

Hands-On Microsoft Windows Server 2008

Chapter 6 *Configuring Windows Server 2008* *Printing*

Objectives

- Understand how Windows Server 2008 printing works
- Use the XPS Print Path
- Use the XML Paper Specification (XPS)
- Install the Print Services role
- Use the Printers window to configure printing properties

Objectives (continued)

- Install local and shared printers
- Configure printer properties
- Configure a nonlocal or Internet printer
- Manage print jobs
- Use the Print Management tool

An Overview of Windows Server 2008 Printing

- When a client decides to print a file he can do the printing either on:
 - Printer locally connected to the client's computer (a local print device)
 - Or shared network printer (a network print device)
 - Or Internet printing (a type of network print device).

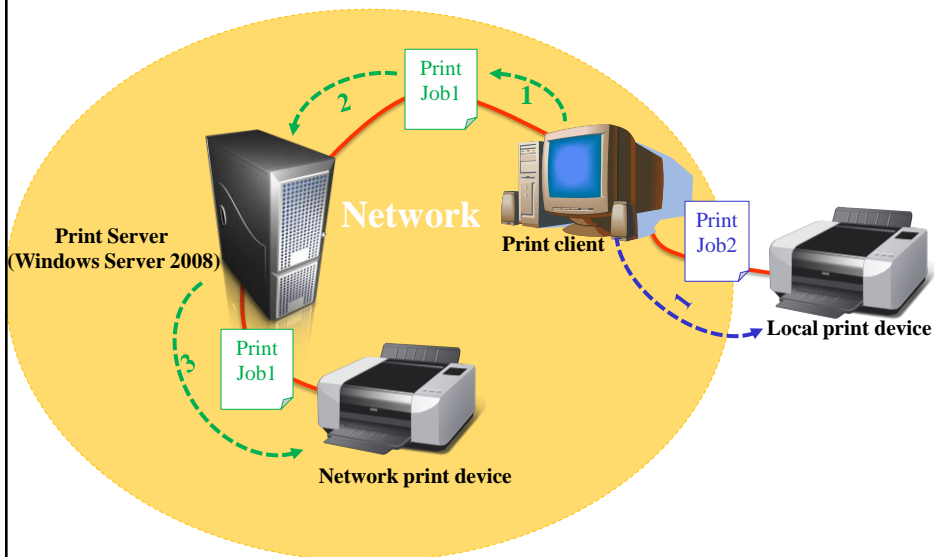
An Overview of Windows Server 2008 Printing

- Network printing process components
 - 1) **Local print device:** A printer that is directly attached to a client computer (this printer is not shared in a network).
 - 2) **Network print device:** A shared printer in the network.
 - 3) **Print client:** The client computer who want to print a document.
 - 4) **Print server (The Network Print Server):** The Windows Server 2008 server computer in the network who has a network print device (shared printer) attached to it.
 - 5) **Print job:** The file to be printed.
 - 6) **Printer driver:** the printer software (printer driver) that holds configuration information for the printer, it resides on the computer offering the printer services

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Network printing process components



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How Network Printing Works

- From slide 6, if the client wants to print a file (Print Job 1) using the network printer device the steps are as follows:
- **Printing process steps:**
 - 1) The client computer generates a print file (Print Job 1).
 - 2) The application program (example: Microsoft word) in the client computer contacts Windows Graphics device Interface (GDI) to gather format information of the print file (example: font size, font color)
 - 3) The client sends (Print Job 1) to the Server Service in the Print Server (Windows Server 2008)
 - 4) The Print Server uses four processes to receive and process the print file (Print Job 1): router, print provider, print processor, and print monitor

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How Network Printing Works (continued)

- **Printing process steps (continued)**
 - 5) The Server service in the Print Server sends the print file (Print Job 1) to its **router**.
 - 6) The **router** directs the print file (Print Job 1) to the **print provider**, which stores it in a spool memory until it can be sent to the printer.
 - Spooling a file means storing the file temporarily in a spool memory until the printer is ready to print it.
 - 7) The **print provider** works with the **print processor** to ensure that the file is formatted to use the right data type
 - 8) When the printer is ready, The **print monitor** takes the file (Print Job 1) from the spool memory and sends it to the printer.

