DIRECT IP PRINTING
with the HP Universal Print Driver

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INTRODUCTION

In certain circumstances, a direct IP/HP Universal Print Driver (UPD) printing environment can be an efficient and cost-effective alternative to a client/server printing environment. HP developed this white paper to help you decide whether a move to a direct IP/HP UPD environment is right for your organization.

To help you with this decision, this white paper cites HP's own successful migration from client/server printing to direct IP/HP UPD printing. It looks at the background and the business challenges that led to HP's decision, and it details the process of the migration. It also addresses possible issues and benefits for using the HP UPD for direct IP printing in your printing environment.

Direct IP printing connects computers directly to network printers for printing without the need for print servers. The features of the HP UPD make direct IP printing easy and convenient for users while simplifying printing support for IT administrators.

BACKGROUND

HP based its decision to migrate from a client/server print environment to a direct IP print environment on the potential cost savings and the improvements to print management it can provide.

HP's high-cost print infrastructure was attributed to the following:

- Multiple print architectures—HP's network contained a variety of print architectures, which lead to higher IT support costs, including driver deployment and management, print server management, and end-user support.
- Outdated server hardware—HP considered replacing its server hardware with new equipment, but it would not have been as cost effective.

RECOMMENDED PROCESS FOR TRANSITION TO DIRECT IP

Before beginning its transition to direct IP/HP UPD printing, HP identified the following important objectives and tasks:

- Integrate the various enterprise operating environments (Windows, UNIX, Linux, and MPE) and the various client access devices (servers, desktops, laptops, and PDAs).
- Define global infrastructure standards for enterprise applications printing.
- Define global standard printing hardware for use inside HP.
- Define global general office print infrastructure to reduce cost through reduction of total printers within HP.

Having support from the Information Technology team was vital for a successful transition to direct IP/HP UPD, and efforts to secure this support were undertaken early in the process. Since direct IP/HP UPD printing is a single-driver and print-server-free environment, IT immediately understood that this transition would dramatically reduce their printing-related costs by eliminating dozens of discrete drivers to support. The transition enabled HP to reduce IT costs even further by decommissioning all of its 150 general office print servers.

BENEFITS OF DIRECT IP/HP UPD PRINTING

This efficient, cost-effective support system resulted in higher user satisfaction and productivity at HP. Server consolidation and standardized devices and processes meant less time and money spent on infrastructure maintenance and support.

Benefits for users

- A consistent, user-friendly printing interface
- A simpler means of locating printers—Users can use custom Managed Printer Lists to select printers based on floor plan, tabular view, and image view
- Fewer print drivers to install and to learn how to use
- More self-sufficiency—HP UPD's Status Notification Prompts communicate real-time printer status including basic issues such as out of paper, so users can address these issues themselves

Benefits for the enterprise

- Reduced costs with single driver deployment—Users can discover and add printers easily using HP UPD in Dynamic Mode
- Simpler management—administrators can easily manage HP UPD driver capabilities using Managed Printer Policies (MPPs)
- Reduced IT costs—IT spends less time resolving print-related helpdesk calls

Benefits for IT

- Deployment benefits—Reduced driver deployment requirements, since one driver replaces multiple, product specific drivers, greatly reducing testing, installation, and management costs
- Manageability benefits—maintained IT control over printer access (using MPLs) and printer features (using MPPs), implemented via MPA or HP Active Directory Templates

IMPORTANT CONSIDERATIONS FOR MOVING TO DIRECT IP/HP UPD PRINTING

Characteristics of your enterprise

Before you decide to implement major changes to your printing environment, it is important to assess your company's printing environment and its objectives for printing, including its future printing needs. Be aware of some printing environments where direct IP printing may not be the right choice.

The only limit to the number of users who can print with the direct IP/HP UPD is the number of printers in your enterprise. For practical purposes, however, it may be necessary to balance the number of users to printers based on individual printing needs.

Your company's objectives for printing

Each company has different needs and priorities for printing:

- Is it a large enterprise with remote locations or a small business with one central location?
- Is printing mission-critical?

Consider these questions to help determine the appropriate printing infrastructure:

- Where do users print: in one office or in satellite offices?
- How many people share a printer?
- Do users have access to training for basic printing troubleshooting?
- Is the IT staff remote from printer sites?
- How much is the company spending on printer management including hardware, support, and licensing?
- How do you deploy printer drivers to users?
- How do you manage the print queues?
- Can you manage print queues on client computers?

- Do you have mobile users?

Environments where direct IP may not be the best choice

- Where users need a high level of basic support to accomplish printing tasks.

Ask your HP solutions architect or account executive for help assessing your printing needs. They might recommend HP Services for further assessment and recommendations.

DIRECT IP PRINTING VS. CLIENT/SERVER PRINTING

The following tables list some of the common pros and cons for direct IP printing compared to client/server printing. You might identify other pros and cons specific to your environment.

Pros and cons of direct IP printing

+/-	Features	Implications
+	Lower equipment costs	Savings on equipment costs such as servers and print servers
+	Policy available on a per user basis	Restrictions can be set on a per using basis using MPA or AD group policy.
+	Deployment costs	Users can set up printing on their own, no need to IT help, login scripts, etc, to deploy printers to users No print servers to upgrade,
+	Easier setup	Setting up a direct IP print environment is easier than setting up a server-based print environment Offices that change locations frequently require less assistance from IT
+	More user control over print jobs	Users maintain control of their print jobs throughout the process, relieving IT of the responsibility of managing print jobs at the servers
+	Distributed print environment	Limited impact to an enterprise as a whole when a single printer fails
-	Training costs	Users are responsible for installing their own printers, and troubleshooting their print jobs
+	Potential for increased worker productivity	Users don't have to search for drivers or resend print jobs because they inadvertently tried to print to a printer that wasn't available When Status Notification Prompts are enabled, users are aware of real-time print job status
+/-	Driver upgrade process is different	Driver update services are unnecessary to deploynew versions of HP UPD when necessary
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-	Increased configuration complexity	A hostname change on a printer requires updating all client computers However, if the hostname is registered in DNS, IP address changes will be transparent to UPD.
+/-	Policy differences	MPA or AD policy needs to be used to restrict printing to specific IP address (such as a server queue that only allows printing from select users)
+/-	Different IT tools are required to manage the printing environment	MPA and HP Active Directory templates are available for managing printer access lists and access to printer features

Pros and cons of client/server printing

+/-	Features	Implications
+	Centralized print queue	Ease of management
		Can eliminate need for local IT staff
		Provides a standardized print environment by centralizing management of drivers and other printing aspects
		IT staff manages one centralized print server rather than numerous clients
+	More scalable spooling	Print servers can typically accept more connections at a time
+	Windows Point and Print available	Driver update services are available to clients
+	More extensibility	Can be extended to include printer pooling or print clustering
+	Centralized control	Enables efficient updates
		Hostname change on a printer doesn't require updates to client computers
-	Equipment costs	Increased equipment costs such as servers and print servers
-	Deployment costs	Costs to upgrade existing print servers, and maintain print servers
-	More complicated to set up	Can make setup of the environment more time consuming and costly
-	User issues	Typically, a high percentage of IT helpdesk calls are related to printing
+	Centralized queue and printer management	Ability to limit unauthorized use

FOR MORE INFORMATION

For more information about the HP Universal Print Driver, please visit www.hp.com/go/upd.

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