DRIVER CONFIGURATION
Support Guide

HP Driver Pre-Configuration and Deployment Guide

Support Guide

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1   Introduction

The *HP Driver Pre-Configuration and Deployment 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 (DCU)

● HP Driver Deployment Utility (DDU)

● HP Web Jetadmin (WJA)

NOTE: The System Administrator Guide (SAG) provides detailed instructions for other installation methods and can be downloaded from http://www.hp.com/go/upd.

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 pre-configure 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.

If Windows print servers or workstations are used, use any of the three tools to pre-configure the installed drivers, and then install the driver:

● The DCU creates a cfm file that reflects the specified settings when it is installed. For more information on available installation methods, see the SAG.

● The DDU creates a package for driver installation that can also be used to pre-configure the driver.

● The WJA can configure and install drivers. Its queue management capability can pre-configure and create the queue on each Windows print 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 each product. Each print server can then supply configured drivers to all Windows clients.

The process for driver preconfiguration 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*.cfg 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.

2 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.

> **NOTE:** Windows requires a user to have Administrator rights to install a printer driver.

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).

Network administrators can use the HP Driver Configuration Utility to pre-configure 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. Since the driver is not pointing to a specific device at this point, the available settings in HP DCU are based on settings available in the driver and not a specific device. If you are pre-configuring the HP UPD, additional trays may be shown, as well as color-related settings such as Grayscale. If the actual device does not support a specific setting in HP DCU, the setting is ignored. For example, if you enable Grayscale and then connect to a monochrome printer, the Grayscale setting is ignored.

The pre-configuration and installation 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 installation and deployment is detailed in the System Administrator Guide

Driver acquisition

Acquire the software by doing one of the following:

● Download the latest drivers from the HP Web site. (Recommended) http://www.hp.com.

● Retrieve drivers-only from the media (CD-ROM/DVD) that came with the printer.

● Use drivers that are already in the organization. For example, a driver that was certified by internal testing procedures for use within the organization.

Access/installation

HP DCU is included with the HP Printer Administrator's Resource Kit (HP PARK) and can be downloaded at:

www.hp.com/go/upd

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.

The driver configuration is stored in a configuration file named hpcpu*.cf_. For example, the configuration file for HP UPD 5.5 would be named hpcpu130.cfg.

NOTE: HP UPD version 5.03 and older store the configuration in a binary file named hpcpu*.cf_.

Using the driver configuration utility, you can open the cfg file and make configuration changes for the default settings, however, this can break the driver signature (WHQL). Instead of overwriting the cfg file, HP recommends saving the file as a *.cfm file, which can then be used during driver installation without breaking the driver signature (WHQL).

The driver defaults can be changed by modifying the cfg file. There are a few drawbacks, including:

- It can break the WHQL driver signature.

- Modifying the cfg file only works on Windows Vista or older operating systems when you install the print driver for the first time. Otherwise, Windows will select the driver from the driver store and ignore any modifications to the cfg file. Windows XP, Server 2003, and Server 2008 will always use the modified cfg file.

Using the cfm file or modified cfg file

HP UPD 5.1 and newer uses hpcpu*.cfg. You can modify the cfg file with the driver configuration utility, but it breaks the WHQL signature. HP recommends only using *.cfm files to change default settings.

NOTE: HP UPD 5.0.1 and older use *.cf_ files instead of *.cfg files. For more information, see Appendix A.

There are two methods for using a cfm file:

Universal Installation

NOTE: Using the universal installation method requires UPD 4.x or newer.

1. Copy the cfm file to a ..\3 folder.

    - 64 bit Windows- C:\Windows\system\spool\drivers\x64\3

    - 32 bit Windows- C:\Windows\system\spool\drivers\w32x86\3

2. Install the driver using any of the supported installation methods.

The *cfm file is not deployed as part of the standard driver installation package, unless you installed using a command line installation as shown on page 5. This restricts its use for local installations.

Utilization requires that the .cfm reside on the local machine's driver installation directory before the HP UPD installation. When the HP UPD installation is launched, the settings defined in the *.cfm file become the installed defaults. If a *.cf_ or *.cfg file exist along with a *.cfm file, the *.cfm file on the local machine's driver installation directory will take 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. To change the defaults for new printers using the existing installed driver, the local machine's *.cf_ file can be modified with the HP DCU, or a new hpcpu*.cfm file can be added to the local machine.

