print on Both Sides (Duplex)** setting can be locked to **True**. A small icon showing a padlock appears next to the setting in the user interface. As a result, the user cannot print only on one-side from this driver. If the driver is installed on a server, clients connecting to that printer cannot print only on a single side of the paper.

Setting Constraints: The hpcpu*.cf_ or *.cfg and [filename].cfm file are encoded with all of the same constraints that the driver user interface would enforce. If the user of the HP Driver Configuration Utility attempts to set features to an invalid combination, a warning dialog box appears, and the feature change that triggered the warning is returned to its original state. For example, if the **Media Type** option is set to **Transparency** when **Print on Both Sides (Duplex)** is set to **True**, an **Invalid Selection** dialog box appears, **Invalid Selection: Print on Both Sides(Duplex) cannot be set to True because Media type is equal to Transparency.**

Bundle Selection: Lists the various hardware bundles available for the product and, when changed, modifies the individual settings to reflect the bundle contents.

Return to Factory Defaults: If the configuration file being edited has been opened from within the source driver package, selecting **Return to Factory Default** forces the HP DCU to read default settings from the driver store and revert all changed settings of the user configured hpcpu*.cf* or [filename].cfm to the HP defaults.

Create/Add New Shortcut: Beginning with HP UPD V5 and later, printing shortcuts presented through the driver user interface can be modified, created, and deleted. Settings defined within shortcuts cannot be locked. The **Factory Defaults** shortcut cannot be modified.

4. Depending upon how the driver will be installed, save the altered configuration file.

File-Save: Saves the file to the same filename from where it was opened.

File-Save As: Saves the file as [filename].cfg to the defined directory. This method supports legacy application of driver pre-configuration and is not standard use for HP UPD V4 and higher.

File-Save As CFM: Saves the file as hpcpu*.cfm in the driver directory. After creation, this file can be copied, moved, or renamed. For HP UPD 5.2.6 and prior releases, the hpcpu*.cfm must be copied onto the local machine's driver directory the first time the driver is installed or after driver installation has occurred and new print queues of the same driver will be added. In HP UPD 5.3 and later releases, the hpcpu*.cfm file can be saved with the custom name "duplex.cfm" in any directory. This file can be used with the HP UPD install switch /gcfm. For example: c:\UPD53\install /gcfm"c:\upd\cfmfiles \duplex.cfm" The hpcpu*.cfm takes precedence over any other *.cfg or *.cf_ files present during installation.

On 32 bit systems, the driver directory is located here:

%systemroot%\system32\spool\drivers\w32x86\3

On Intel/AMD 64 bit systems, the driver directory is located here:

%systemroot%\system32\spool\drivers\x64\3

5. Install the driver using the supported method of deployment (see the HP UPD Systems Administrator Guide).

HP Driver Deployment Utility

The HP Driver Deployment Utility (HP DDU) was created to simplify the deployment of printer drivers onto a client PC. It is a simple utility that packages the driver files and the code needed to deploy them into an *.EXE and *.CAB file. These files are run on the client PC to copy the driver files to the Windows driver store and for network packages, to install the printer.

The HP Driver Deployment Utility works with printer drivers that can be installed by an INF, supporting only traditional mode installation (dynamic mode is not supported). It is designed to work with printer drivers that have their files contained in one directory structure. Because this utility is generic, it does not have knowledge of how specific drivers are packaged. It packages all files in the directory (and subdirectories) where the driver INF was found. The driver must be expanded so that the HP DDU can process the INF files. If you download an .exe with the driver files, you need to run it first to unpack all the files. Then run the HP DDU to package for deployment on the client system.

If you need the ability to configure unique settings for your driver deployment, the HP UPD installer may be a better choice as an install tool. The HP UPD installer allows the configuration of settings from the command line.

The HP Driver Deployment Utility can be used with the HP UPD installer, but the HP UPD command line will not be accessible. The HP DDU is designed to package and stage/install printer drivers. Driver specific features, like those found in the HP UPD installer are specific to the HP UPD installer and not supported by the HP DDU.

Examples of where the HP Driver Deployment Utility installer could be used are to deploy a direct connect driver in traditional mode or a network install in traditional mode.

NOTE: Administrative rights are necessary on the client system where the install is being performed. For a direct connect, administrative rights are only required to run the .exe package. You can then connect the printer without administrative rights. For a network connection, the exe package will copy files to the driver store, create the port, install the driver and finally create the printer object.

Supported operating systems

- Microsoft Windows 7 SP1*
- Microsoft Windows 8 / 8.1
- Windows 10
- Microsoft Windows Server 2008 SP2 / 2008R2 SP1
- Microsoft Windows Server 2012 / 2012R2

*Microsoft has ended mainstream support for this operating system.

Install and run the HP Driver Deployment Utility

Download the most current version of the HP Driver Deployment Utility from www.hp.com/go/upd

NOTE: The HP Driver Deployment Utility is included with the HP Printer Administrator's Resource Kit (PARK). To download the PARK, which includes the HP DDU software and this guide (*HP Driver Configuration Support Guide*), go to the above URL, click the **Documentation** tab, and then click **HP Printer Administrator's Resource Kit** from the **Universal Print Driver Tools** section.

