Lesson 5: Configuring Print and Document Services

MOAC 70-410: Installing and Configuring Windows Server 2012

WILEY

Overview

- Exam Objective 2.2: Configure Print and Document Services

- Deploying a Print Server

- Using the Print and Document Services Role

Deploying a Print Server

Lesson 5: Configuring Print and Document Services

Windows Print Architecture

- **Print device**: The actual hardware that produces hard-copy documents on paper or other print media.
- **Printer**: The software interface through which a computer communicates with a print device.
- **Print server**: A computer (or standalone device) that receives print jobs from clients and sends them to print devices that are either locally attached or connected to the network.
- **Printer driver**: A device driver that converts the print jobs generated by applications into an appropriate string of commands for a specific print device.

Windows Printing
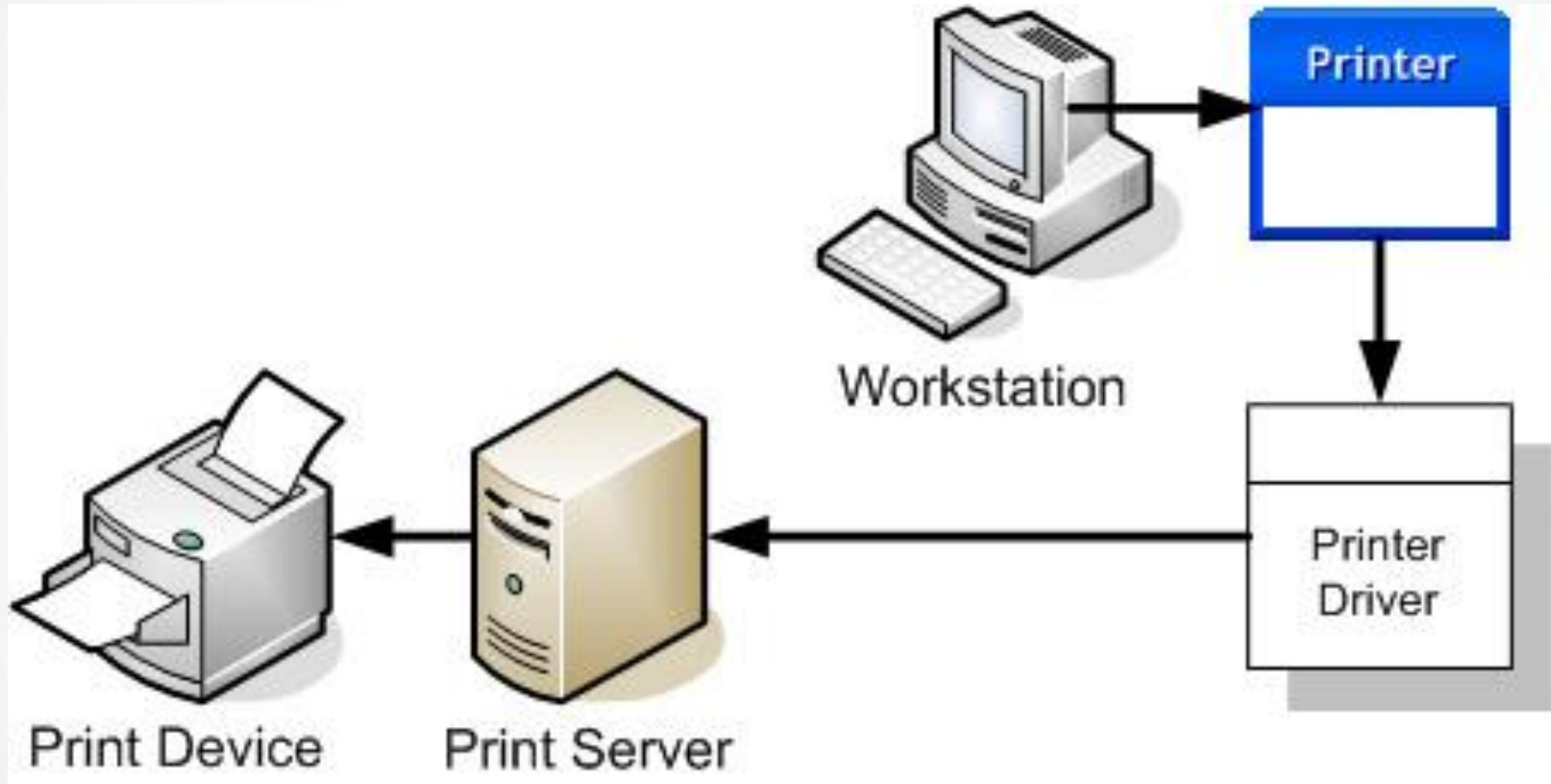
The Windows Print Architecture

Windows Printing

To install a printer in Windows:

- Select the print device's specific manufacturer and model.

- Specify the port (or other interface) the computer will use to access the print device.

- Supply a printer driver specifically created for that print device.

Windows Printing Flexibility

- A single computer can perform the roles of all printing components (except the print device), or they can be distributed across the network.

- There are four fundamental configurations:
  1. Direct printing
  2. Locally attached printer sharing
  3. Network-attached printing
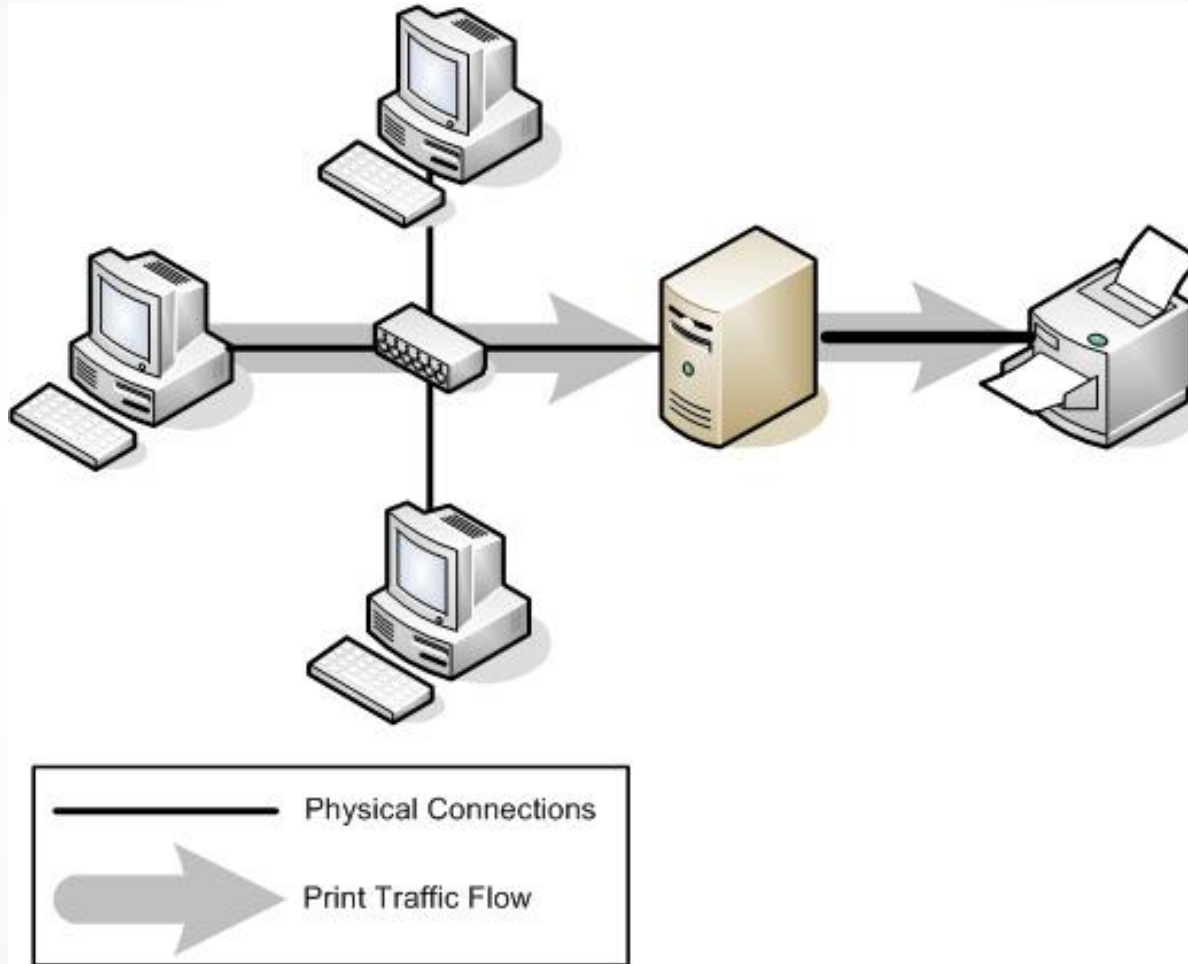 4. Network-attached printer sharing