Command Line Installation

NOTE: Using the command line installation method requires UPD 5.2 or newer. However, using a custom name does not work with UPD 5.4 (defect 7580).

Install the driver from the command line with the /gcfm option, referencing the cfm name and location, This can be the default name (hpcpu*.cfm) and the default location (in the unpacked driver directory), or it can be a custom name and location. Examples include:

● Install.exe /gcfm"C:\HP Universal Print Driver\pcl6–x64–5.3.1.10527\hpcpu115.cfm/n"PrinterName" /sm"HostName"

● Install.exe /gcfm"C:\temp\hpcpu115.cfm" /n"PrinterName" /sm"HostName"

● Install.exe /gcfm"C:\temp\duplex.cfm" /n"PrinterName" /sm"HostName"

For a description of all install.exe options, see the System Administrator Guide, or enter install.exe /? in the command prompt.

Creating cfm files

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.

> **NOTE:** The HP DCU is included with the HP Printer Administrator's Resource Kit (PARK). To download the PARK, go to the HP website, www.hp.com/go/upd. Select the **Documentation** tab, and then select **Universal Print Driver Tools> HP Printer Administrator's Resources Kit**.

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 preconfiguration. 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.

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, \ \fileserver\upd_duplex_enabled and \\fileserver\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*.cfg 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 preconfiguration.

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.

Pre-configure the HP UPD

Use the following steps to pre-configure the HP UPD:

1. Run the HP Driver Configuration Utility. Double-click `HPBCFGAP.EXE`.

   NOTE: The application automatically opens in the language specified within Region and Languages.

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 may invalidate the driver's digital signature and triggers the appearance of this dialog box.

   Figure 2-1 **Digital Signature Not Found** dialog box

3. Open a driver configuration file (cfg) or an existing cfm file, and modify settings to your requirements.

4. Save the changes.

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

   File-Save As: Allows you to select file name and extension. If only a file name is used, then the application saves the file as (filename).cfg to the defined directory. In order to save the file as a cfm, you must type the extension .cfm after the file name.

When copying the cfm file to the local machine driver directory, the cfm file name must have the format hpcpuxxx.cfm, where xxx matches the number of the cfg file. For example, hpcpu130.cfg would be named hpcpu130.cfm.

When using UPD 5.2 or later (excluding 5.4), you can use any file name, as long as it uses the extension .cfm, and the install.exe is used with the /gcfm option to install the printer. For example, install /gcfm"c:\temp\duplex.cfm" /n"PrinterName" /sm"HostName"

The driver directory can be found at:

- **32–bit systems-**systemroot\system32\spool\drivers\w32x86\3

- **64–bit systems-**system\system32\spool\drivers\x64\3

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

New features in HP DCU 1.0.0.50

The following are the new features for HP DCU 1.0.0.50:

- Define device type **Color** for HP UPD.

- **Job Retention Mode** changed to **Job Storage Mode**. In addition, new help text was added.

- The **Secure Printing** selection for the **Job Storage Mode** now includes the **Personal Job** and **Stored Job** options.

- Raster compression.

New features in HP DCU 1.0.4.102

The following are the new features for HP DCU 1.0.0.102

- Add New Media size (L size) support

New features in HP DCU 1.0.4.100

The following are the new features for HP DCU 1.0.0.100:

- Job Storage Mode, PIN to Print adds setting "Request PIN (while printing)" for every new print job

Lockable features

Each HP printer model defines the feature set available for preconfiguration. In general, most driver features are supported, meaning that device settings and printing preferences can be customized prior to installation. Additionally, some features can be locked to a particular state if an IT administrator desires control over device usage. Features that are defined under custom shortcuts cannot be locked. The following features can be locked:

●   Print on Both Sides (Duplex)

●   Print in Grayscales

●   Color Options

●   Economode

●   Media Type

●   Paper Source

●   Job Retention

●   Output Bin

●   Watermarks (UPD 5.2 or later)

●   Device Types (UPD 5.3 or later)

NOTE: Some features require a minimum UPD version in order to be locked.

The following features have a minimum UPD version and a minimum DCU version requirement in order to be locked:

Feature	Minimum UPD Version	Minimum DCU Version
Deleting a default shortcut	5.2	1.0.0.38
Locking a watermark	5.2	1.0.0.38
Device Type "Color"	5.3	1.0.0.50
Configurable option "Raster Compression"	5.3	1.0.0.50
New setting "Request Pin (while printing) with Job Storage Mode and PIN to Print"	5.4	1.04.100
Preconfigure trays 1–10 as installed/not installed	5.5.0	1.0.4.102
Enable a separator page	5.6	1.56.2.2

3   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.