Install the HP Driver Deployment Utility

Copy the files to your administrative PC. If using the self-extracting exe, copy it to your administrative PC, then double click – it will expand the files into the proper directory structure.

The HP Driver Deployment Utility does not require an installation program. All the files are contained in the **Driver Deployment Utility** directory. HP DDU does not require any registry entries.

Run the HP Driver Deployment Utility

1. Create the printer driver package to deploy by opening the HP DDU application, by double clicking hpddu.exe found in the Driver Deployment Utility root directory. This utility packages the driver and the code needed to stage/install the driver into a .exe and a .cab. An informational .xml file is also created and can be used to identify the package selections.
2. Run the new driver package (created in step 1) on the client PC. It can be copied to the client PC and run by double clicking or it can be run from a server by pointing to it and double clicking. The package can also be run in a batch file.

For a direct connect package, the HP DDU silently copies the driver files into the Windows driver store and exit. Prior to exiting, an optional dialog can be shown to prompt the user to connect their printer after the files are copied. Upon completion of the package executable, when the user connects to the printer to the PC, the OS will install the printer using plug and play software.

NOTE: If the printer is never connected to the PC, the printer will not be installed.

For a network package, the HP DDU silently copies the driver files into the Windows driver store, then installs the printer using the network information entered by the administrator.

Use the HP Driver Deployment Utility

The HP Driver Deployment Utility user interface is divided into 3 sections:

- Package Source
- Package Target
- Create Package

Package Source

The following describes the package type and driver location to create.

Driver Directory—Use the **Select Driver** button to enter the directory where your driver resides by browsing or typing it in. You should only have one driver package in this directory because this utility will package all the files found in this directory (and subdirectories) into the executable. If you have downloaded a compressed driver package, you must expand it before using this utility.

In some cases, you may have multiple driver INF files in the directory. For example, you might have one for color printers and another for mono printers. In this case, an additional dialog will allow you to select which driver to package.

You will receive a warning if your directory is large. This is to help prevent packaging more than one driver. You may choose to continue at this point or not.

When the driver directory is selected, and one driver has been found, the driver information displays below the directory selection box.

For drivers that support pre-configuration, the checkbox below will be enabled. Selecting this runs a configuration dialog after the **Create Package** button is selected.

Install Type—**Silently preload the driver** Select this option for users that will be using a direct connection, like a USB cable. A future Plug and Play event is necessary to install the driver, but all the files are installed in the Windows driver store by this package for future use.

By default the executable runs silently. If you want to prompt the end user to connect the printer at the end of the install, then select the checkbox **Show a prompt to connect the printer**.

For printers using a network connection, select the **Silently create the network port and install driver** option. The **Network Settings** button becomes enabled. Click on the **Network Settings** button to enter the required network settings.

NOTE: If you don't select your driver first, an error dialog box appears. You must select your driver first so that the printer name can be derived from the driver name.

Network Settings

You must identify the network printer by one of the following methods. This utility does not communicate with the device to determine if the settings are valid, but does perform syntax checking. The administrator is responsible for identifying the printer with the correct IP address, Hardware address, or Hostname.

- **IP Address** — enter the IPv4 or IPv6 address of the printer.
- **Hardware Address** — enter the hardware address of the printer.
- **Hostname** — enter the hostname of the printer.

The following network settings are additional. You may accept the default values or change any of them.

- **Port Name:** This is the network port name that will be created. If the name already exists, a number will be appended to make it unique.
- **Printer Name:** This is the printer name that will appear in the printers' folder. If the name already exists, a number will be appended to make it unique.
- **Set this printer as default:**
 - **Yes** - will make this printer the default when printing from other applications.
 - **No** - will retain the current default, unless this is the only printer installed.
- **Share this printer: Yes** - will allow others to use this printer.
- **Share Name:** Share name for the printer. Only enabled if **Share this printer** is **Yes**. If the name already exists, a number will be appended to make it unique.

To exit the Network Settings dialog without saving, use the Windows close button in the upper corner.

Package Target

Use this section to identify the name and location of the installation package.

Use the **Save as** button to enter the name and location for the output package by browsing or typing it in. The utility will create the package in the temp directory and then move it to the final location.

Create Package

Use this section to initiate the package creation process.

Select the **Create Package** button when you have entered all the above information. This button will be disabled until you have entered the required information. Once selected, the **Cancel** button and Progress bar will be enabled.

To stop the package creation, select the **Cancel** button.

The executable will run silently, unless a user prompt was requested for a direct connect printer. If an error is encountered during execution, an error dialog will appear. To suppress the error dialog, select the **Suppress all end user error messages** checkbox.

If you selected the **Pre-configure this driver** checkbox, the driver configuration dialog will open when you select the **Create Package** button. Once you have configured the driver, select **OK** to save the new configuration settings and continue package creation. Selecting **Cancel** will cancel the entire package creation process.