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How Internet Printing Works

- Internet Information Services (IIS) must be installed and running in Windows Server 2008
 - The client must connect to the Windows Server 2008 IIS using a Web browser
- The print process on the client is nearly the same as for network printing with a couple of exceptions:
 - The Web Browser in the client computer sends the print file to the GDI.
 - The client sends the printing job to IIS using Internet Printing Protocol (IPP).

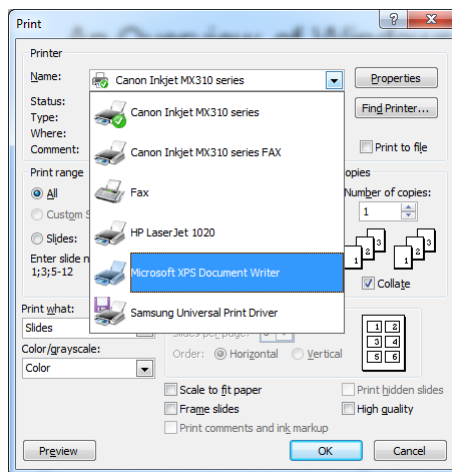
Using the XPS Print Path

- **XML Paper Specification (XPS)**
 - An advanced way of printing documents for multiple purposes, including viewing electronic pages and printing pages in a polished format.
- XPS is a concept similar to using PDF files
- Using XPS printing is similar to saving a file with XPS extension (example: slides 12-14).

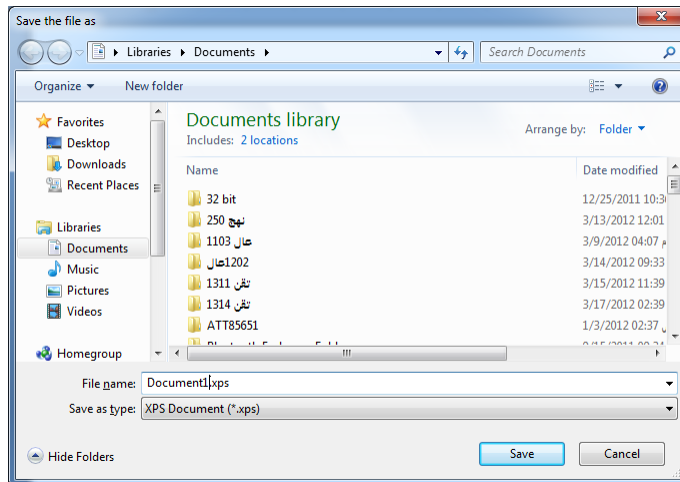
Using the XPS Print Path (continued)

- Some of XPS enhancements
 - Advanced color support for sophisticated color printers
 - Faster performance for print files generated by .NET Framework applications

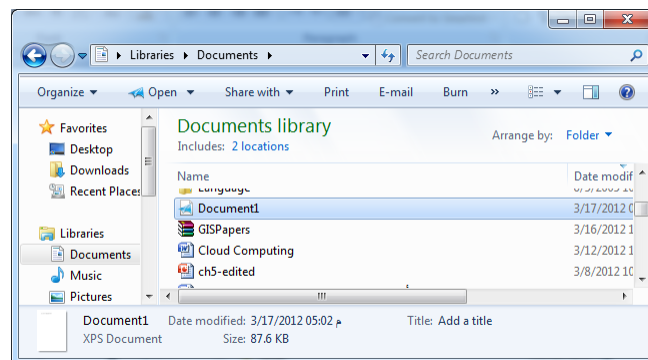
Example of XPS printing 1 of 3



Example of XPS printing 2 of 3



Example of XPS printing 3 of 3



Installing the Print Services Role

- Print Services role
 - Enables you to use the Print Management tool to manage shared printers
 - Also enables you to track printing events through a log you can view using the Event Viewer
- Services within the role:
 - Print Server
 - Internet Printing
 - LPD Service

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Using the Printers Window

- Windows Server 2008 Printers window is enhanced from previous versions to enable more flexibility