NOTE: Windows requires a user to have administrator rights to install a printer driver.

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.

For a list of supported operating systems, see the current HP DDU Release Notes included in the HP Printer Administrator's Resource Kit (PARK). You can download the PARK from the following HP Web site: www.hp.com/go/upd.

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 PARK. To download the PARK, which includes the HP DDU software and this guide (*HP Driver Configuration and Deployment 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 USB 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 preconfiguration, 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 the files are copied into 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 preconfiguration 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.

New features

The following new features have been added to the HP DDU:

- **Progress dialog**—The HP DDU has been modified to display a progress dialog while the driver is being installed on the client. The progress dialog does not require user interaction and can be disabled to provide a completely silent install at runtime. To disable the progress dialog, run the deployment package with the `/q` command line `InstallPackage.exe /q`.

- **Command line**—Command line options have been added to allow modification of the deployment package at runtime. The command line options overwrite current package settings. Full command line details are documented in the help file of the UI, and can be displayed by running the deployment package with the `/?` command line `InstallPackage.exe /?`.

DDU Package command line options

Table 3-1 HP DDU command line options for direct connect packages

Option	Description
/?	Display the command line information (English only).
/q	Suppress the progress bar.
/p	Prompt user to connect the printer.
/np	Do not prompt user to connect the printer.
/s	Suppress the end user error messages.
/ns	Do not suppress the end user error messages.

Table 3-2 HP DDU command line options for network connect packages

Option	Description
/?	Display the command line information (English only).
/q	Suppress the progress bar.
/s	Suppress the end user error messages.
/ns	Do not suppress the end user error messages.
/ip <ip address>	Use the specified IP address to identify the printer; for example `/ip 120.25.5.56`.
/hw <hardware address>	Use the specified hardware address to identify the printer; for example `/hw 0001E6299128`.

Option	Description
/hn <hostname>	Use the specified hostname to identify the printer; for example `/hn Myhostname`. The hostname cannot be longer than 255 chars and can only contain the following characters: A-Z, a-z, 0-9 and the dash (-).
	In Dynamic mode, the HP UPD provides the ability for a user to search the network for installed devices. This discovery process is done via an mDNS broadcast which is sent to the local sub-network of the HP UPD only. The following are the most common reasons the devices do not appear in the discovery window:
	1. **The device is not turned on or functioning properly.** Try to ping the device from the PC where the HP UPD is installed. If there is a response to the ping, continue troubleshooting.
	2. **The devices require the correct protocols to be enabled to respond to the mDNS broadcasts.** Enable the 9100, IPV4 broadcasts, and mDNS protocols on the devices.
	3. **The devices not appearing could be on a different sub-network than the device running the HP UPD software.** Ensure that the IP address for the HP UPD and the device are located on the same sub-network.
/pn <portname>	Use the specified name as the portname; for example: `/pn HPPort`. The portname cannot contain spaces and cannot be longer than 128 characters.
/n "<printername>"	Use the specified name as the name of the printer; for example: `"HP LaserJet 8150"` The printer name must be contained in quotes, cannot be longer than 40 characters, and cannot contain any of the following special characters: ! # , .
/d	Set this printer as default.
/nd	Do not set this printer as default.
/sn "<sharename>"	Turn sharing on and use the specified name as the share name for the printer; for example: `"My shared HP LaserJet 8150"`. The share name must be contained in quotes, cannot be longer than 80 characters, and cannot contain the following special characters: / \ : ; " ? * + = < > [ ].
/sn	Turn sharing off.

HP DDU Frequently Asked Questions

Does HP DDU support driver preconfiguration?

Yes, the DDU can be used to pre-configure a driver for deployment. When the package is run on the client PC, the new configuration file is used to configure the driver after it is installed. This does not break WHQL certification.

How do I use the HP DDU to deploy a direct connect driver with preconfiguration?

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 **Preconfiguration** checkbox. This checkbox is enabled only for drivers that support preconfiguration.

   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 isn't 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 preconfiguration?

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 **Preconfiguration** checkbox. This checkbox is enabled only for drivers that support preconfiguration.

   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.

Does HP DDU work on all HP printer drivers?

