

**Test Lab Guide: Demonstrate Windows Server "8" Beta** **Print and Document Services**

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**Abstract**

This paper contains an introduction to Windows Server "8" Beta Printing and step-by-step instructions for extending the Test Lab Guide Base Configuration to demonstrate Printing Services in Windows Server "8" Beta.

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# Introduction

Print and Document Services in Windows Server "8" Beta enables you to share printers on a network and centralize print server and network printer management tasks by using the Print Management Microsoft Management Console (MMC) snap-in. Print Management helps you monitor print queues and receive notifications when print queues stop processing print jobs. It also enables you to migrate print servers and deploy printer connections using Group Policy.

Windows Server "8" Beta introduces several new features that will enhance the overall user and admin experience for Windows Printing. These features include but are not limited to the following:

* At the core of the Windows Server "8" Beta printing experience is a new driver model known as the v4 print driver model. The v4 driver model includes changes to printer sharing known as Enhanced Point and Print, eliminating the need to install cross platform drivers and eliminating the scenario where a Windows Print Server is a driver distribution point.
* Branch Office Direct Printing reduces network bandwidth by printing directly to a print device instead of a server print queue. This feature can be enabled or disabled on a per printer basis and is transparent to the user.
* Administrators can use the new Print Management Windows PowerShell module to manage a printing infrastructure from the command line. Using the power and flexibility of Windows PowerShell allows an administrator to write custom scripts to manage and configure printing without using the Print Management Console.

## In this guide

This paper contains instructions for setting up a test lab based on the Test Lab Guide Base Configuration and deploying Windows 8 Consumer Preview Consumer Preview Print Services using two server computers and one client computer. The resulting Windows 8 Consumer Preview Consumer Preview Printing test lab demonstrates Windows 8 Consumer Preview Consumer Preview Print Services functionality.

Important

The following instructions are for configuring a Windows Server "8" Beta Printing test lab using the minimum number of computers. Individual computers are needed to separate the services provided on the network and to clearly show the desired functionality. This configuration is neither designed to reflect best practices nor does it reflect a desired or recommended configuration for a production network. The configuration, including IP addresses and all other configuration parameters, is designed only to work on a separate test lab network.

Attempting to adapt this Windows Server "8" Beta Printing test lab configuration to a pilot or production deployment can result in configuration or functionality issues. To ensure proper configuration and operation for your pilot or production Windows 8 Consumer Preview Consumer Preview Printing deployment, use the information in the <link to product/technology Design Guide> for planning and design decisions and the <link to product/technology Deployment Guide> for the steps to properly configure the <product/technology> and supporting infrastructure servers.

## Test lab overview

In this test lab, Windows Server "8" Beta Printing is deployed with:

 One computer running Windows Server "8" Beta named DC1 that is configured as an intranet domain controller, Domain Name System (DNS) server, and Dynamic Host Configuration Protocol (DHCP) server.

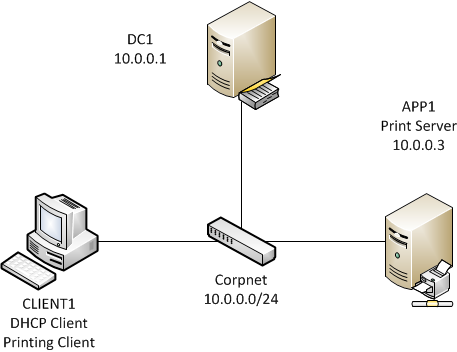
 One intranet member server running Windows Server "8" Beta named APP1 that is configured as a Windows Server "8" Beta Print Server.

 ne roaming member client computer running Windows 8 Consumer Preview named CLIENT1 that is configured as a client.

The Windows Server "8" Beta Printing test lab consists of one subnet that simulates the following:

* An intranet named Corpnet (10.0.0.0/24)

Computers connect using a hub or switch. See the following figure.



The test lab instructions demonstrate the installation and configuration of a Windows Server "8" Beta Print server using Server Manager and the Print Management Console. Printer Sharing is also demonstrated by using a test client to print to a Windows Server "8" Beta Print queue.

## Hardware and software requirements

The following are required components of the test lab:

 The product disc or files for Windows Server "8" Beta.

 The product disc or files for Windows 8 Consumer Preview.

* Computers that meet the minimum hardware requirements for Windows Server "8" Beta and Windows 8 Consumer Preview.

