Chapter 6
Working with Microsoft Hyper-V

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The activities in this chapter and the rest of the book are based on student computers being able to run Windows Server 2008R2. While the latest version of Windows Server are Windows Server 2012 and 2016, the Windows Server 2008 R2 product is still available by using the following link and following the procedure outlined in the first chapter of this document.

If Windows Server 2012 or 2016 is used, you can create either a first or second generation virtual machine. A generation one virtual machine should be chosen so it matches the settings in this book. Also note new disk and settings file formats can be used, vmcx and vhdx.

Activity 6-1: Installing the Hyper-V Server Role

Time Required: 15 minutes

Objectives: Install the Hyper-V server role on Windows Server 2008 R2.

Requirements: Windows Server 2008 R2 Enterprise version installed.

Description: In this activity you will select and install Hyper-V as a server role on your Windows Server 2008 R2 system.

1. If necessary, boot your computer to the Windows Server 2008 R2 system and log on using your assigned administrative user name and password.
2. If necessary, close the Initial Configuration Tasks window
3. Click Start, point to Administrative Tools, and click Server Manager.
4. Click the Roles option in the left pane, and then click the Add Roles link from the right pane to start the Add Roles Wizard. Click Next.
5. From Roles list, click the Hyper-V check box and then click Next to display the Hyper-V window containing information about installing and configuring Hyper-V.
6. Click Next to display the Confirm Installation Selections window and then click Install to begin the installation process.
7. After the installation process is complete, the Installation Results window will be displayed informing you that you must restart the server to finish the installation process. Click Close. When prompted to restart, click Yes.
8. After your computer restarts, log on with your administrative user name and password to display the Information Results windows with the Installation succeeded message. Record and messages on the line below and then click Close to return to the Server Manager window.
9. Close the Server Manager window and stay logged on for the next activity.

Activity 6-2: Creating a Windows Server 2008 Virtual Machine

Perform the steps of Activity 6-2 as written.

Activity 6-3: Setting Global Hyper-V Options

Perform the steps in activity 6-3 as written with the following notes:

In step 2, note that with Windows Server 2008 R2, Hyper-V now includes a new option called NUMA Spanning .

Activity 6-4: Working with Virtual Machine Settings

Perform the steps of Activity 6-4 as written.

Activity 6-5: Installing Windows Server 2008 R2 as a Guest OS

Time Required: 30 minutes

Objectives: Install Windows Server 2008 on a Hyper-V virtual Machine.

Requirements: Completion of Activity 6-2; the Windows Server 2008 R2 DVD or ISO image file (optionally a product key)

Description: You need to be able to run multiple servers on the Hyper-V platform. In this activity you are test the system by installing a second Windows Server 2008 system using Hyper-V.

1. If necessary, log on to the Windows Server 2008 system and then open Hyper-V Manager.

2. Click on the host computer in the left pane, and click the **Windows Server 2008** virtual machine in the Virtual Machines pane.

3. If you're installing from a DVD, insert the Windows Server 2008 R2 DVD in the host computer DVD-ROM drive. If you are using an ISO image file, confirm the path to the Windows Server 2008 R2 image file.

4. In the Actions pane under Windows Server 2008 heading, click the **Settings…** link.

5. In the left hand Hardware pane, click the **DVD Drive** option. If you are using a DVD drive, click the **Physical CD/DVD drive** option button and select the drive letter for the host computer's DVD-ROM drive containing the Windows Server 2008 DVD. If you are using an ISO image file, click to select the **Image file** option and the use the **Browse** button to navigate to the appropriate ISO image file.

6. Click **OK** to close the Settings dialog box. In the Actions pane, under Windows Server 2008, click the Start link to boot your Windows Server 2008 virtual machine.

7. From the right-pane, click the **Connect…** option under Windows Server 2008 to open a console for your Windows Server 2008 virtual machine.

8. From the Install Windows window, verify language, time, and keyboard settings and then click Next.

9. Click the **Install now** button to display the Select the operating system you want to install window. Click the **Windows Server 2008 R2 Enterprise (Full Installation)** option and then click **Next**. (Make sure you don't select the Sever Core version as this will not install the Graphical User Interface.)

10. Review the license terms, click **I accept the license terms** check box, and then click Next.

11. In the Which type of Installation do you want? window, click **Custom (advanced)** option to continue to the next window.

12. In the Where do you want to Install Window? window, verify that **Disk 0 Unallocated Space** is selected. It should have a total size of 127 GB from the virtual disk you created in Activity 6-2. Click **Next** to begin the installation process. This typically takes about 15 minutes, with at least one restart.

13. When the installation is complete you will be asked to change password before logging in for the first time. Click **OK** to set the Administrator password. Enter the password in both the New password and Confirm password fields and click the **blue arrow**. (Your password must be at least 8 characters long and contain a combination of numbers and letters.). Click OK to confirm the password change.

14. Leave your Windows Server 2008 virtual machine logged on for the next activity.

Activity 6-6: Installing Windows Integration Services

Perform the steps of Activity 6-6 as written with the following notes:

In step 3, click the **Action** option from the menu line shown at the top of the Virtual Machine Connection window.

Activity 6-7: Adding and Removing Virtual Machines

Perform the steps of Activity 6-7 as written with the following notes:

In step 8, hold down the Shift key while pressing **Delete** to permanently delete the hard disk file. After completing the deletion, close Windows Explorer.

In step 11, the option name has changed to **Move or restore the virtual machine (use existing unique ID)**.

In step 12, after the import has completed, click **Close** to return to the Hyper-V Manger window.

Activity 6-8: Creating and Restoring Snapshots

Perform the steps of Activity 6-8 as written with the following notes:

In step 4, click on the Windows Server 2008 snapshot taken in step 3 in order to display the snapshot options.

Activity 6-9: Adding a Virtual Hard Disk

Perform the steps of Activity 6-9 as written:

Activity 6-10: Creating a Child Virtual Machine with a Differencing Disk

Perform the steps of Activity 6-10 as written with the following notes:

After completing this activity, students may wish to make changes to the desktop on the Child and notice that those changes do not appear on the parent virtual machine's desktop and vice-versa. Performing this process helps to illustrate how the changes made to the child and parent machines are tracked separately using the difference disks.

Activity 6-11: Compacting a Virtual Hard Disk

Perform the steps of Activity 6-11 as written.

Activity 6-12: Working with Virtual Networks

Activity 6-12 will work as written, but you can gain some additional experience after completing the activity by changing the Windows Server 2008 Child virtual machine back to use the External Network Adapter and verifying that Internet Explorer will then connect to the Microsoft.com Web site.