The DDU will work with printer drivers that can be installed using Add Printer Wizard using an .inf. 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 will package up all files in the directory (and subdirectories) where the driver .inf was found.

The driver must be expanded so that the DDU can process the .inf files. If you download an .exe with the driver files, you will need to run it first to unpack all the files. Then you run the DDU to package it for deployment on the client system.

Does HP DDU break WHQL certification?

If the driver was WHQL certified, and the driver files are organized within one directory structure, then DDU will not break WHQL certification. DDU packages all the files found in the driver directory

structure without modifying them. If driver pre-configuration is done, the new configuration file is used to configure the driver after it is installed. This does not break WHQL certification.

When should I use the UPD installer instead of HP DDU?

The HP UPD installer has many unique settings that can be configured on the command line. If you need any of these unique items, you should use the UPD installer instead of DDU. For more information, see the white paper found on the following documentation Web site: http://www.hp.com/go/upd.

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

You might want to use the DDU instead of the HP UPD install.exe to deploy a direct connect driver in traditional mode, or a network install in traditional mode.

What does the HP DDU do on the client system?

For a direct connect package, the DDU will copy 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 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 DDU will copy the driver files into the Windows driver store, and then install the printer using the network information entered by the administrator.

How do I reuse a package I created?

Run the package with /? on the command line to display the command line options available. You cannot change a package from direct connection to network connection, but you can modify some of the settings. If you do not overwrite a setting, the current package setting will be used. The printer name and share name settings must be in quotes if they contain spaces.

For example, to reuse a network package by changing the IP address of the target printer on the command line, and then suppress the progress dialog, use the following command line:

```
DeploymentPackage.exe /ip 20.40.60.80 /q
```

If you also need to change the printer name in the above example, use the following command line:

```
DeploymentPackage.exe /ip 20.40.60.80 /q /n "my printer name"
```

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 theHP 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.

\Driver Deployment Utility

\Help

\HPDDU

Hpddu.exe

Portcreationsdk.dll

What if the user connects the printer before the DDU package is run?

If the user connects the printer, but then cancels the plug and play event before it finishes, this creates an incomplete plug and play event. After copying the driver files to the Windows driver store, the HP DDU code will cleanup incomplete plug and play events for devices supported by this driver. Then it will refresh the bus, causing the Operating System to plug and play the printer (installing the driver and creating the printer object.)

4 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

> **NOTE:** HP Web Jetadmin Print Management features are not supported for managing print queues, print settings or print drivers on a Windows Vista host.

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.

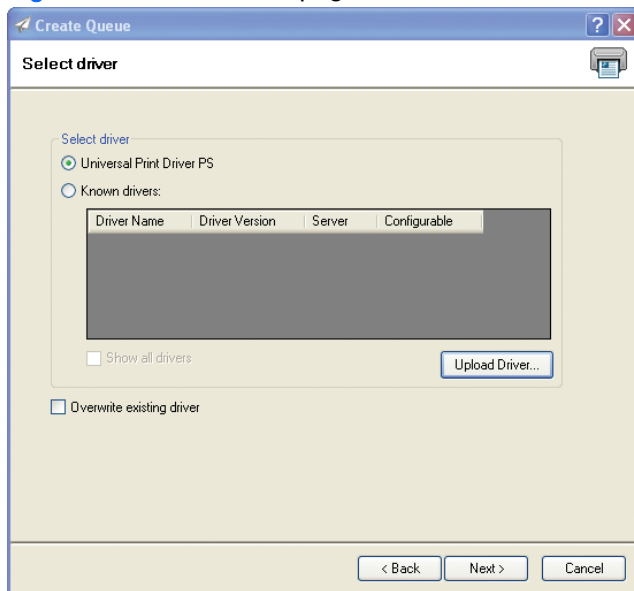**Figure 4-1** **Select device** page
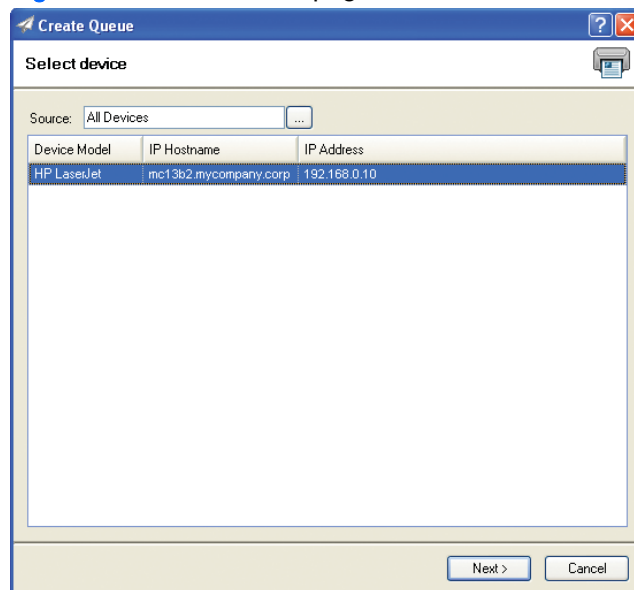
2. Select a device from the list (only one device can be selected). Click **Next**. The **Select server** page appears.