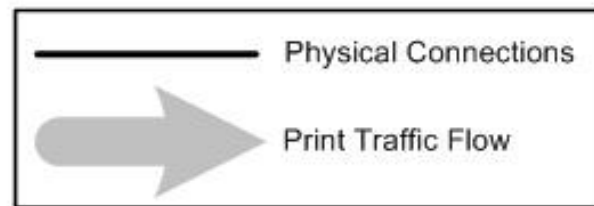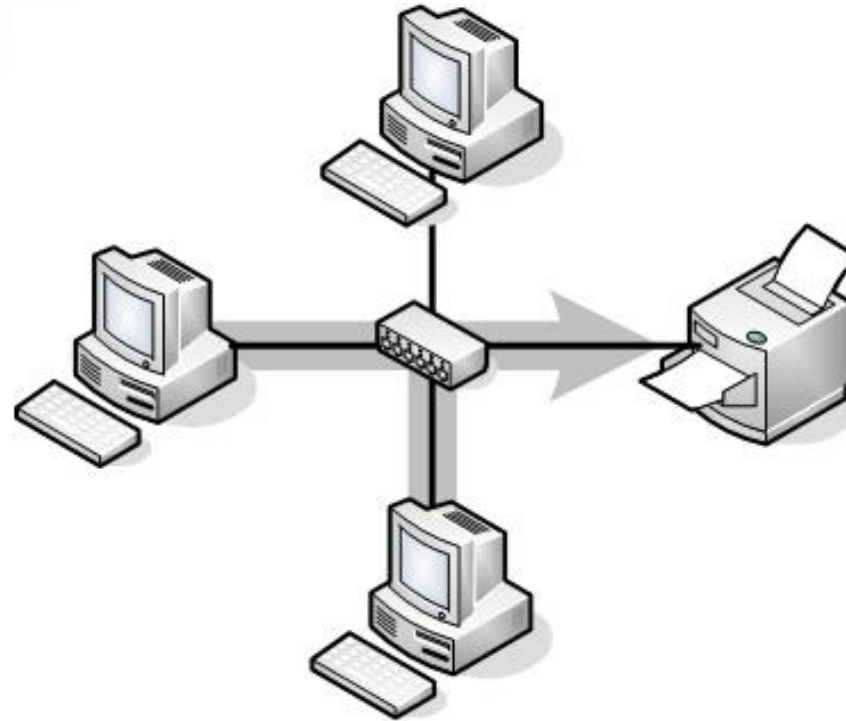# Direct Printing
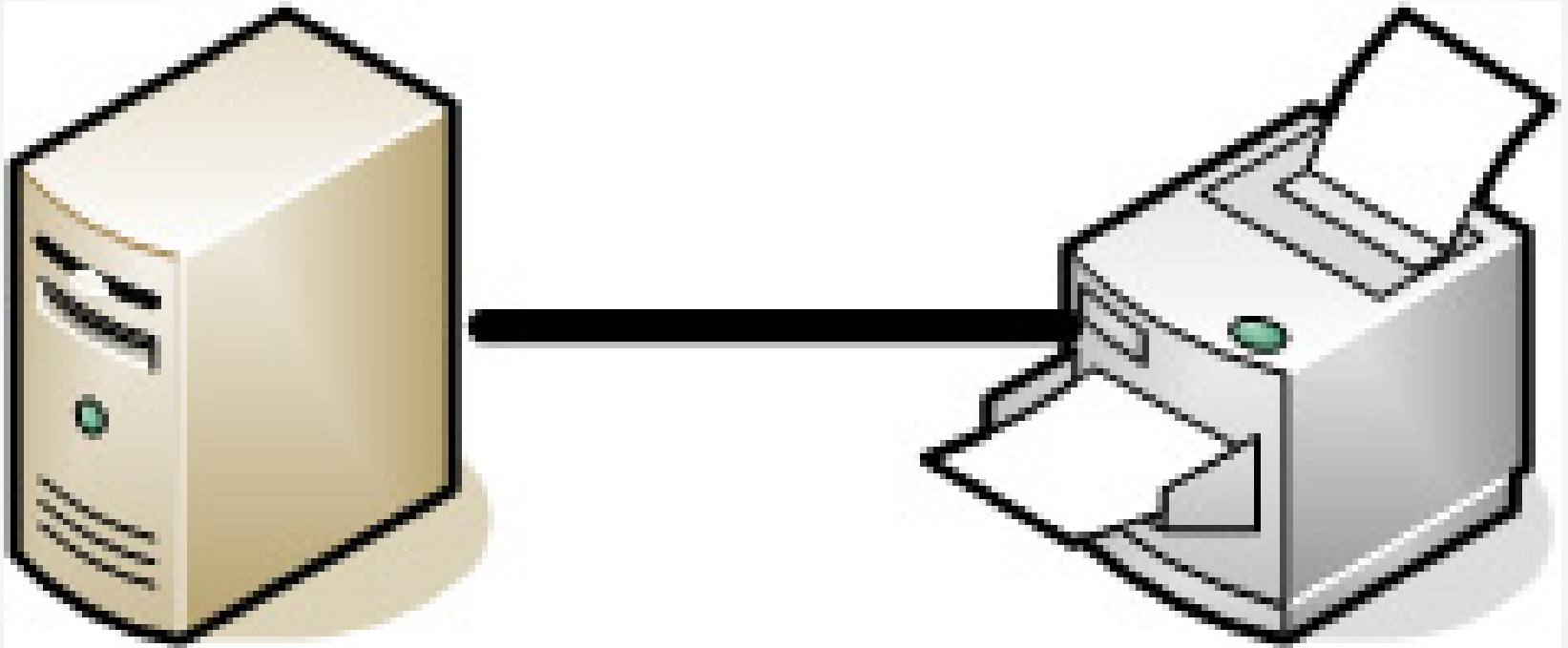
A locally attached print device

Locally Attached Printer Sharing

Sharing a locally attached printer

Network-Attached Printing

Physical Connections

Print Traffic Flow

A network-attached print device with multiple print servers

Disadvantages to Network-Attached Printing

- Users examining the print queue see only their own jobs, not the jobs of other users.

- Users have no way of knowing what other jobs have been sent to the print device, or how long it will be until the print device completes their jobs.

- Administrators have no way of centrally managing the print queue, because each client has its own print queue.

- Administrators cannot implement advanced printing features, such as printer pools or remote administration.

- Error messages appear only on the computer that originated the job the print device is currently processing.

- All print job processing is performed by the client computer, rather than being partially offloaded to an external print server.

Network-Attached Printer Sharing
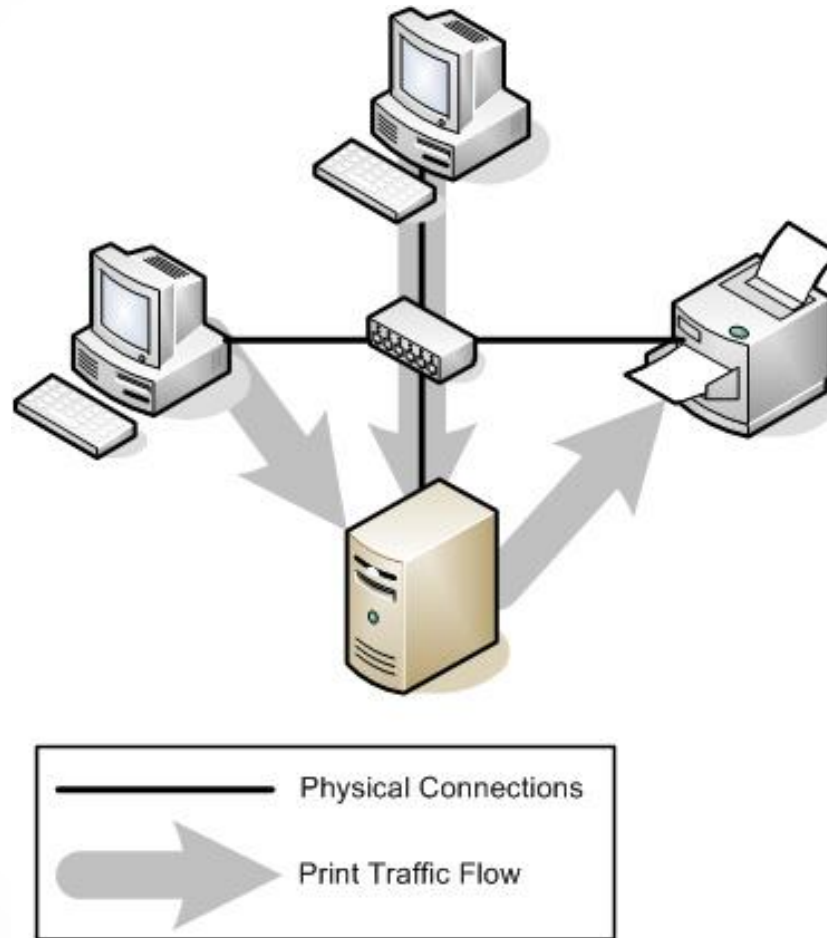
A network-attached print device with a single, shared print server

Advantages to Network-Attached Printer Sharing

- All of the client jobs are stored in a single print queue, so that users and administrators can see a complete list of the jobs waiting to be printed.