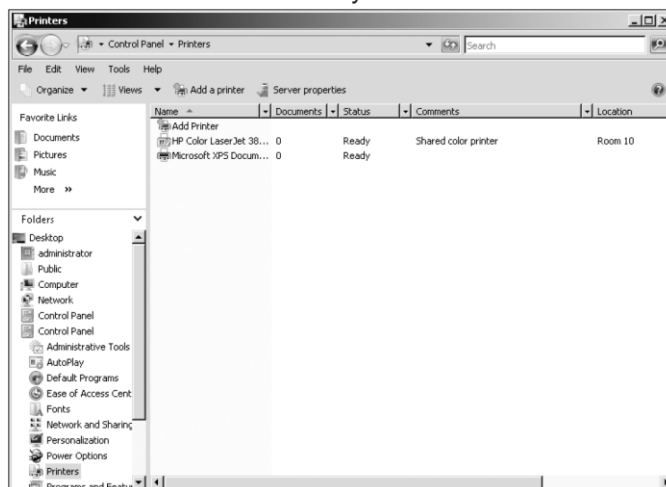


Figure 6-2 Printers window

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Installing Local and Shared Printers

- In Windows Server 2008, you can configure a printer that is attached to the server computer as a local printer
 - And then enable it as a shared printer
- When you share a printer, the Windows Server 2008 server becomes a true print server

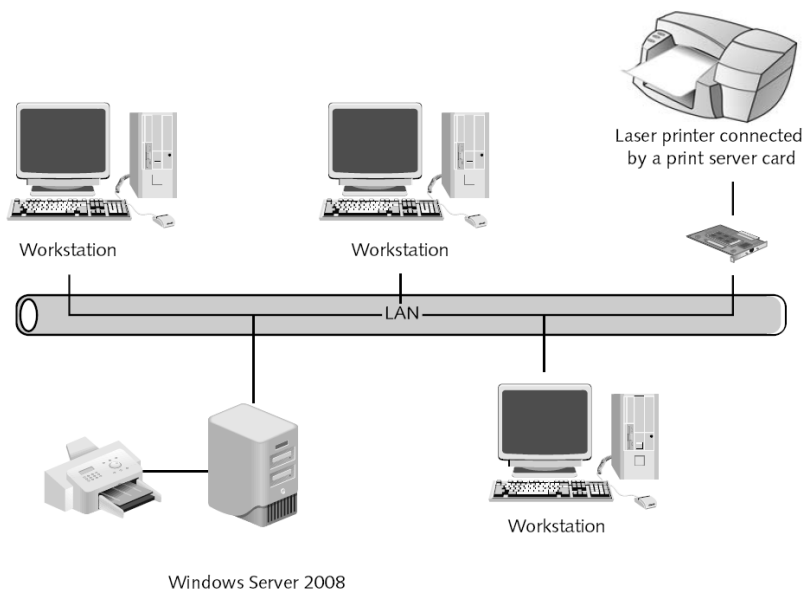


Figure 6-4 Shared network printers

Installing a Printer

- If you are installing a Plug and Play compatible printer
 - Windows Server 2008 will automatically detect and install the new hardware
- If the printer is not automatically detected, you can use the Add Printer Wizard to install it
 - Printers that are added using the Add Printer Wizard are shared by default

Enabling Printer Sharing on a Network

- After you install a printer on a network to be shared, turn on network printer sharing
 - This step enables printer sharing through the Windows Firewall

Configure Printer Properties

- Printer properties are available by opening Control Panel, then clicking Printer in the Control Panel Home View
 - Or the Printers applet in the Classic View to access the Printers window