Figure 4-2 **Select server** page
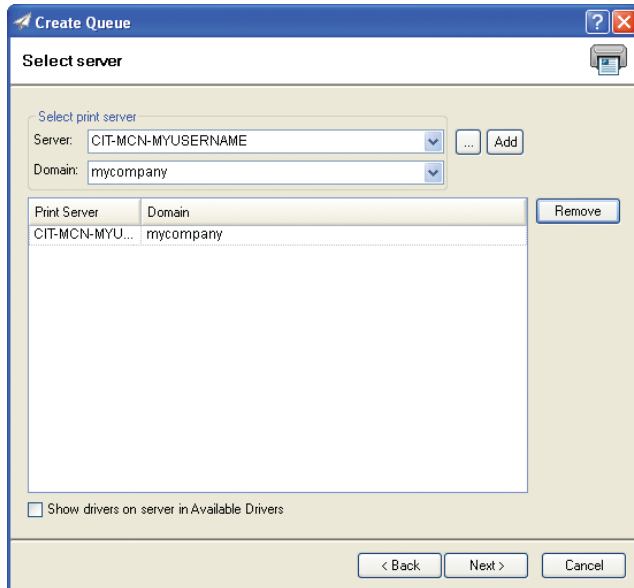
3. Select a server name and a domain. Select **Add** (more than one computer name can be selected). Click **Next**. The **Select driver** page appears.

Figure 4-3 **Select driver** page

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. Preconfiguration 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 preconfiguration 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.

