Chapter 9
Enhancing Virtual Security and Performance

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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, all activity notes in this chapter pertain to using Hyper-V. The activities in this chapter can be divided into three major sections; Security, Virtual Performance, and System Performance. The Security section consists of only one activity, Using Roles in VMware Server, which will work as written. The activities in the Virtual Performance section are based on using the MAP tool and require a number of changes. The last section is based on using the Windows Performance Monitor tool and require little or no modifications.

Activity 9-1: Using Roles in VMware Server

Perform the steps of Activity 9-1 as written.

Activity 9-2 through 9-4: Introduction to Virtual Performance

The activities in this section are based on using the Microsoft Assessment and Planning tool (MAP). Installing the MAP tool has become more complex than when the book was written. This tool has changed significantly since the book was written, making the activities obsolete. You may wish to skip activities 9-2 through 9-4 if you have limited class time. Covering Virtual Machine Manager in chapter 10 is more directly related to managing virtualization.

In order to download the files in this chapter you will need to enable the download option on Internet Explorer by performing the following steps:

a) Start Internet Explorer
b) Go to Tools menu
c) Select Internet Options
d) Go to Security tab
e) Select Internet zone
f) Click on "Custom level…"
g) Under Downloads category, enable the option "File download"
h) Under Miscellaneous category, select Prompt (recommended) for the option "Launching applications and unsafe files"
i) Under Miscellaneous category, select Prompt (recommended) for the option "Launching programs and files in an IFRAME"
j) Validate the changes by clicking on OK
k) Leave the Internet Options

Prior to performing activities 9-2 through 9-4, you will need to use Server Manager to add and update the .NET Framework 3.5 on the host computer by performing the steps listed below:

1. Open Server Manager
2. Under the Server Manager right-hand pane, click to **Features**
3. Click the **Add Features** link
4. Click to select the **NET Framework 3.5.1** feature
5. Click Install with default settings.
6. After Installation is complete, click **Close** and close Server Manager.
7. Use IE to go to the Microsoft Download center http://microsoft.com/download. Enter NET Framework 3.5 SP1 In the search box and click the search icon.
8. Download NET Framework 3.5 SP1 and install it on your server.

Activity 9-2: Installing the MAP Tool

Perform the steps of Activity 9-2 as written except for the following changes:

In step 3, click on the **Download now!** link and then click **Save** to save the file on the Desktop.

In step 5, use the links given in the message box to download and install the missing Microsoft .NET Framework 4.0 Full Profile and then click the link to install Update 4.0.2 for Microsoft .NET Framework 4.

Activity 9-3: Capturing Data with the MAP Tool

Time Required: 15 minutes

Objective: Capture data with the MAP tool

Requirements: Completion of activity 7-14. After completing this activity you should have two virtual servers named Windows Server 2008 Child 1 and Windows Server 2008 Child 2 connected to a backbone network along with the host computer. Each machine on the backbone network should have a manually assigned IP address as described in activity 7-14.

Description: The network administrator at Superior Technical College want you to map the performance of the virtual servers to help determine how to balance applications between the servers. In this activity you will learn how to use the MAP tool to capture performance metrics from the virtual machines.

1. If necessary log on to your host computer and use Hyper-V Manager to start both virtual machines.
2. On the host computer click **Start**, **All Programs**, and then launch the **Microsoft Assessment and Planning Toolkit**.
3. If requested, click the **Create and Inventory database**, enter **STC Virtual Servers** in the Name field and then click **OK** to create the SQL database.
4. The left-hand pane contains a number of tracking options. In the left-hand pane, click the **Server** option and record the scenarios below:
5. Click the **Collect inventory data in** the Windows Server 2008 R2 box.
6. Click the **Windows computers** check box and then click **Next**.
7. Remove the check mark from **Use Active Directory Domain Services (AD DS)** and then click to select the **Scan an IP address range** check box and click **Next**.
8. Enter **172.20.0.10** in the Starting Address field and **172.20.0.12** in the Ending Address field and then click **Next**.
9. Click **Create** to display the Account Entry window.
10. Enter the administrative user name and password used on your virtual server and click **Save**. If you use different passwords on each server, repeat steps 9 and 10 for each password. After entering all credentials, click **Next** to display the Summary window.
11. Verify your settings and then click **Finish** to start the discovery process. When the discovery process is complete, click **Close** to display your results.

Activity 9-4: Creating a Server Consolidation and Virtualization report

Time Required: 60 minutes

Objective: Use the MAP tool to determine resource

Requirements: Completion of activity 9-3.

Description: The network administrator at Superior Technical College wants you to gather data on two physical server to help determine the .

1. If necessary log on to your host computer and use Hyper-V Manager to start both virtual machines.
2. On the host computer click **Start**, **All Programs**, and then launch the **Microsoft Assessment and Planning Toolkit**.
3. Click **Server Virtualization** in the left-hand pane.
4. In the Sever Consolidation box, click on the **Collect performance data** link.
5. Click to select an end time about 30 minutes from the current time (normally you would want to run this for 8-12 hours).
6. Click **Next** to display the Choose Computers window. Verify that the **Choose the computer from a list on the next step of the wizard** is selected and then click **Next**.
7. Click to select all computers on the Computer List window and then click **Next**.
8. Verify the accounts on the All Computers Credentials window and then click **Next**.
9. Click **Next** to confirm the Credentials Order window.
10. Click **Finish** to begin collecting data.
11. After the data collection process is complete - approximately 60 minutes - click **Close** to return to the MAP Toolkit window.
12. Click the **Run the Server Consolidation Wizard** link.
13. Click the Windows Server 2008 R2 Hyper-V option and then click **Next**.
14. Click **Sample host** and then click **Next** to display the Utilization Settings.
15. Click **Next** to accept the default (100%) utilization settings.
16. Verify that the **Choose the computers from a list on the next step of the wizard** is selected and then click **Next**.
17. Click to place a check next to your host computer name and then click **Next**.
18. Verify the system information and then click **Finish** and click **Close** to display the consolidation report.
19. Close the MAP Toolkit window.
20. You may stay logged in to your host for the next activity.

Activity 9-5: Adding Counters to Performance Monitor

Perform the steps of Activity 9-5 as written.

Activity 9-6: Creating and Running Data Collector Sets

Perform the steps of Activity 9-6 as written.

Activity 9-7: Reviewing Performance Reports

Perform the steps of Activity 9-7 as written.

Activity 9-8: Managing CPU Resources in Hyper-V

Perform the steps of Activity 9-8 as written.