General Printer Specifications

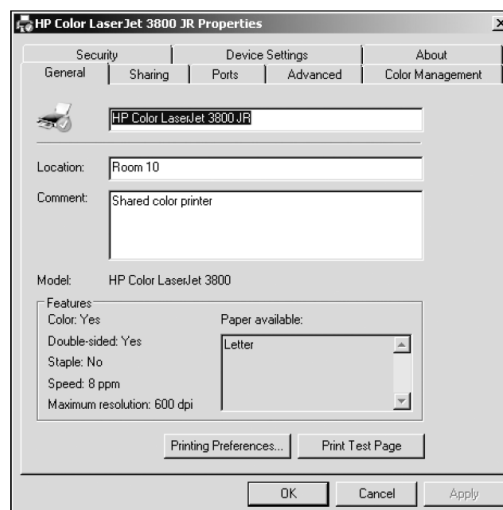


Figure 6-7 Printer Properties General tab

Sharing Printers

- The Sharing tab is used to enable or disable a printer for sharing
 - As well as to specify the name of the share
- If you enable sharing, provide a name for the shared printer
 - And check List in the directory to publish the printer through Active Directory so users can find it.

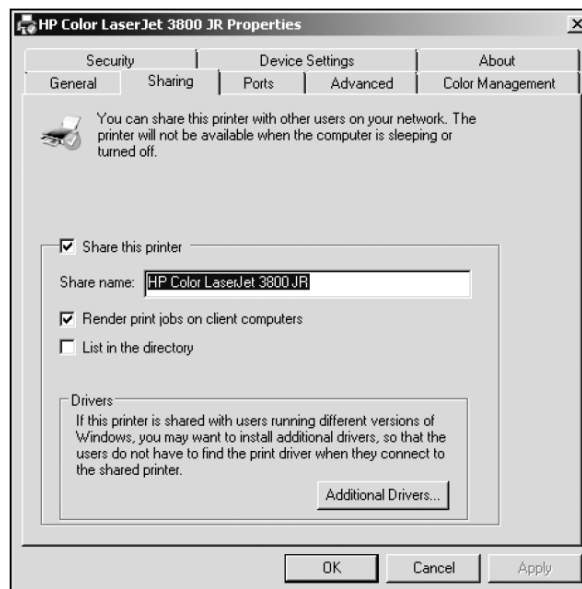


Figure 6-8 Configuring printer sharing

Port Specifications

- The Ports tab has an option to specify which server port, such as LPT1, is used for the printer

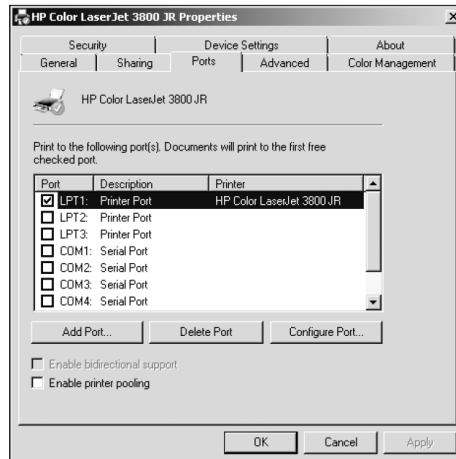


Figure 6-10 Configuring printer ports

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Port Specifications (continued)

- **Printer pooling**
 - Involves configuring two or more identical printers connected to one print server.
 - Printer pooling requires that printers must be identical so that they use the same printer driver and handle print files in the same way
- The Add Port button enables you to add a new port
- The Delete Port button is used to remove a port option from the list of ports

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Port Specifications (continued)

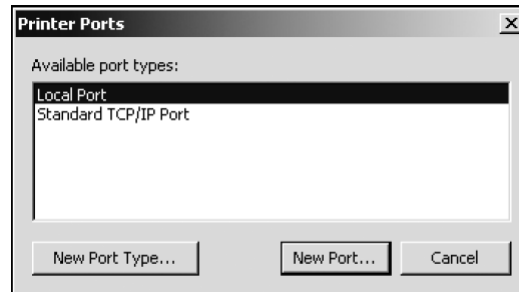


Figure 6-11 Port options

Configuring Security

- To configure security for a printer, you must have Manage printers permissions for that printer
 - Use the Security tab to set up printer share permissions
- Use the Advanced button on the Security tab to:
 - Set up special printer permissions for a specific group or user
 - Add or remove a group or user for security access
 - Set up printer auditing
 - Take ownership of a printer
 - View the effective permissions for a user or group

