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- Outdated server hardware—HP considered replacing its server hardware with new equipment, but it would not have been as cost effective.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.

To facilitate this change, HP used Managed Printing Administration (MPA) to create Managed Printer Lists (MPLs). One of the key features of MPA/MPLs is clickable image maps that enable users to easily find available printers. These maps are available in the HP UPD interface in Dynamic Mode. This provides a tremendous ease of use benefit to users.

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 vending 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 the print volume high or low?
- Is the printing mostly plain text, or is it complex and rich in graphics?
- 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 powerful is the desktop computing hardware?
- 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 printing demand is high in volume.
- Where output volume or quality is mission-critical to operations. Examples: professional services firms, such as law offices or title companies, manufacturing operations that rely on printing to communicate instructions to line workers, or marketing or graphics arts professionals who produce finished deliverables.
- Where desktop computing power is limited.
- 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
+	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
-	Increased training costs	Users are responsible for 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
-	Limited number of users who can print in a given environment	25 *concurrent* users per printer are recommended depending on usage
+/-	Windows Point and Print unavailable, and not necessary, to install printers and drivers	Driver update services are unnecessary since users download new versions of HP UPD when they become available
-	Limited control over group printing priority	IT might not be able to prioritize print jobs
-	No support for printer pooling or print clustering	May add complexity and management requirements
-	Increased configuration complexity	A hostname change on a printer requires updating all client computers
-	Policy concerns	Cannot 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
+	Control over group printing priority	Allows prioritization of print jobs (in theory; printers are usually fast enough that printing is often finished before prioritization is necessary)
+	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
-	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.

May 2011