Chapter 7
Working with Virtual Networks
September 2015

The activities in this chapter are written to be performed using either VMware Server or Hyper-V. Since VMware Server is no longer a supported project, we recommend doing the Hyper-V activities as described in this section.

Activity 7-1: Creating Child Virtual Machines in VMware Server

Perform the steps of Activity 7-1 as written.

Activity 7-2: Running Sysprep on Virtual Machines

When using Hyper-V, this activity will be performed as part of Activity 7-4. Some of the steps in using sysprep have changed with Windows Server 2008 R2, so you should perform this activity using the following notes:

In step 3, when using Windows Server 2008 R2, you need to manually navigate to the **C:\Windows\System32\Sysprep** folder and then double-click the sysprep.exe program.

You can skip step 6 as the Product Key window is no longer displayed and the system goes directly to the license terms windows. The product key will be activated in the revised step 10 (see below).

You can skip step 8 as Windows Server 2008 R2 goes directly from the license window to the user password. The computer name will be entered by performing the modified step 10 (see below).

Perform the following process in place of the existing step 10 to enter computer name and activate the license.

10. Click **Start**, right-click **Computer**, and click **Properties** to open the System window. Click the **Change Settings** link to open the System Properties window. Click the **Change** button and then enter **Win2008Child1** in the computer name field and click **OK** twice. Click **Close** and then click **Restart Later** to return to the System window. Click the **Activate Windows now** link and then click the **Activate Windows online now** option to start the activation process. When the activation completes, click **Close** to return to the System window. Close the System window and power off the virtual machine.

Activity 7-3: Viewing Virtual Network Adapters in VMware Server

Perform the steps of Activity 7-3 as written.

Activity 7-4: Creating Child Virtual Machines in Hyper-V

Perform the steps of Activity 7-4 as written with the following notes:

In step 3, select the External Network Adapter created in Activity 6-3.

In step 5 it is no longer necessary to verify that the **Start the virtual machine after it is created** option is not selected as it has been removed with Windows Server 2008 R2.

In step 13, follow the revised steps as shown below when performing Activity 7-2.

Some of the steps in using sysprep have changed with Windows Server 2008 R2, so you should perform this activity using the following notes:

In step 3, when using Windows Server 2008 R2, you need to manually navigate to the **C:\Windows\System32\Sysprep** folder and then double-click the sysprep.exe program.

You can skip step 6 as the Product Key window is no longer displayed and the system goes directly to the license terms windows. The product key will be activated in the revised step 10 (see below).

You can skip step 8 as Windows Server 2008 R2 goes directly from the license window to the user password. The computer name will be entered by performing the modified step 10 (see below).

Perform the following process in place of the existing step 10 to enter computer name and activate the license.

10. Click **Start**, right-click **Computer**, and click **Properties** to open the System window. Click the **Change Settings** link to open the System Properties window. Click the **Change** button and then enter **Win2008Child1** in the computer name field and click **OK** twice. Click **Close** and then click **Restart Later** to return to the System window. Click the **Activate Windows now** link and then click the **Activate Windows online now** option to start the activation process. When the activation completes, click **Close** to return to the System window. Close the System window and power off the virtual machine.

Activity 7-5: Viewing Virtual Network Adapters in Hyper-V

Perform the steps of Activity 7-5 as written with the following notes:

In step 5 and step 9, change "Click the **Manage network connections**" to **"**Click the **Change adapter settings** option.

Activity 7-6: Adding a Virtual Switch in VMware Server

Perform the steps of Activity 7-6 as written.

Activity 7-7: Adding a Virtual Switch in Hyper-V

Perform the steps of Activity 7-7 as written except for the following changes:

In step 7, change **Manage network connections** with **Change adapter settings**.

Activity 7-8: Configuring DHCP in VMware Server

Perform the steps of Activity 7-8 as written.

Activity 7-9: Configuring DHCP in VMware Server

Perform the steps of Activity 7-9 as written.

Activity 7-10: Configuring DHCP in VMware Server

Perform the steps of Activity 7-10 as written.

Activity 7-11: Configuring DHCP in VMware Server

Perform the steps of Activity 7-11 as written.

Activity 7-12: Configuring NAT Settings in Hyper-V

Perform the steps of Activity 7-12 as written except for the following changes:

In step 2, change **Manage network connections** with **Change adapter settings**.

In step 3, right-click the adapter with the description "Internet access" in the Connectivity column.

Perform the following step prior to proceeding to step 6:

Click the down arrow to the right of the Home networking connection field and select the Local Area Connection for the Internal NAT Network you created in activity 7-7.

Activity 7-13: Creating a Backbone Network in Hyper-V

Perform the steps of Activity 7-13 as written except for the following changes:

In step 9, change **Manage network connections** with **Change adapter settings**.

In step 10, replace **VI Web Access console** with **Hyper-V Manager**.

Activity 7-14: Configuring IP Addresses for the Backbone Network

Perform the steps of Activity 7-14 as written except for the following changes:

In step 2, change **Manage network connections** with **Change adapter settings**.

In step 4, configure the Default Gateway with IP address 172.20.0.10. This is necessary to make it a Private network in step 11.

Replace step 11 with the following instructions:

Your next task is to test communication on the backbone network using the PING command. By default, Windows firewall blocks PING packets, and in order to use the Ping command you will first need to enable PING requests. This can be done from an administrative mode command prompt. To enable PINGs on your host computer, click **Start**, right-click **Command Prompt**, and then click **Run as administrator** to open a command prompt window with administrative rights. Enter the command: **netsh firewall enable icmpsetting 8 enable** (You will get a message telling you to use the *netsh advfirewall* command, however, the *advfirewall* command does not support the *icmpsetting* option.)
Repeat this process on Server 2008 Child1 and Server 2008 Child 2 virtual machines.

NOTE: *Now that you can also enable PING packets from the GUI by performing the following steps on each Windows Server 2008 system.*

1. Right-click **Network** and click **Properties**.
2. Click **Windows Firewall** and then click **Advanced Settings**.
3. From the left pane, click **Inbound Rules.**
4. In the right pane, find all rules titled **File and Printer Sharing (Echo Request - ICMPv4-In)**.
5. Right-click each rule and choose **Enable Rule**.