- Part of the job rendering burden is shifted to the print server, returning control of the client computer to the user more quickly.

- Administrators can manage all queued jobs from a remote location.

- Print error messages appear on all client computers.

- Administrators can implement printer pools and other advanced printing features.

- Administrators can manage security, auditing, monitoring, and logging functions from a central location.

Sharing a Printer

If a computer is to support heavy printer use, the following hardware upgrades might be needed:

- Additional system memory

- Additional disk space (for queued print jobs)

- Make the computer a dedicated print server

Sharing a Printer

A printer can be shared during the installation or any time after.

To install a printer:

- **USB**: Upon connection and power up, a driver will automatically be installed, unless Windows does not have a driver.

- **Network-attached printers**: An installation program supplied with the device will locate, install, and configure.

Share a Printer
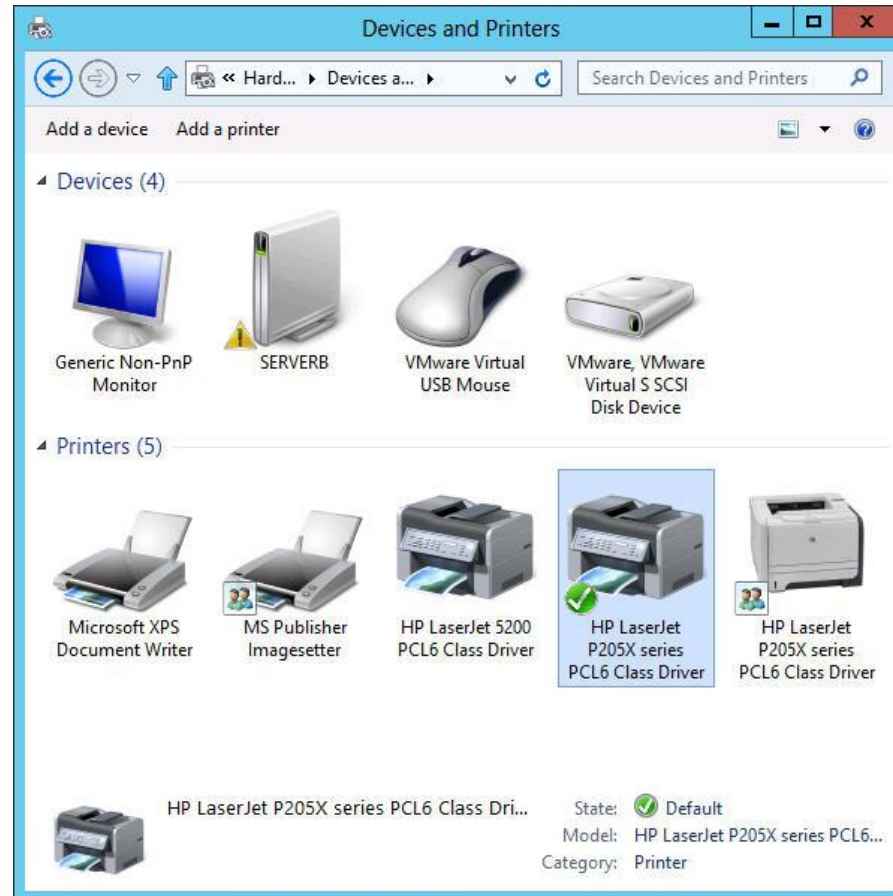
The Devices and Printers window

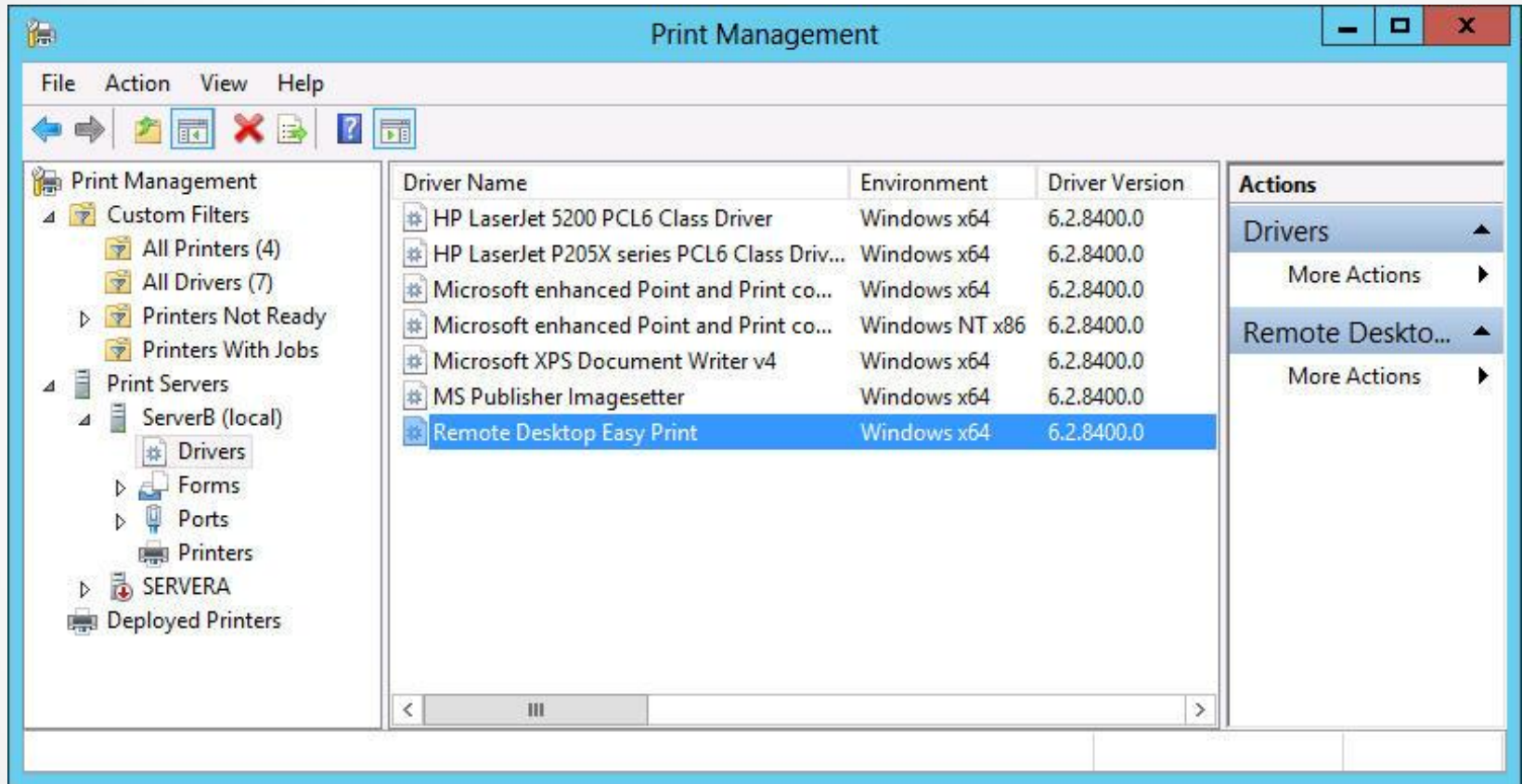# Share a Printer
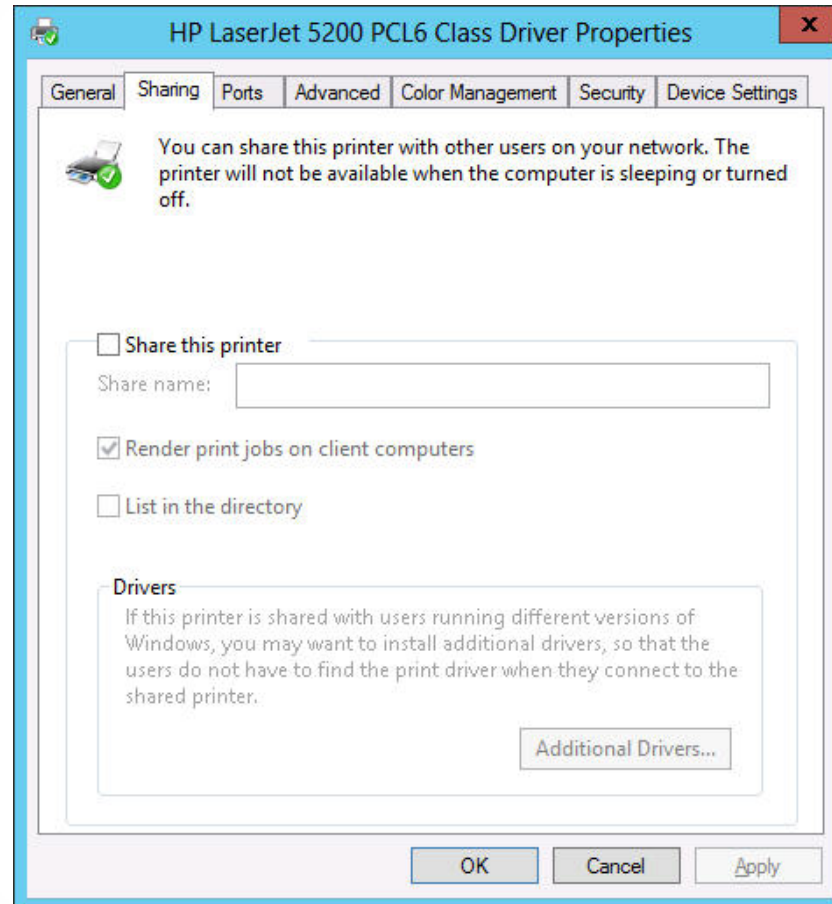
The Sharing tab of a printer's Properties sheet