# Steps for Configuring the Windows Server "8" Beta Printing Test Lab

There are four steps to follow when setting up a Windows Server "8" Beta Printing test lab based on the Test Lab Guide Base Configuration.

1. Set up the Base Configuration test lab.

The Windows Server "8" Beta Printing test lab requires the Base Configuration test lab as its starting point.

1. Configure APP1.

APP1 is already a member server computer that is configured with IIS and also acts as a file server. For the Windows Server "8" Beta Printing test lab, APP1 must have have the Print Services role service installed and a print queue created that prints to a NULL port.

1. Configure CLIENT1

Connect to the shared print queue on APP1

1. Demonstrate Windows 8 Consumer Preview Printing using CLIENT1.

Print a test print job and demonstrate Branch Office Direct printing

Note

You must be logged on as a member of the Domain Admins group or a member of the Administrators group on each computer to complete the tasks described in this guide. If you cannot complete a task while you are logged on with an account that is a member of the Administrators group, try performing the task while you are logged on with an account that is a member of the Domain Admins group.

This guide provides steps for configuring the computers of the Windows Server "8" Beta Printing test lab, configuring a Print Server, and demonstrating Windows Server "8" Beta Print Server functionality. The following sections provide details about how to perform these tasks.

## Step 1: Set up the Base Configuration Test Lab

Set up the Base Configuration test lab for the Corpnet subnet using the procedures in the “Steps for Configuring the Corpnet Subnet” section of the Test Lab Guide: Base Configuration. Connect **DC1**, **APP1**, and **CLIENT1** to the Corpnet subnet.

## Step 2: Configure APP1

APP1 configuration for the Windows Server "8" Beta Printing test lab consists of the following procedures:

 Install Print Server role on APP1

* Install and share a printer that prints to a NULL port

The following sections explain these procedures in detail.

### Install the Print Server role and share a print queue on APP1

Install the Print Server role and use the Print Management Console to create and share a print queue using a Type 4 driver.

To install the Print Server role and share a print queue

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| 1. In the **Dashboard** console of Server Manager, under **Configure this local server**, click add **Add roles and features**. 2. Click **Next** three times to get to the Select server roles screen. 3. In the Select server roles dialog, select **Print and Document Services**, click **Add Features** to automatically add the Print and Document Services Tools, and then click **Next**. 4. Click **Next** three time to get to the Select role services screen. 5. Verify that **Print Server** is selected and then click **Next**. 6. Click the box next **to Restart the destination server automatically if required** and then click **Install**. 7. Allow the installation to complete, and then click **Close**. 8. After installation has completed, **Print and Document Services** will appear in the Server Manager navigation pane. 9. Click on Print and Document Services and then click **More** on the notification titled **Configuration required for Print Server APP1**. 10. Click on **Perform additional configuration** in the Task Details window. 11. Expand **Print Servers** and then **APP1** in the Print Management Console. 12. Right-click on Printers and select **Add Printer**. 13. Select **Add a TCP/IP or Web Services Printer by IP address or hostname** and then click **Next**. 14. Change the Type of Device to **TCP/IP Device** and Enter **10.0.0.200** into the Host name box and then click **Next**. 15. Select **Install a new driver** and then click **Next**. 16. Select **Microsoft** as the Manafacturer and then **Microsoft XPS Class Driver** under Printers and then click **Next**. 17. Click **Next** two times to accept the default printer name and share name and install the printer. 18. Click Finish to close the Network Printer Installation Wizard. 19. In the Print Management Console, right click on the Microsoft XPS Class Driver printer and select **Properties**. 20. Click the **Sharing** tab and then click the box next to **List in the directory**, and then click **OK**. |

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| Description: Description: Description: http://upload.wikimedia.org/wikipedia/en/7/7f/Windows_PowerShell_icon.png**PowerShell** |
| The following PowerShell commands perform the same steps:    **Add-WindowsFeature Print-Server**  **Add-WindowsFeature RSAT-Print-Services**  **Add-PrinterPort -name Test -PrinterHostAddress "10.0.0.200"**  **Add-PrinterDriver -name "Microsoft XPS Class Driver"**  **Add-Printer -name "Microsoft XPS Printer" -DriverName "Microsoft XPS Class Driver" -Shared -ShareName "Microsoft XPS Class Driver" -PortName Test -Published** |

## Step 3: Configure CLIENT1

CLIENT1 is already configured to lease an IP Address from the DC1 server and is already a member of the corp.contoso.com domain. CLIENT1 configuration consists of the following procedure:

 Connect to shared printer on APP1

The following sections explain these procedures in detail.