HP DDU V2.0.0.42 does not support the creation or deletion of Printing Shortcuts during driver pre-configuration within the HP DDU tool. However, administrators can use the HP Driver Configuration Utility first to create and delete unwanted shortcut names before running the HP DDU for driver package creation. In this method, all custom shortcuts created in the HP DCU appear in the HP DDU allowing further settings adjustment for each presented shortcut name.

HP DDU Frequently Asked Questions

How do I use the HP DDU to deploy a direct connect driver with pre-configuration?

If you load multiple pdls for one printer, the OS will determine which one satisfies the Plug and Play event. The OS will create one printer object for that pdl.

1. Run hpddu.exe to create the package.
2. From Package Source section:
 - a. Select the driver to package by browsing to an INF file in the directory.
 - b. Select the **Pre-configuration** checkbox. This checkbox is enabled only for drivers that support pre-configuration.
 - c. Select the **Silently preload the driver** Install Type.
 - d. Select the **Show a prompt to connect the printer** checkbox if you want to prompt the user after the files are copied
3. From **Package Target** section:
 - Three files will be written here: an .exe, a .cab and an .xml with information about the package created.
4. From Create Package section:
 - a. If you want to suppress any error messages select the **Suppress all end user error messages** checkbox.
 - b. Select the **Create Package** button
 - c. The configuration dialog will open and allow you to set configuration details for this driver. After accepting the configuration changes, the package will be created.
5. Run the new .exe from the client machine. You must have administrator rights to run the exe because it will be copying files into the Windows driver store. Now the driver files are on the system, and any user can connect the printer to trigger the plug and play event.

NOTE: The printer object is not created until the printer is connected.

NOTE: If you deploy multiple direct connect preconfigured drivers, they all use a configuration file with the same name, the first one connected will be the only one configured properly. This might happen if you deploy the PCL6 and PCL5 drivers for the same printer. This is because the configuration file is copied to the \3 directory awaiting for the printer to connect. Each deployment

will just copy over the same configuration file since they all use the same name. Once the printer is connected, this configuration file gets consumed and deleted. Future Plug and Play events will not have the configuration file available.

How do I use the HP DDU to deploy a network printer with pre-configuration?

1. Run hpddu.exe to create the package.
2. From **Package Source** section:
 - a. Select the driver to package by browsing to an INF file in the directory.
 - b. Select the **Pre-configuration** checkbox. This checkbox is enabled only for drivers that support pre-configuration.
 - c. Select the **Silently create network port and install driver** Install Type.
 - d. Select the **Network Settings** button to enter the network settings.
3. From **Network Settings** dialog:
 - a. From the **Required Settings** section, enter at least one way of identifying the printer (IP address, Hardware address, or Hostname).
 - b. Make any changes to the **Additional Settings** section (port name, printer name, default printer, sharing and share name). You can leave the default settings if you don't need to make changes.
4. From **Package Target** section:
 - Three files will be written here: an .exe, a .cab and an .xml with information about the package created.
5. From **Create Package** section:
 - a. If you want to suppress any error messages select the **Suppress all end user error messages** checkbox.
 - b. Select the **Create Package** button.
 - c. The configuration dialog will open and allow you to set configuration details for this driver. After accepting the configuration changes, the package will be created.
6. Run the new .exe from the client machine. You must have administrator rights to run the exe because it will be copying files into the Windows driver store. A port and printer object will be created with the information provided above.

Common Problems

I get a “Multiple Drivers Found” warning when I select the driver

If too many files are found in the driver directory, or the directory is really large, a warning appears so you don't accidentally package up something you did not intend to package (like the root directory). Some drivers are very large, and you can choose to ignore this warning and continue.

To minimize package size, each driver should be in its own directory. This is usually the default behavior when you expand a driver.

I get a “Please select the driver directory before configuring network settings” error when I try to open the “Network Settings” dialog

Select a driver before opening the **Network Settings** dialog. This allows the printer name field to be auto-filled based on the driver name.

The Create Package button is not enabled

This button will not be enabled until you have:

1. Selected the driver.
2. If network connect – filled out one of the required network settings.
3. Selected the **Save as** name and directory.

The "Create/Add Shortcuts" feature is missing from the HP DDU v2.0.0.42?

This feature is now available in the HP Driver Deployment Utility (HP DDU) v2.0.0.45 or higher to create, modify, or delete shortcuts.

How do I exit the HP DDU?

Use the Windows close button in the upper corner.

The Network Settings dialog keeps displaying an error

If you do not want to save settings, or change your mind and don't want a network install, you need to close the network settings dialog with the Windows close button in the upper corner. Using the **OK** button, will try to validate the settings, and that is what is causing an error.

How do I uninstall HP DDU?

Delete all the files in the root HP DDU directory.

PRINT QUEUE AND PRINT DRIVER MANAGEMENT USING HP WEB JETADMIN V10

Introduction

HP Web Jetadmin V10 (referred to hereafter as HP Web Jetadmin) is a software application for managing print queues and print drivers on remote servers and workstations. Administrators can create, edit and delete print queues and install or update print drivers by using the Print Management features in HP Web Jetadmin. HP Web Jetadmin can act as a driver repository for deploying new HP drivers on remote systems. HP Web Jetadmin Print Management features use the HP Universal Print Driver.