Managing Printer Drivers

- Point and Print allows a client on a workstation to select a printer from the server, and Windows will automatically install the driver for the client.

- The drivers installed on Windows Server 2012 are generally the same drivers used on the client workstations.

- Using the Additional Drivers dialog box, you can install drivers for client workstations that require different drivers, such as 32-bit versus 64-bit drivers, or drivers for older operating systems.

Remote Access Easy Print

- Enables Remote Desktop clients to print to their local print devices.

- It is a printer driver that is installed on the server, along with the Remote Desktop Session Host role service.

- The driver functions as a redirector.

Remote Access Easy Print

The Remote Desktop Easy Print driver on a Remote
Desktop Services server

Configuring Printer Security

- Like folder shares, clients must have the proper permissions to access a shared printer.

- Much simpler than NTFS permissions:
  - Use the printer.
  - Manage documents submitted to printer.
  - Manage the properties of the printer.

Assign Printer Permissions
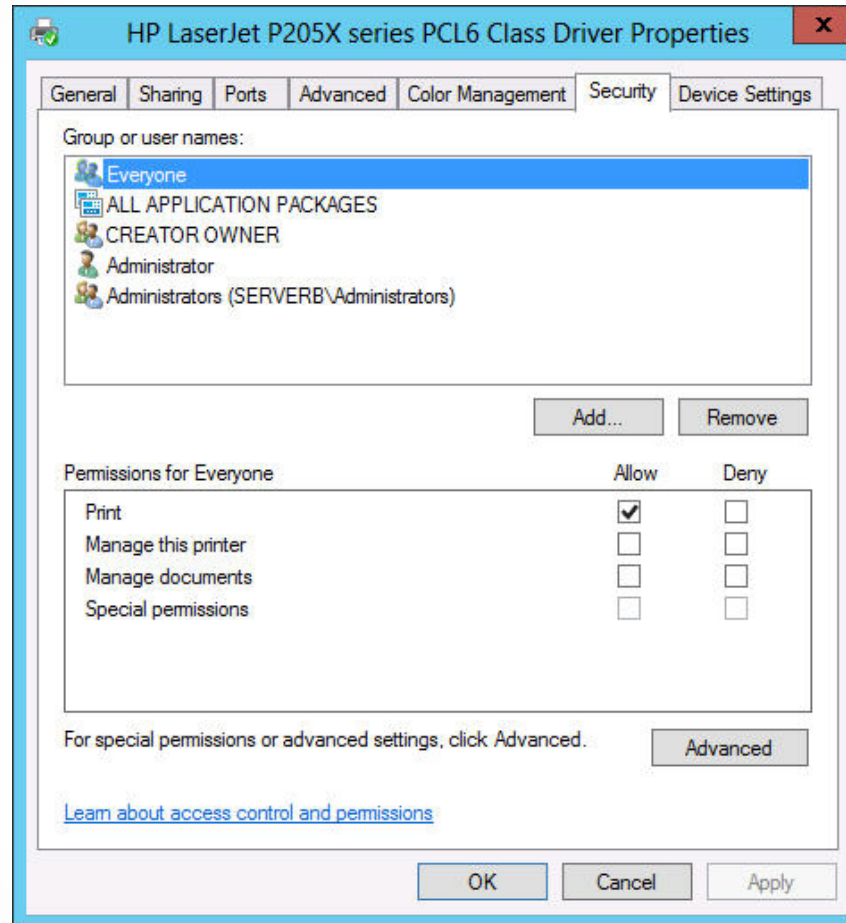
The Security tab of a printer's Properties sheet

Basic Printer Permissions

Permission	Capabilities	Advanced Permissions	Default Assignments
Print	Connect to a printer Print documents Pause, resume, restart, and cancel the user's own documents	Print Read Permissions	Assigned to the Everyone special identity
Manage this printer	Cancel all documents Share a printer Change printer properties Delete a printer Change printer permissions	Print Manage Printers Read Permissions Change Permissions Take Ownership	Assigned to the Administrators group
Manage documents	Pause, resume, restart, and cancel all users' documents Control job settings for all documents	Manage Documents Read Permissions Change Permissions Take Ownership	Assigned to the Creator Owner special identity

Managing Documents

- By default everyone can print and manage their own documents

- Allow Manage Documents permission allows users to manager other user's documents

- Managing refers to:
  - Pausing
  - Resuming
  - Restarting
  - Canceling

Manage Documents
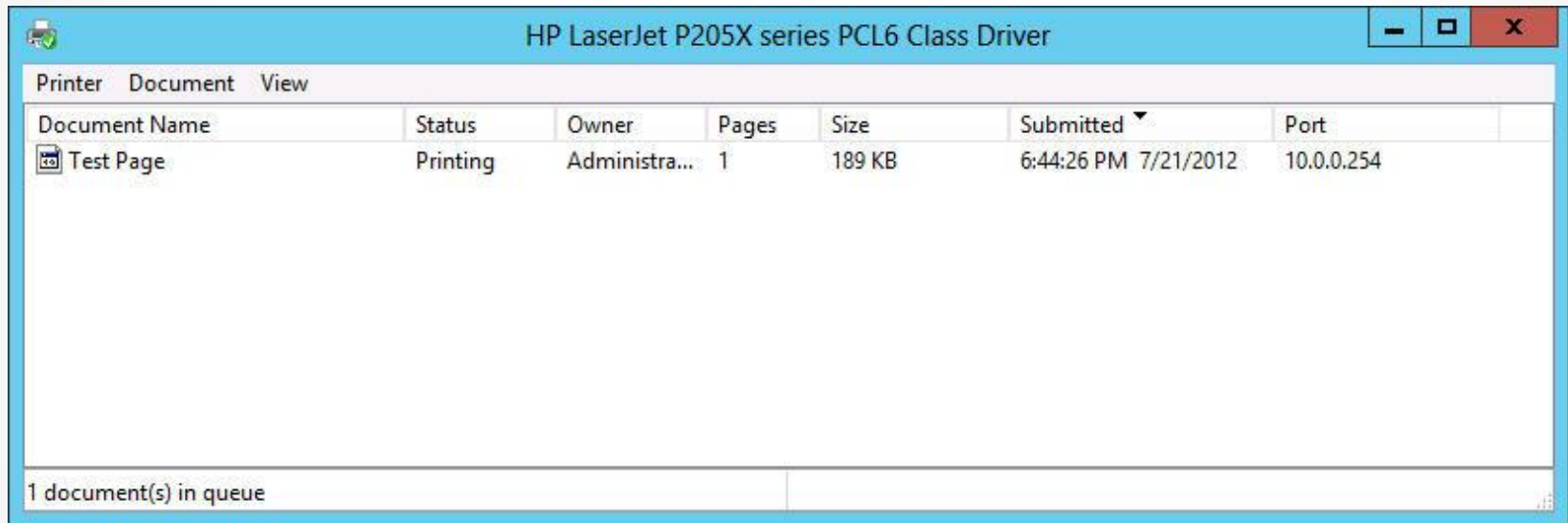
A Windows Server 2012 print queue window

Managing Printers

Typical configuration tasks include:

- **Setting printer priorities:** Multiple printers connected to the same print device to allow certain users' print jobs to print before others.