### Connect CLIENT1 to shared printer on APP1

Connect the CLIENT1 computer to the shared printer on APP1 that was created in Step 3.

To connect to the shared printer on APP1

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| 1. On **CLIENT1**, click **PC Settings** on the Start screen. 2. Click on **Devices** and then on **Add a device**. 3. Click on **Microsoft XPS Class Driver on APP1** and the device will install automatically. |

## Step 4: Test/verify Windows 8 Consumer Preview Printing

Use the following procedures to demonstrate Windows 8 Consumer Preview Printing:

 Print a test print job to the APP1 server

* Enable Branch Office Direct Printing and Test Printing

The following sections explain these procedures in detail.

### Print a test print job to the APP1 server

The shared print queue in APP1 is configured to use a NULL port so that any jobs sent to it will not print to a real device and not remain in the server side print queue. Open the print queues on both CLIENT1 and APP1 to observe the print job on both machines and how the data flow differs with Branch Office Direct Printing enabled.

To print a test job to APP1

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| 1. From the **CLIENT1** Start screen, type **Devices** to bring up the Search results. Click **Settings** and then **Devices and Printers**. 2. Double-click on **Microsoft XPS Class Driver on APP1** to open the client-side queue. 3. In Print Management Console on **APP1**, right click on **Microsoft XPS Printer** and select **Open Printer Queue**. 4. Pause the print queue on **APP1** by selecting **Printer** in the queue window and then clicking on **Pause Printing**. 5. From **CLIENT1**, select **Printer** in the queue windows and then select **Properties**. 6. Click the **Print Test Page** button to print a test page to the printer queue on APP1. 7. Observe both the client and server side queues and note the print job is still in both queues. 8. From **APP1**, select **Printer** in the print queue window and then uncheck **Pause Printing** to resume printing. 9. Observe that the print job finishes printing on the server side queue. |

### Enable Brach Office Direct Printing

Enabling Branch Office Direct Printing can be accomplished via the Print Management Console or Windows PowerShell. With BODP enabled, the print job will only go to the client side queue before printing.

To enable and test Branch Office Direct Printing



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| 1. From the Print Management Console on APP1, right click on the Microsoft XPS Class Driver printerand select **Enable Branch Office Direct Printing**. 2. Double-click on **Microsoft XPS Class Driver on APP1** to open the client-side queue. 3. In Print Management Console on **APP1**, right click on **Microsoft XPS Printer** and select **Open Printer Queue**. 4. Pause the print queue on **APP1** by selecting **Printer** in the queue window and then clicking on **Pause Printing**. 5. From **CLIENT1**, select **Printer** in the queue windows and then select **Properties**. 6. Click the **Print Test Page** button to print a test page to the printer queue on APP1. 7. Observe both the client and server side queues and note the print job only displays in the client side queue and there is no notification that a job has printed on the server side queue. 8. From **APP1**, select **Printer** in the print queue window and then uncheck **Pause Printing** to resume printing. 9. Observe that the print job finishes printing on the client side queue. |

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| Description: Description: Description: http://upload.wikimedia.org/wikipedia/en/7/7f/Windows_PowerShell_icon.png**PowerShell** |
| The following PowerShell commands perform the same steps:    **Set-Printer -name "Microsoft XPS Class Driver" -ComputerName APP1 -RenderingMode BranchOffice** |

# Snapshot the Configuration

This completes the Windows Server "8" Beta Printing test lab. To save this configuration so that you can quickly return to a working Print Server configuration from which you can test other Windows Server "8" Beta modular test lab guides (TLGs), TLG extensions, or for your own experimentation and learning, do the following:

1. On all physical computers or virtual machines in the test lab, close all windows and then perform a graceful shutdown.
2. If your lab is based on virtual machines, save a snapshot of each virtual machine and name the snapshots **Windows Server "8" Beta Printing**. If your lab uses physical computers, create disk images to save the Windows 8 Consumer Preview Consumer Preview Printing test lab configuration.

# Additional Resources

For a list of additional Microsoft TLGs, see [Test Lab Guides](http://go.microsoft.com/fwlink/?LinkID=202817) in the TechNet Wiki.

To provide the authors of this guide with feedback or suggestions for improvement, send an email message to [tlgfb@microsoft.com](mailto:tlgfb@microsoft.com).