Overview

Administrators use HP Web Jetadmin Print Management to locate a server or workstation on a network. When a host is located, the administrator adds credentials and can manage the print queues and print drivers on the remote host. Existing print queues on the remote host can have their settings and driver changed and queues can be added or removed.

Support requirements

For support information, go to www.hp.com/go/webjetadmin

Supported Drivers

- HP device specific drivers
- .INF install
- HP Universal Print Driver (HP UPD)

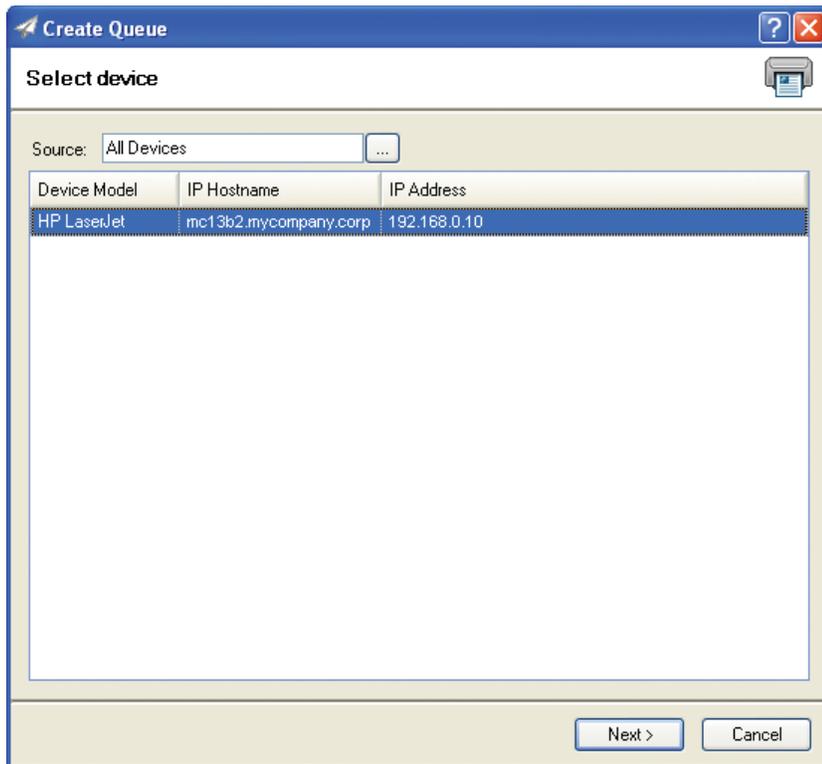
Create a print queue

Local administrator credentials are required on hosts managed by HP Web Jetadmin **Print Management** features. You can establish these rights in a number of ways.

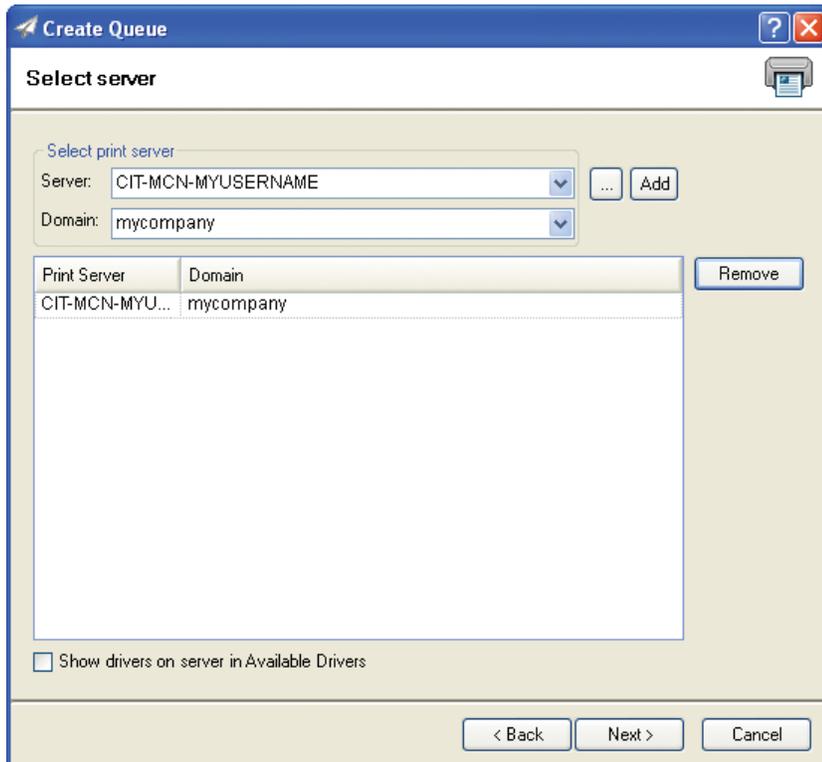
- You are a domain administrator.
- Your user domain account exists in the local Administrator group on the remote host.
- You belong to a domain group that exists in the local Administrator group on the remote host.