- **Scheduling printer access:** Multiple printers connected to the same print device with different time schedules for availability.

- **Creating a printer pool:** One printer connected to multiple print devices to increase throughput and provide fault tolerance.

Managing Printers
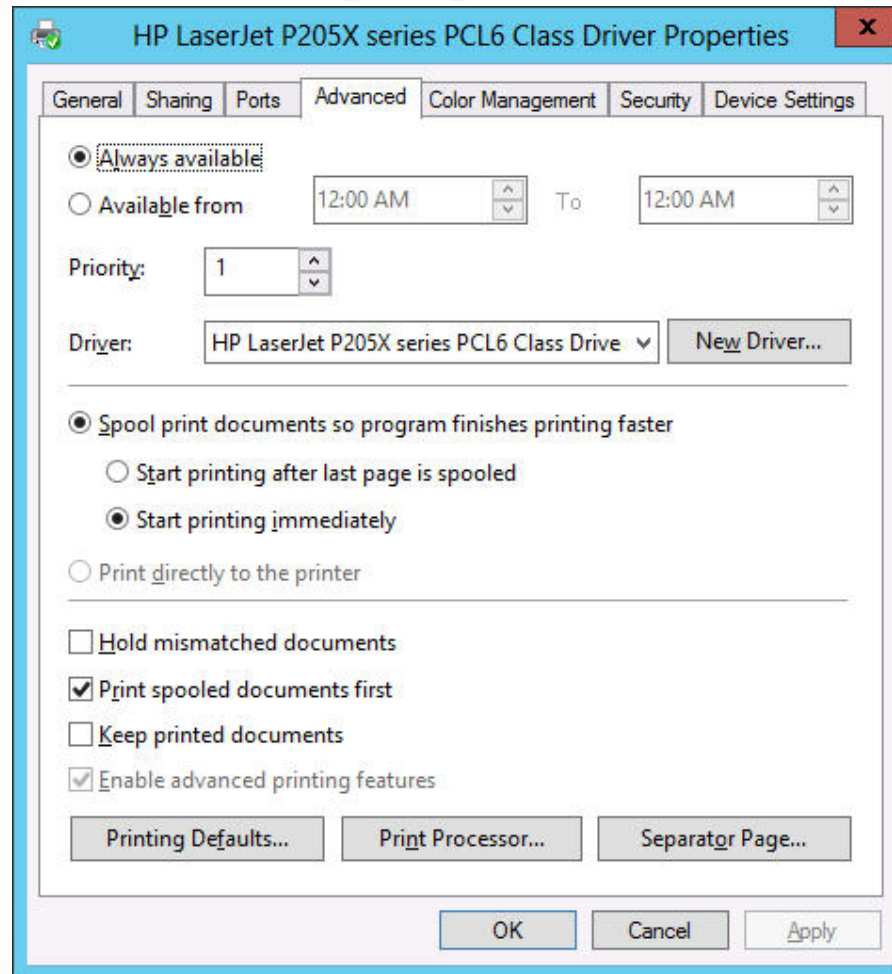
The Advanced tab of a printer's Properties sheet

Using the Print and Document Services Role

Lesson 5: Configuring Print and Document Services

The Print and Document Services Role

- The Windows Server 2012 default installation configuration makes available all printer sharing and management capabilities discussed in the previous sections.

- For administrators involved with enterprise network printing, installing the Print and Document Services role on the computer provides additional tools that are particularly useful.

Print Services Role Services

Role Service	Wizard Pages Added	System Services Installed	Description
Print Server	[None]	Print Spooler (Spooler)	Installs the Print Management console for Microsoft Management Console (MMC), which enables administrators to deploy, monitor, and manage printers throughout the enterprise. This is the only role service that is required when you add the Print Services role.
Distributed Scan Server	[None]	Distributed Scan Server (ScanServer)	Enables the computer to receive documents from network-based scanners and forward them to the appropriate users.
Internet Printing	[None]	World Wide Web Publishing Service (w3svc) IIS Admin Service (iisadmin)	Creates a website that enables users on the Internet to send print jobs to shared Windows printers.
LPD Service	[None]	TCP/IP Print Server (LPDSVC)	Enables UNIX clients running the LPR (line printer remote) program to send their print jobs to Windows printers.

The Print and Document Services Role
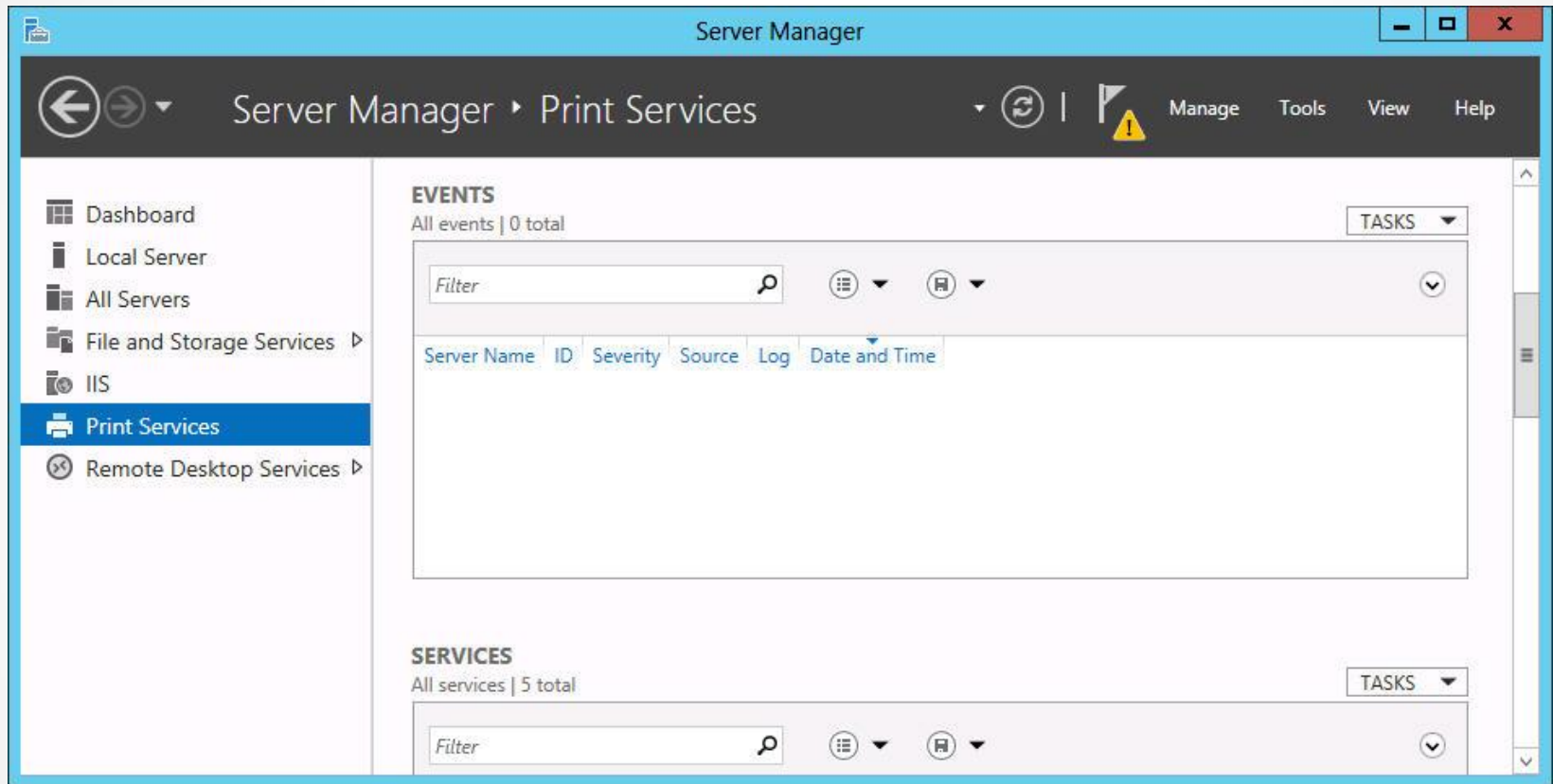
The Print Services node in Server Manager