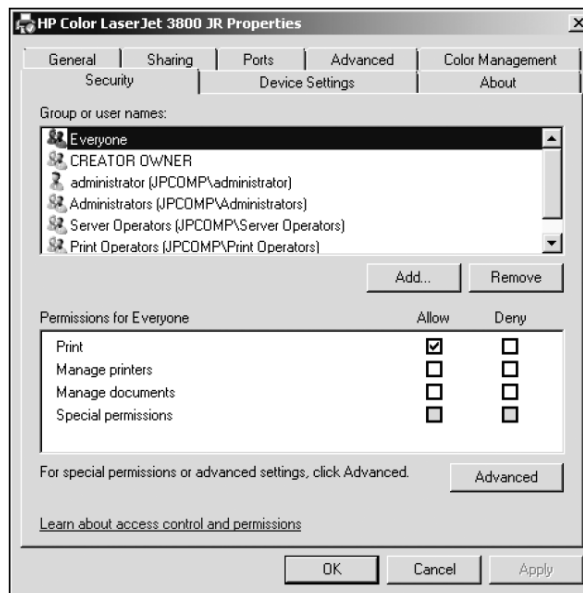


Figure 6-13 Configuring security

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Configuring Security (continued)

Table 6-1 Printer share permissions

Share permission	Access capability
Print	Users can connect to the shared printer, send print jobs, and manage their own print requests (such as to pause, restart, resume, or cancel a print job)
Manage documents	Users can connect to the shared printer, send print jobs, and manage any print job sent (including jobs sent by other users)
Manage printers	Users have complete access to a printer share, including the ability to change permissions, turn off sharing, configure printer properties, and delete the share
Special permissions	Similar to configuring special permissions for a folder, special permissions can be set up for a printer from the Advanced tab

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Managing Print Jobs

- Users with Print permissions can:
 - Send print jobs to the printer
 - Pause, resume, and restart their own print jobs
 - Cancel their own print jobs
- Print Operators, Server Operators, and other groups having Manage documents permissions can:
 - Send print jobs to the printer
 - Pause, resume, and restart any user's print jobs
 - Cancel any user's print jobs

Controlling the Status of Printing

- In Windows Server 2008, printer control and setup information for a particular printer is associated with that printer's properties
- Sometimes you need to pause a printer to fix a problem
- You can pause printing to that printer by opening the Printers window, double-clicking the printer, clicking the Printer menu
 - And clicking the Pause Printing option so there is a check mark beside it

Controlling the Status of Printing (continued)

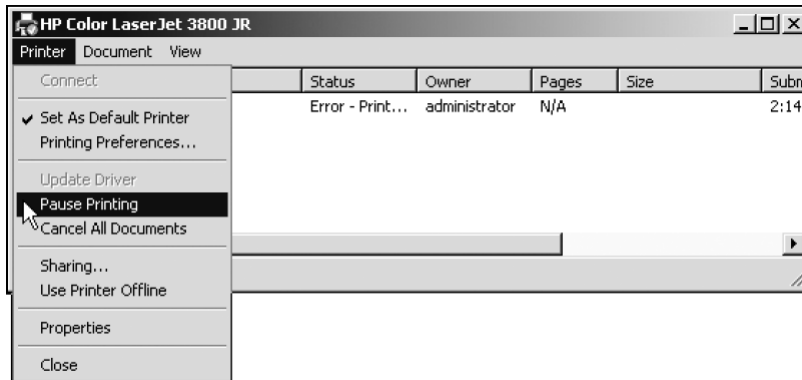


Figure 6-16 Pausing printing

Controlling Specific Print Jobs

- You can pause, resume, restart, or view the properties of one or more documents
 - In the print queue of a printer
- **Print queue**
 - A stack of print jobs, with the first job submitted at the top of the stack and the last job submitted at the bottom.