NOTE: File and printer sharing must be enabled at the remote host where the print queue is to be created.

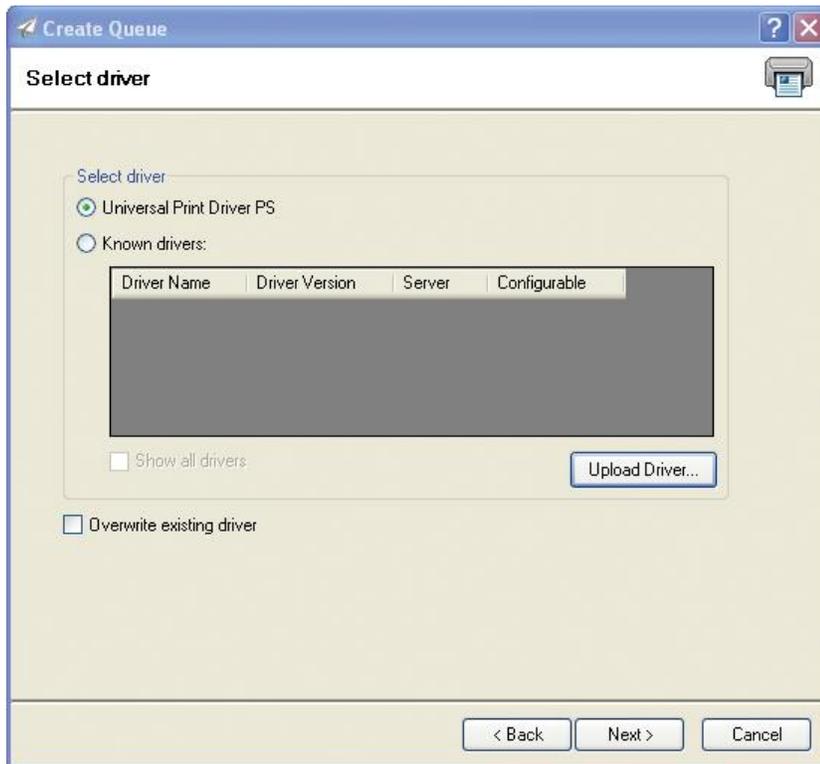
1. In the left navigation pane, click **Print Management** at the bottom of the screen. In the **Print Management - Print Queues** task module, click **New**. The **Create Queue** wizard starts, and the **Select device** page appears.



2. Select a device from the list (only one device can be selected). Click **Next**. The **Select server** page appears.



3. Select a server name and a domain. Select **Add** (more than one computer name can be selected). Click **Next**. The **Select driver** page appears.



4. The **Credentials** wizard is started if there is only one server selected, if the **Show drivers on server in Available Drivers** is checked, and if you have not entered credentials for that server already. Select the print server and then type your credentials and password. Click **Set** and then click **Finish**. The **Select driver** page appears.
5. Select the driver:
 - **Universal Print Driver** - an embedded INF installer for the HP Universal Print Driver is a resident part of the Print Management solution. The HP Universal Print Driver Post Script is available here as an installed feature.
 - **Known Drivers** - drivers that are already installed on the remote host or drivers that exist on the HP Web Jetadmin server (INF driver install base). These drivers, when identified for use with the print queue, are added to the queue as it is being installed. **Show all drivers**, when checked, enables the display of all drivers, not just the ones that are specific to the selected device.
 - **Upload Driver** - provides a browse path to INF driver installers on the local HP Web Jetadmin client host. These driver files must all exist together in the same directory.
6. Type the printer name using Windows naming conventions for print queues. This name must be a unique name on the server.
7. Type the port name. This defaults to the printer's IP Address preceded by IP, HP recommends that you use the default. However, you can change it if necessary.
8. If you want to share this printer click **Share this printer**.
9. The share name defaults to the printer name.
10. You can add a location and any comments. Then click **Next**. The **Confirm** page is displayed.
11. Click **Next**. The **Results** page is displayed.

If the printer was shared, you can print a test page.

12. Click **Done**. The **Print Management** page is displayed.

Fleet management of print queues

Within the **Print Management** view, HP Web Jetadmin has the capability of installing queues and drivers onto multiple remote hosts. This fleet queue creation can be done remotely from the HP Web Jetadmin client interface and in a configuration session.

Users of the **Print Management** feature could be IT personnel in school districts. These personnel may have responsibility over desktop print functionality and print devices in remote and wide geographic distribution. On top of the remote distribution problem, large numbers of workstations and different restrictions apply. Consider this problem:

- Each school in the district has obtained a color MFP.
- A dozen to several hundred student workstations could exist in each school.
- Staff are allowed to print color but students are not.
- IT has full administrative access to all of the workstations.

HP Web Jetadmin could result in substantial savings in this environment. Pre-configuration could be used on drivers deployed to student workstations. All drivers and queues could be deployed through the **Create Print Queue** tool in a few configuration sessions. Travel to each of the schools could be reduced to a bare minimum.