Using the Print Management Console
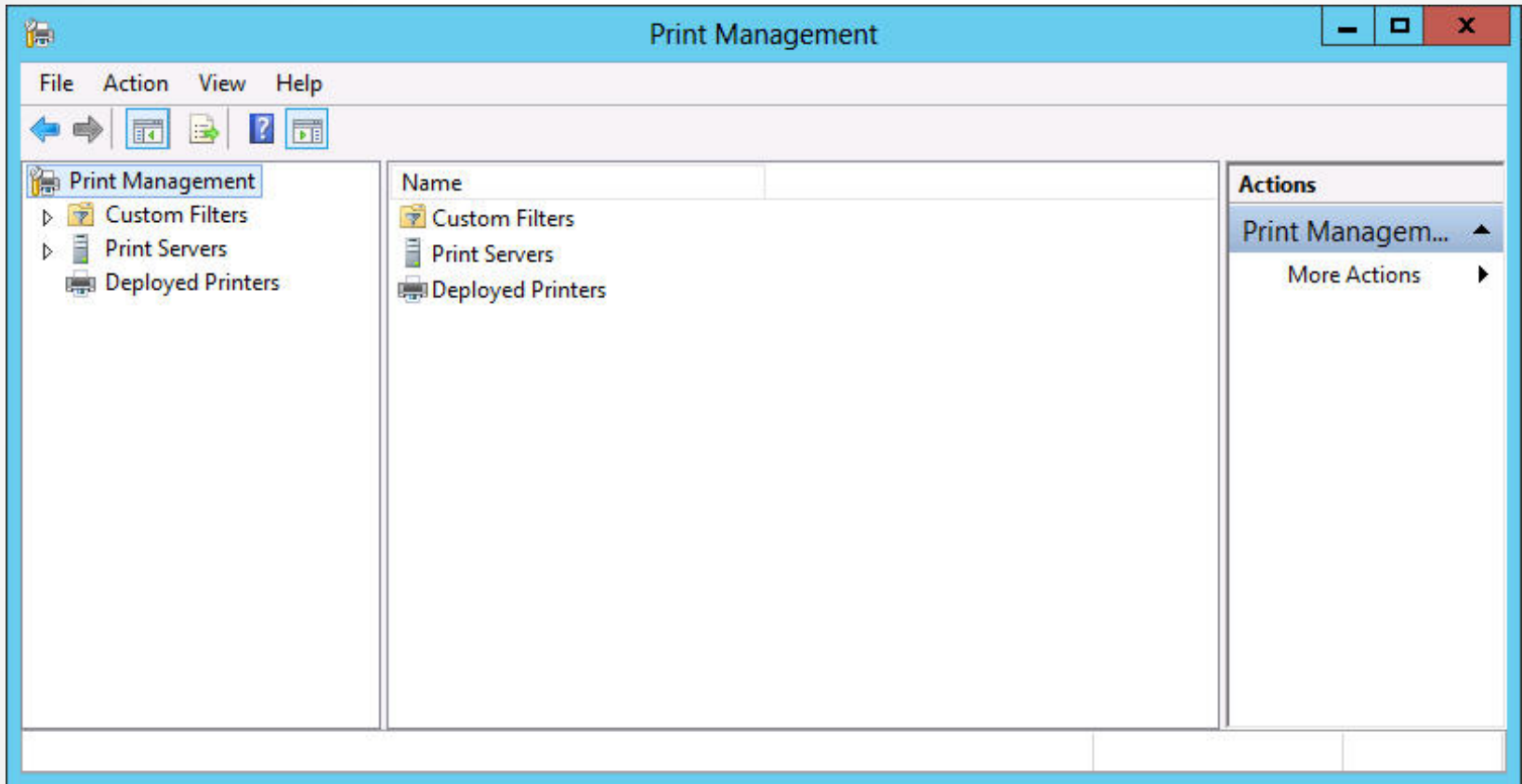
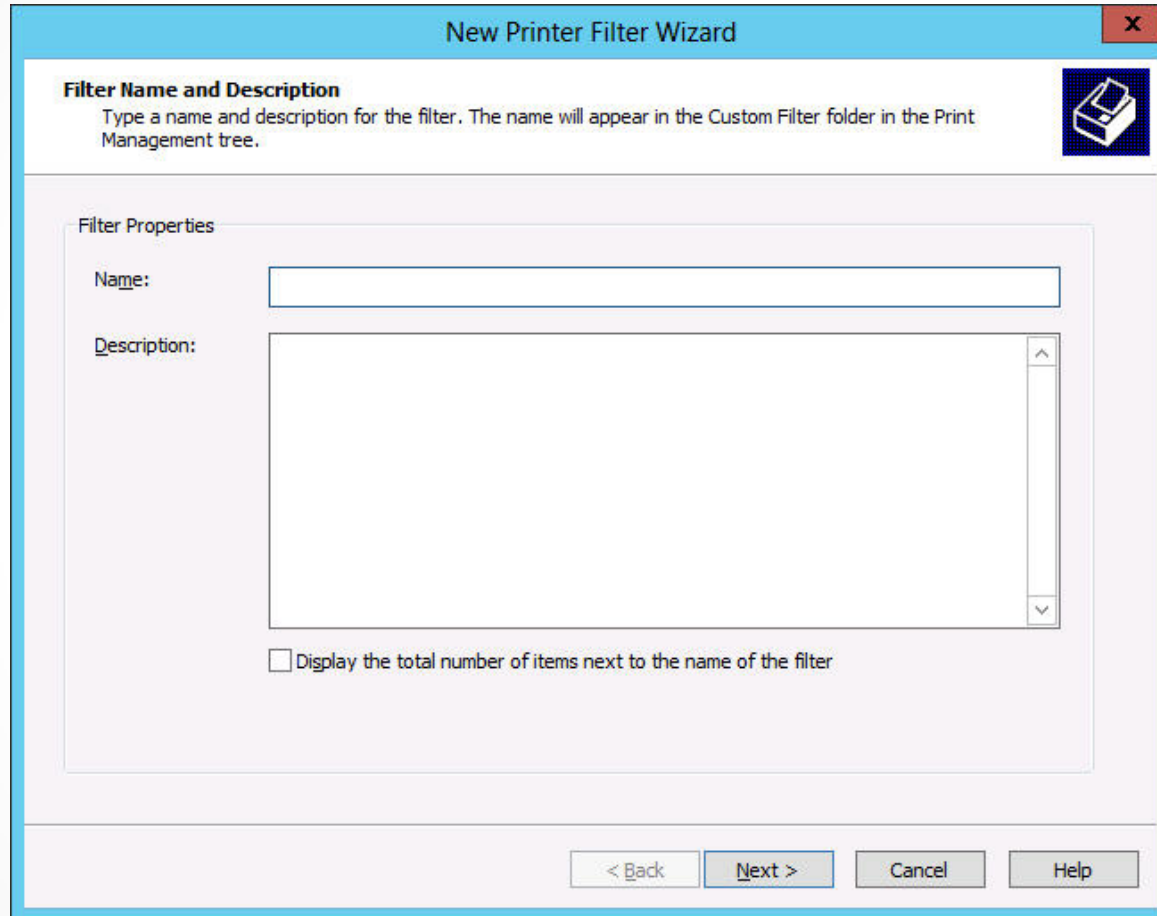The Print Management console