Controlling Specific Print Jobs (continued)

- In Windows Server 2008, to pause a print job, open the Printers window from Control Panel and double-click the appropriate printer
- The resulting window shows a list of jobs to be printed
 - Click the document you want to pause, click the Document menu, and then click Pause
- Jobs print in the order they are received, unless the administrator changes their priority

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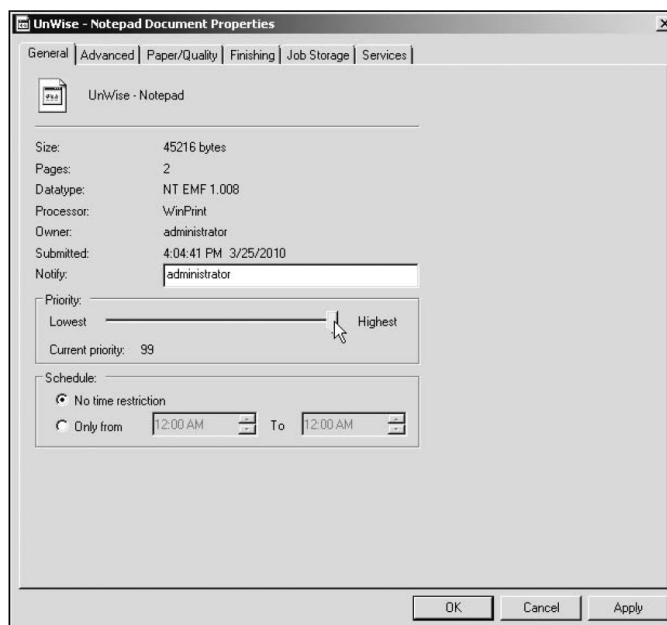


Figure 6-17 Changing the print priority

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Using the Print Management Tool

- The Print Management tool
 - Also called the Print Management Console or PMC
 - Centralizes shared printer control in one place
 - Enabling printer administrators and operators to manage the print functions of some or all of the shared printers on a network
- Using the Print Management tool, you can:
 - Start the Network Printer Installation Wizard to set up network printers for sharing
 - View and manage installed printers
 - View and manage printer drivers for installed printers

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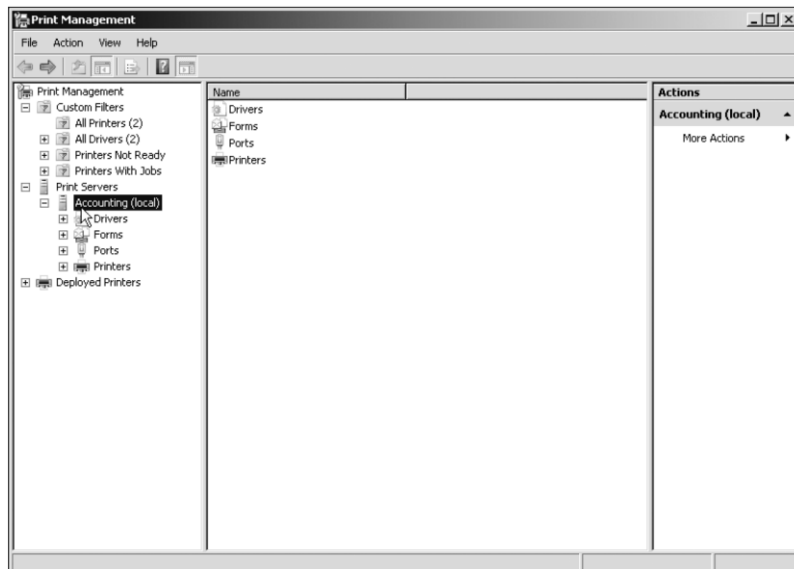


Figure 6-18 Print Management tool

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Using the Print Management Tool (continued)

- Using the Print Management tool, you can:
(continued)
 - Determine if any printers are not ready to print
 - Determine which printers have print jobs in the print queue
 - Manage which printers are associated with which printer ports
 - Pause and restart printing on a particular shared printer
 - Manage print jobs

Using the Print Management Tool (continued)

- Using the Print Management tool, you can:
(continued)
 - Manage printer sharing
 - Manage from one place shared printers set up on Windows 2000, Windows Vista, Windows Server 2003, and Windows Server 2008
 - Export preconfigured settings to a network printer using the Printer Migration Wizard