Create a fleet of print queues

1. Open the **Create Queue** wizard by either right-clicking in the **Print Management** tree or by selecting **Create Print Queue** from the **Print Management - Common Tasks** task module.
2. Select a device from either a group or the All devices listing. Only one device selection is possible. click **Next**.
3. Select one or more remote hosts using the **Select Server** screen.
4. Select the driver and pre-configuration if it exists.
5. Enter a name for the queue and supply any necessary share information.
6. Click **Confirm**.

Edit a print queue

1. In the left navigation pane, click **Print Management** at the bottom of the screen.

In the **Print Management - Print Queues** task module, select the print queue and click **Edit**. The **Edit Print Queue** wizard starts and the **Select driver** page appears.
2. Select the driver:

To display all drivers (not just the ones that are specific to the selected device), click **Show all drivers**.

Click **Next**. The **Specify print queue** options page appears.
3. If you want to share the printer click **Share this printer**.
4. Click **Next**. The **Results** page appears.

5. Click **Done**. The **Print Management** page appears.

Delete a print queue

1. In the left navigation pane, click **Print Management** at the bottom of the screen.

In the **Print Management - Print Queues** task module, click **Delete**. The **Delete Print Queue** wizard is started.

2. Select one of the following to delete:

- **Driver associated with the print queue:** removes the driver that this queue used.

NOTE: When selecting **Driver associated with the print queue**, the driver might not actually be removed; this is due to known problems with Microsoft's Spooler system.

- **Port associated with the print queue:** removes the port that this queue used.

NOTE: When selecting **Port associated with the print queue**, the port might not actually be removed; this is due to known problems with Microsoft's Spooler system.

- **Purge jobs associated with the print queue:** removes any queued jobs associated with the queue.

3. Click **Next**. The **Confirm** page appears.

4. Click **Next**. The **Results** page appears. Click **Done** to view the **Print Management** page.

Driver management

HP Web Jetadmin facilitates driver management. Drivers can be added to the HP Web Jetadmin host which acts as a driver repository. These drivers are installed on remote hosts where queue management is being performed. The drivers can be removed when they are no longer the latest revision or no longer needed. Drivers, once they are listed in **Available Drivers**, can be preconfigured to contain settings such as duplex-on or grey-scale. Some of these features can be locked. Preconfigured drivers can be applied during print queue management operations or exported to disk as standalone INF driver install file sets.

All drivers installed onto remote hosts by HP Web Jetadmin are installed using INF driver install file sets. They are not installed with any additional software such as utilities or toolboxes.

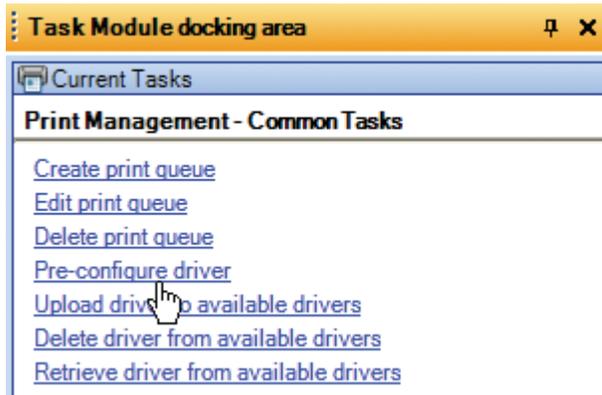
Adding a driver

This functionality can be found in the **Print Management** view in the **Available Drivers** task module. From here, drivers INF install file sets can be uploaded into the HP Web Jetadmin host. These drivers can then be installed onto remote hosts through either a print queue **Edit...** or **New...** within the **Print Queues** task module or, through the **Create Print Queue** wizard.