Adding Print Servers
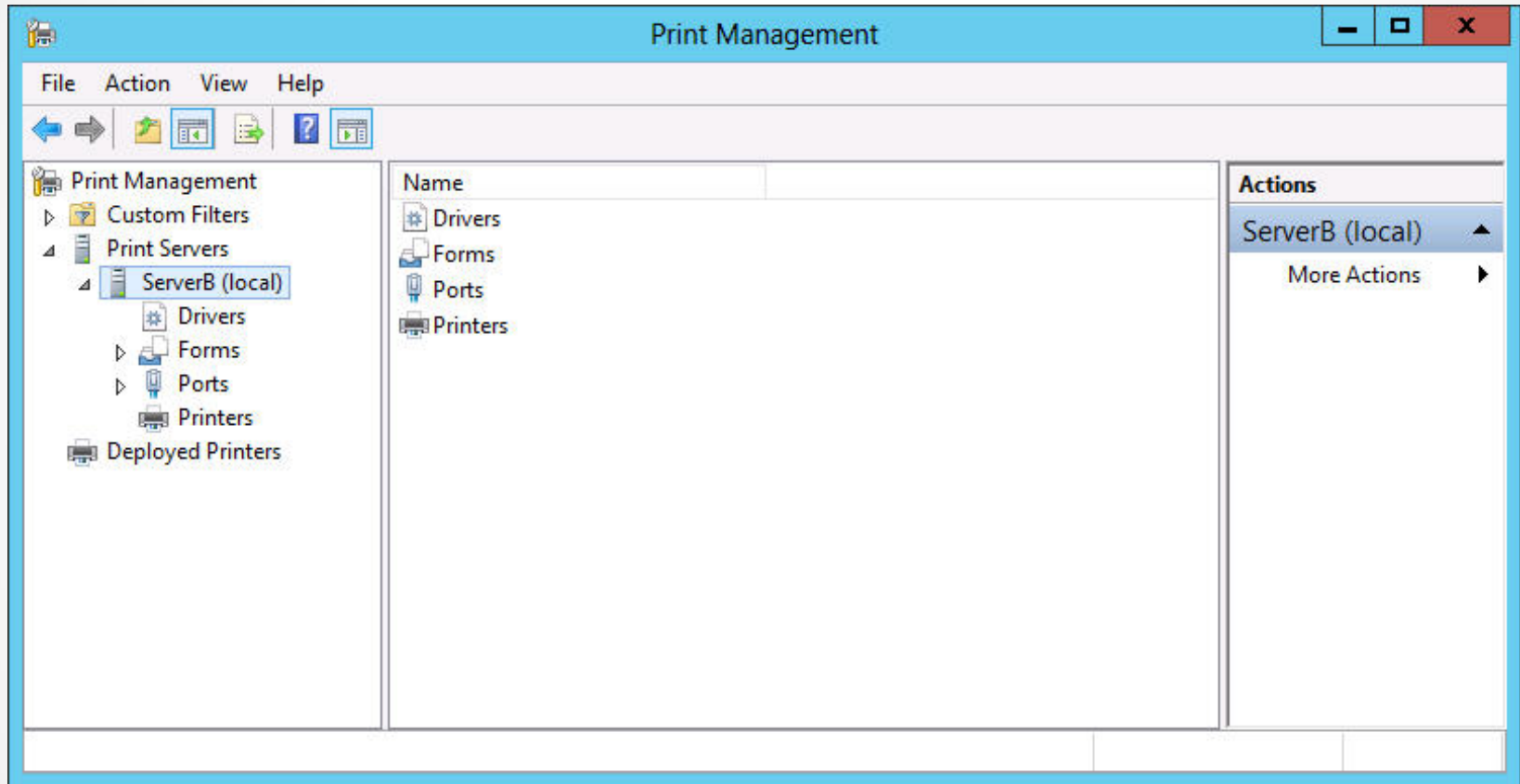
A print server displayed in the Print Management console

Viewing Printers

- On large enterprise networks, administrators must keep track of dozens or hundreds of print devices.

- The Print Management console provides a multitude of ways to view the printing components by applying filters to the complete list of printers.

- There are four default filters (All Printers, All Drivers, Printers Not Ready, and Printers With Jobs) and you can also create custom filters.

Create a Custom Filter

The Filter Name and Description page in the New Printer Filter Wizard

Create a Custom Filter

The Define a Printer Filter page in the New Printer Filter Wizard

Managing Printers and Print Servers
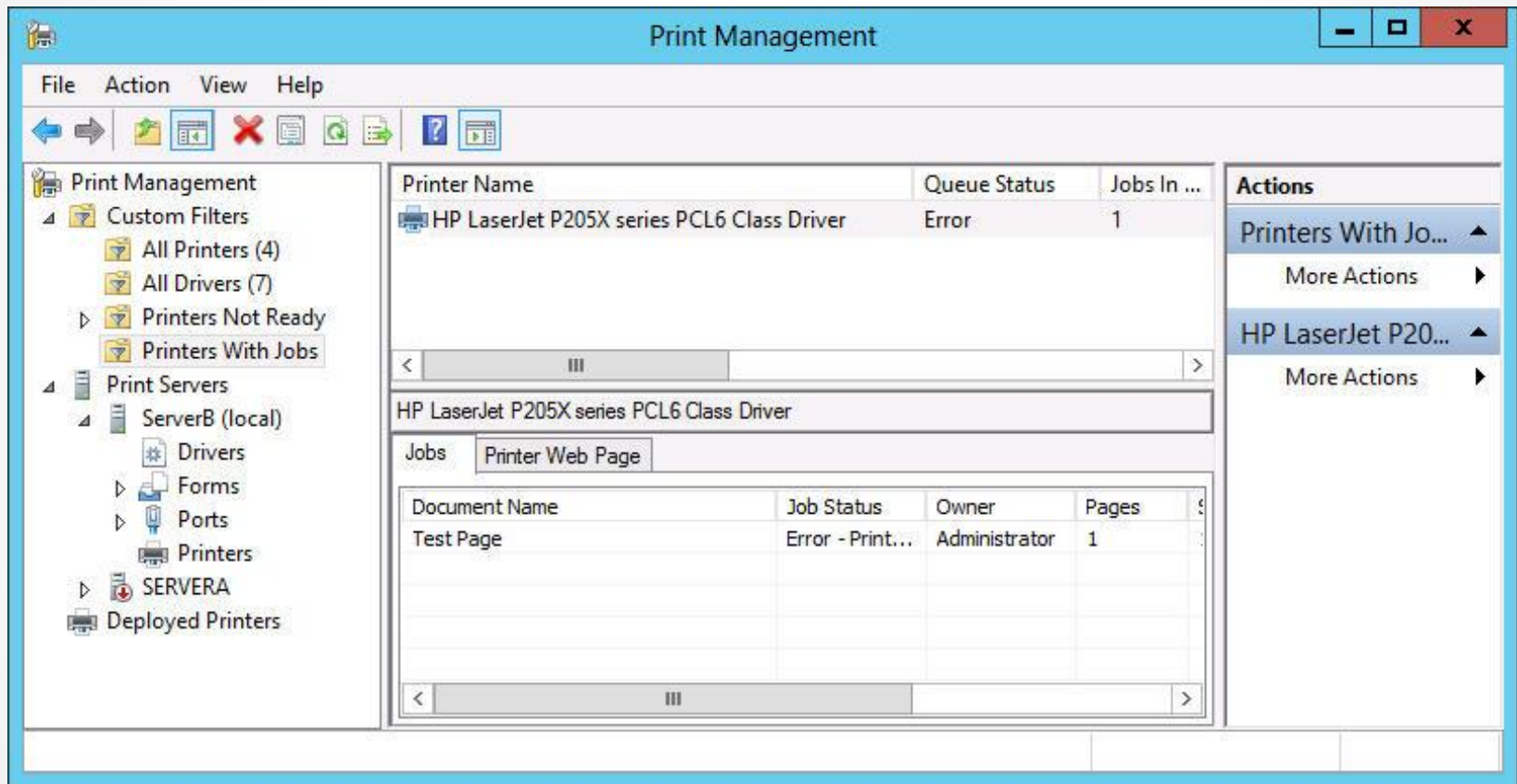
The Print Management console's extended view

Deploying Printers with Group Policy

- AD DS helps simplify the process of deploying printers to large numbers of clients.

- Administrators can search for printers in the AD DS database by name, location, or model.

- You can configure a Group Policy Object (GPO) to deploy a printer and link it to a domain, site, or OU.