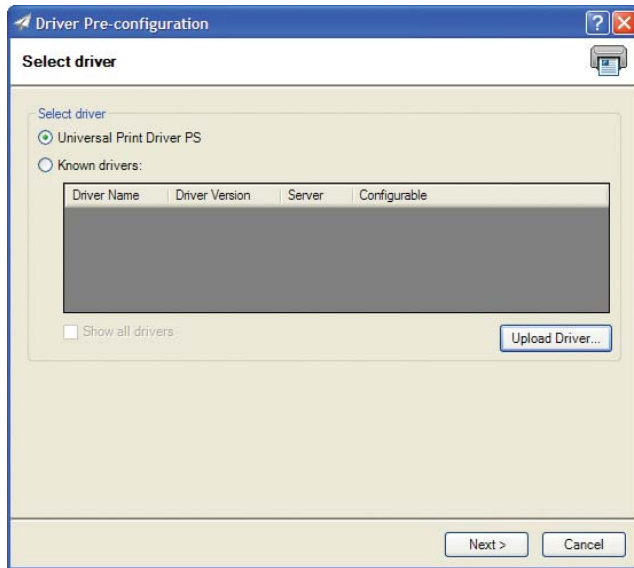**Preconfiguring a driver**

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**.
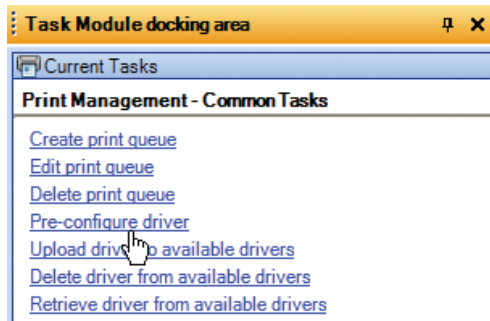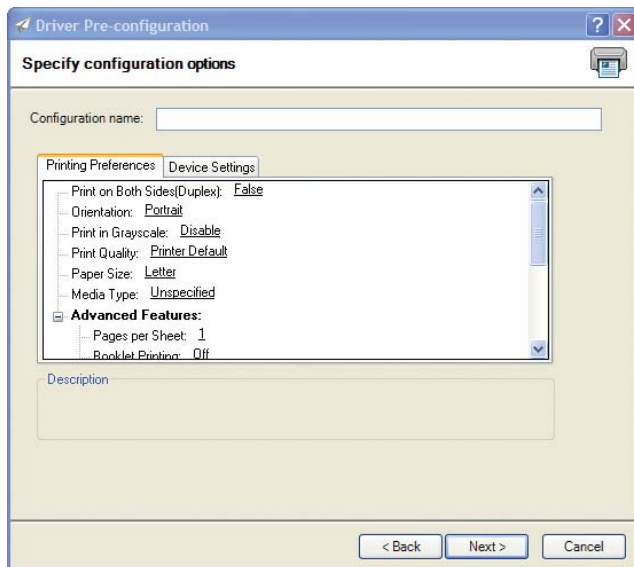

   The **Driver Pre-configuration** wizard is started with the **Select driver** page displayed.
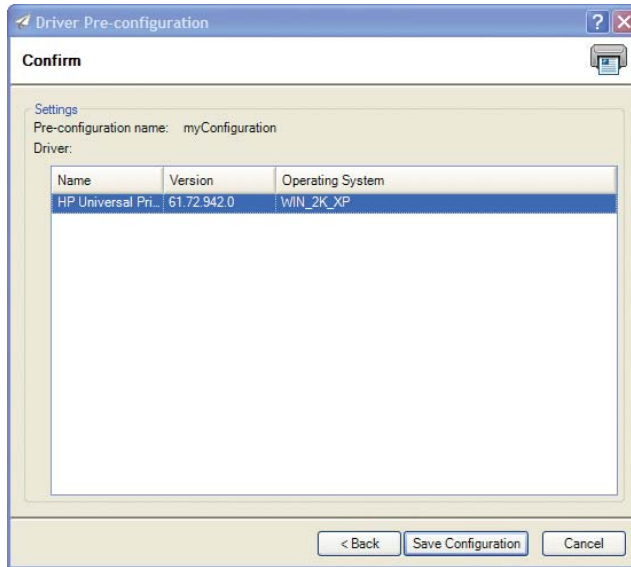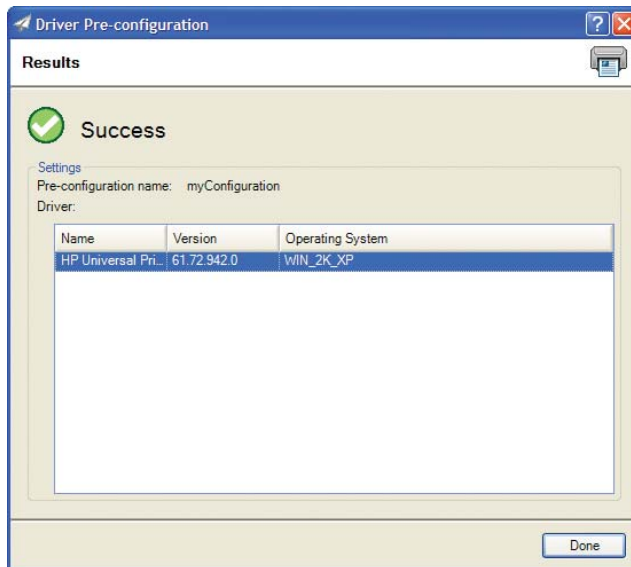
2.   Select the driver and click **Next**. The **Specify Configuration Options** page appears.

3. Configure the driver settings and name the preconfiguration 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 preconfiguration 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 preconfiguration 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 preconfiguration. This preconfiguration 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 preconfiguration 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.

5   Appendix A

The hpcpu*.cf_ (available in HP UPD 5.0.3 and earlier releases) are compressed configuration files compressed in the driver package supplied with the drive. It can only be edited using DCU. When the DCU is used to preconfigure driver settings, the driver's default configuration file is copied outside the compressed driver package allowing the contents of the configuration file to be modified with administrator-defined settings. These modifications become the default settings for any printer that uses the pre-configured driver package during installation. Any modification to the hpcpu*.cf_ that is made with the DCU is saved in a separate file. Thus, when selelecting **File>Save** in the DCU, the modified configuration package does not get re-added in compressed form back into the default *.cf_ driver package. Instead, it will be saved as *.cf$. 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.