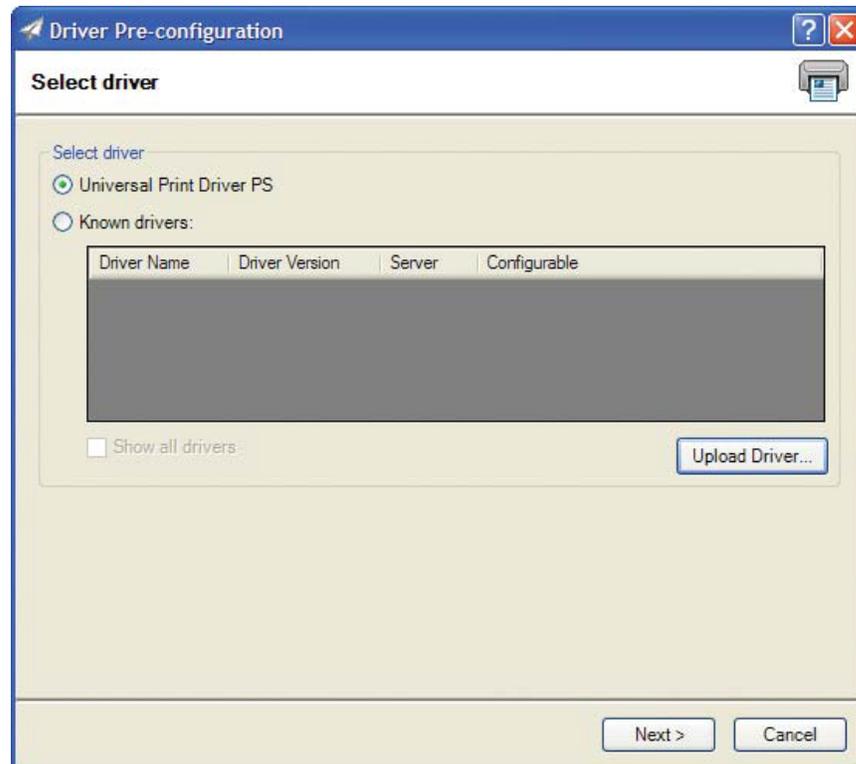
Preconfiguring a driver

1. In the left navigation pane, click **Print Management** at the bottom of the screen.

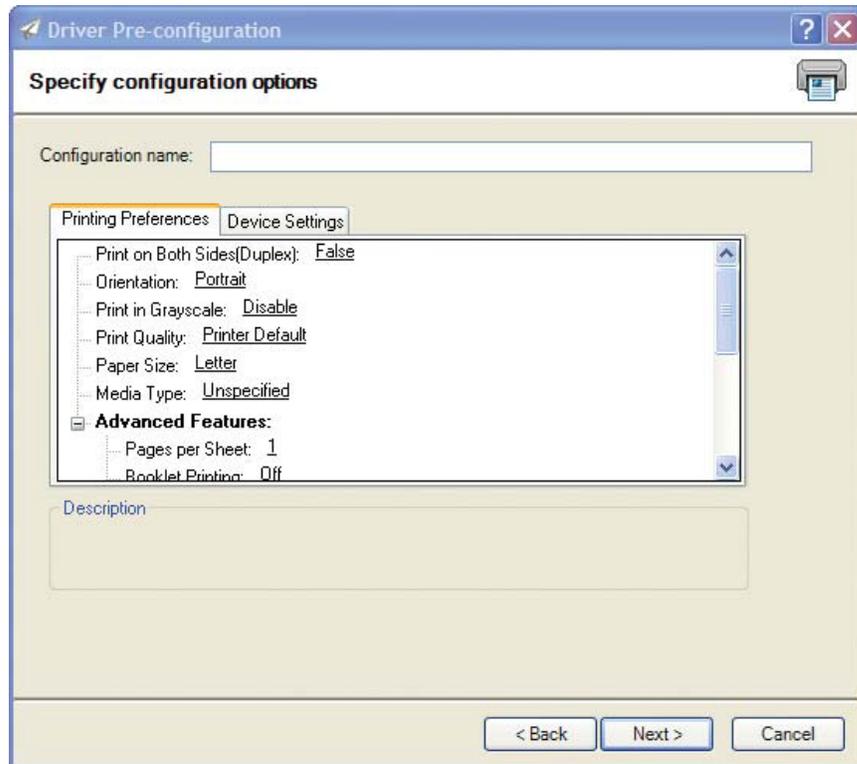
In the **Print Management - Common Tasks** task module, click **Pre-configure driver**.



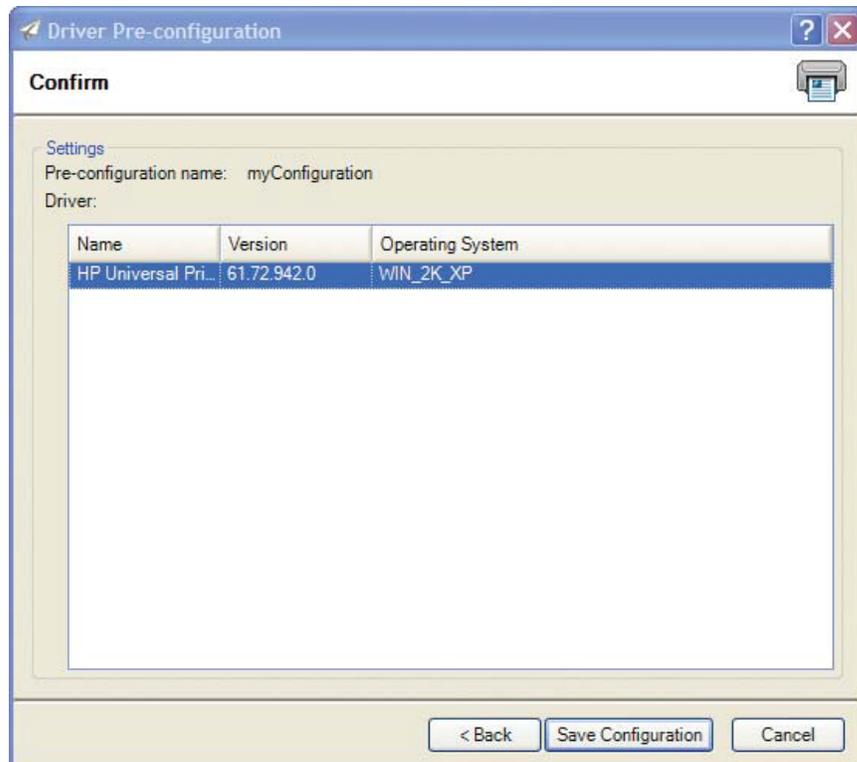
The **Driver Pre-configuration** wizard is started with the **Select driver** page displayed.