Deploy Printers with Group Policy
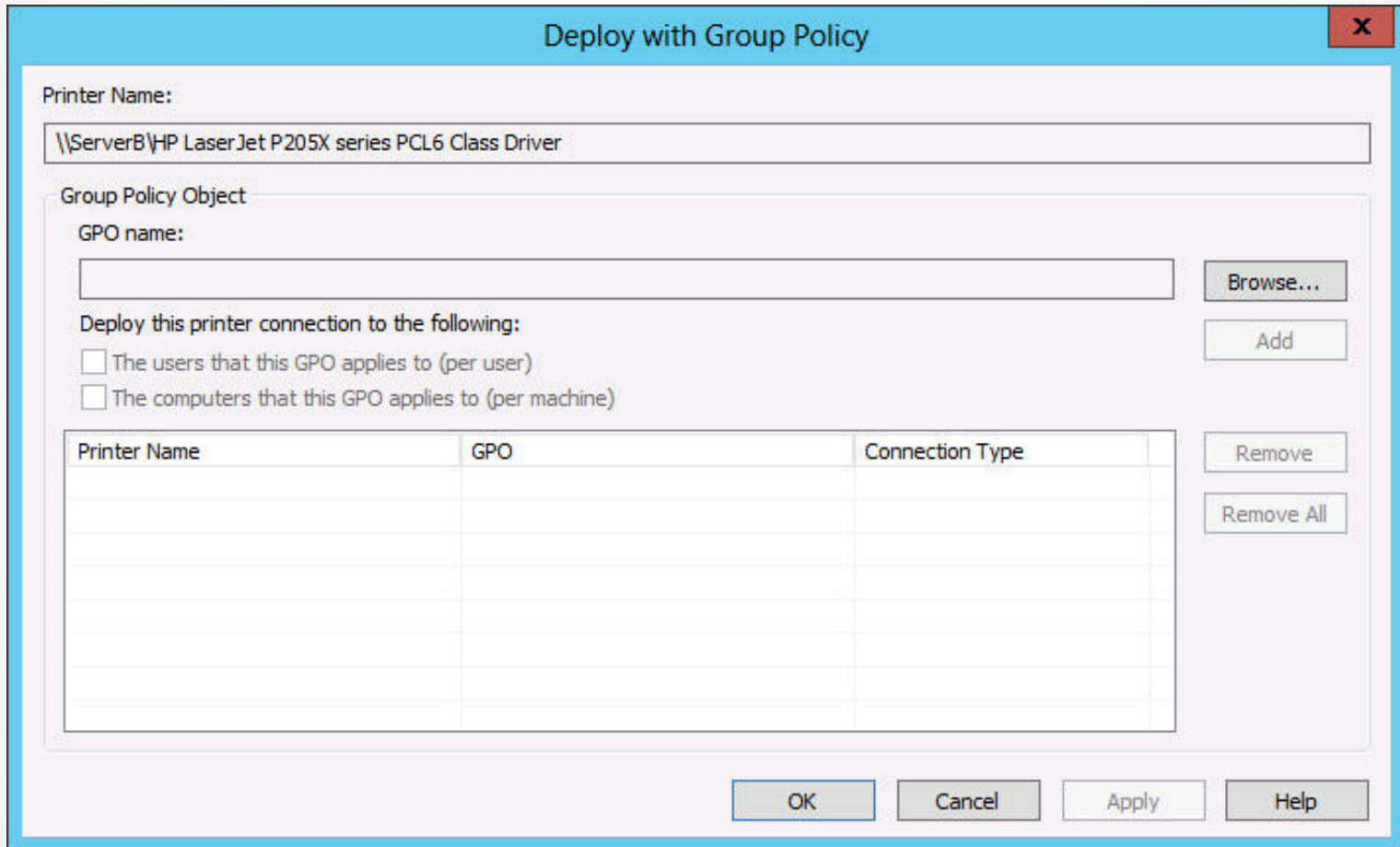
The Deploy with Group Policy dialog box

Deploy Printers with Group Policy
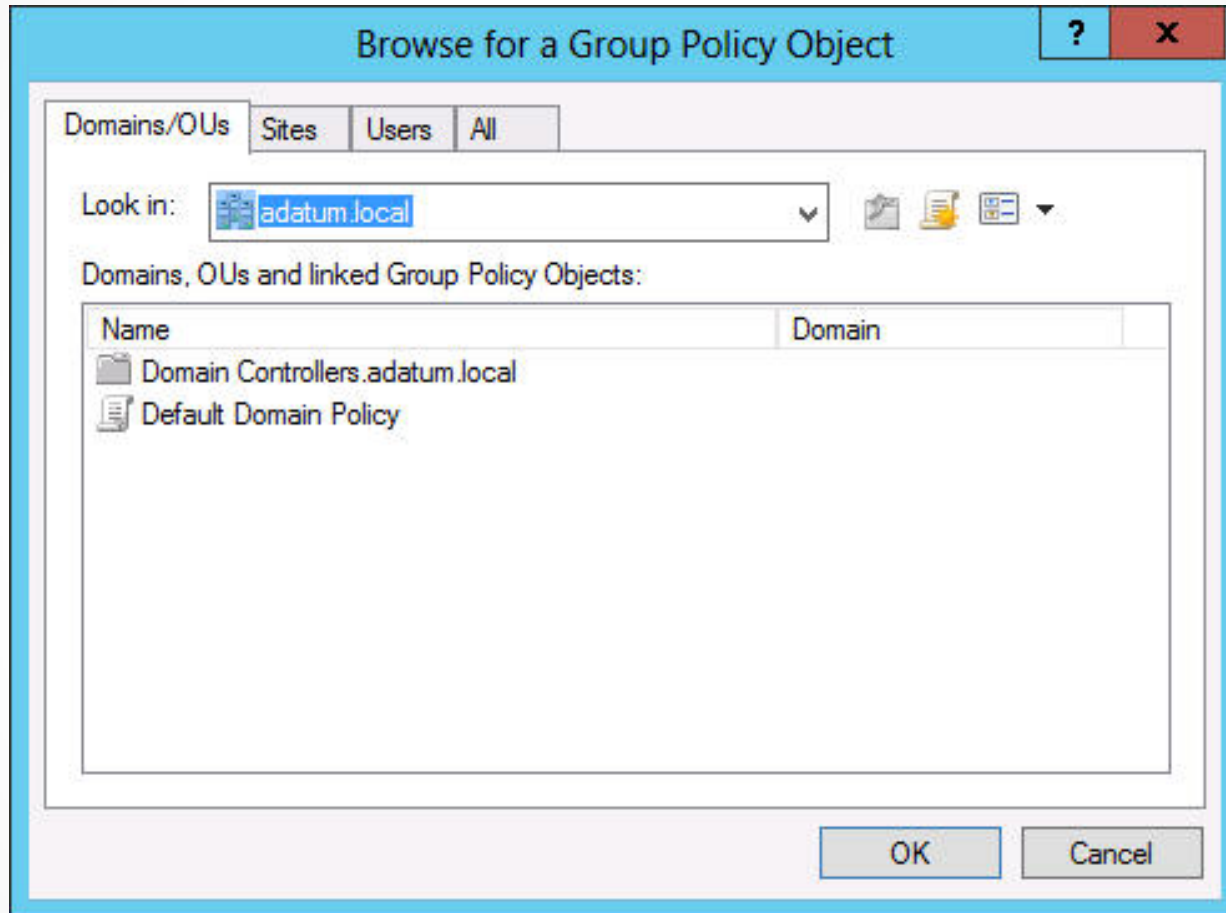
The Browse for a Group Policy Object dialog box

Lesson Summary

- Printing in Microsoft Windows typically involves the following four components: print device, printer, print server, and print driver.

- The printer driver enables you to configure the print job to use the various capabilities of the print device.

- The simplest form of print architecture consists of one print device connected to one computer, known as a locally attached print device. You can share this printer (and the print device) with other users on the same network.

- With network-attached print devices, the administrator's primary deployment decision is which computer will function as the print server.

Lesson Summary

- Remote Desktop Easy Print is a driver that enables Remote Desktop clients running applications on a server to redirect their print jobs back to their local print devices.

- Printer permissions are much simpler than NTFS permissions; they basically dictate whether users are allowed to merely use the printer, manage documents submitted to the printer, or manage the properties of the printer itself.

- The Print Management snap-in for MMC is an administrative tool that consolidates the controls for the printing components throughout the enterprise into a single console.

- To use Active Directory to deploy printers to clients, you must configure the appropriate policies in a Group Policy Object (GPO).

Microsoft®
Official Academic Course

WILEY