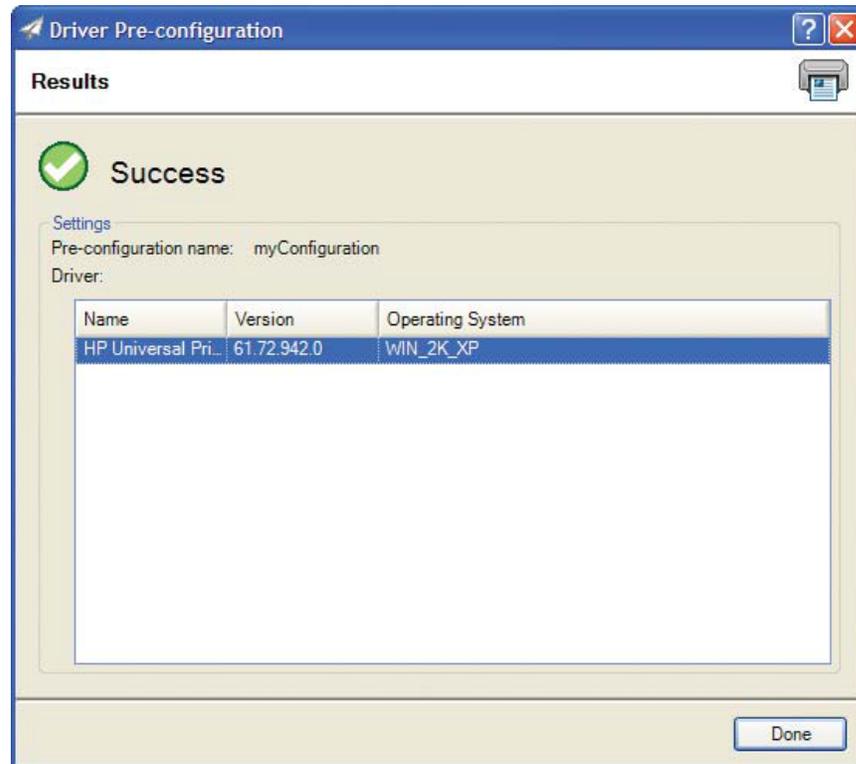
2. Select the driver and click **Next**. The **Specify Configuration Options** page appears.



3. Configure the driver settings and name the pre-configuration for the driver; notice that some settings might be locked in which cases you cannot edit them. Click **Next**. The **Confirm** page appears.



4. Click **Save Configuration**. The **Results** page appears.



5. Click **Done**. The **Print Management** page appears.

The new pre-configuration and the default configuration now exist and can either be exported to an INF driver install file set or used in managing print queues.

Using preconfigured drivers

Within any of the **Edit...**, **New...** or **Create Queue** interfaces, a preconfigured driver selection can be made for HP Web Jetadmin host driver selections that have had the pre-configuration performed. When one of these drivers is selected from the **Select Driver, Known Drivers** listing, the **Next** button advances the tool to the **Select driver pre-configuration** interface. Here the user can select from either **Default** or any previously stored pre-configuration. This pre-configuration is applied to the host where print queue management is targeted.

HP Universal Print Driver (HP UPD)

The HP Universal Print Driver Postscript (HP UPD-PS) is bundled with HP Web Jetadmin software and can be installed from any create or edit queue interface. The HP Universal Print Driver has pre-configuration capabilities which allow you to specify print defaults such as duplex or grayscale. Some of these defaults can be locked so that users must always use certain features such as duplex. When HP Web Jetadmin creates a queue using the HP Universal Print Driver, the driver and printer (specified in HP Web Jetadmin) are installed in traditional mode. This means that the printer and driver have none of the special HP Universal Print Driver features that are available when this driver is installed from install.exe when downloaded from <http://www.hp.com>.

NOTE: Other UPDs can be added using **Upload** and pointing to the .INF installer file.

Retrieving a print driver

1. In the left navigation pane, click **Print Management** at the bottom of the screen.

In the **Print Management - Available Drivers** task module, click **Retrieve**. The **Get Driver** wizard begins when the **Select driver** page appears.

2. Select the driver:
 - **Universal Print Driver**
 - **Known Drivers:** drivers that are already installed on the remote host or drivers that exist on the HP Web Jetadmin server (INF driver install base). These drivers, when identified for use with the print queue, are added to the queue as it is being installed.

To view all drivers (not just the ones that are specific to the selected device), click **Show all drivers**.

Click **Next**.

3. Select the driver and the pre-configuration for the driver and click **Next**. The **Specify destination settings** page appears.
4. Select a folder for the driver and click **Next**. The **Confirm** page appears.
5. Click **Start**. The selected driver is copied to the destination specified in the preceding step.
6. Click **Done**. The **Print Management** page appears.