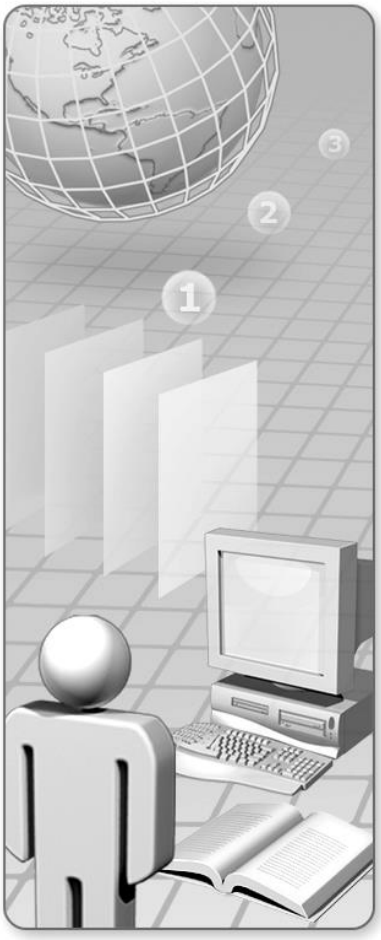
Microsoft

10961B: Automating Administration with Windows PowerShell

Microsoft® Hyper-V® Classroom Setup Guide



Contents

Product Number: 10961B

Introducing Microsoft Hyper-V

Important Note: This setup requires Windows Server® 2012 release as the Host operating system. To import virtual machines successfully to Windows Server 2012 you will have to run the VM-Pre-Import script that will create symbolic links to the Base images in the C:\Program Files \Microsoft Learning\10961Drives*VirtualMachineName*\Virtual Hard Disks\ folders.

This learning product is designed using Microsoft® Hyper-V running on Windows Server 2012 Hyper-V is a virtualization technology that allows a single computer to act as a host for one or more virtual machines. The virtual machines use a set of virtual devices that might or might not map to the physical hardware of the host computer.

The software that is installed onto the virtual machine is unmodified, full-version, retail software that operates exactly as it does when it is installed onto physical hardware.

The following definitions will help you with the remainder of this document:

- **Hyper-V**: Hyper-V is a server application that enables users to run a broad range of operating systems simultaneously on a single physical server. Hyper-V is included with Windows Server 2012.
- **Host Computer**: The physical computer onto which you install the operating system and the Hyper-V server role.
- **Host Operating System**: The operating system that is running on the physical computer. For this course, the only supported host operating system is Windows Server 2012
- **Virtual Machine**: The computer that is running inside Hyper-V. In this document, "Hyper-V" refers to the application running on the host, while "virtual machine" refers to the guest operating system and any software that is running inside the Hyper-V application.
- **Guest Operating System**: The operating system that is running inside the virtual machine.

Note: Pressing Ctrl+Alt+Delete while working with a virtual machine will display the **Windows Security** dialog box for the host operating system. To close the dialog box, press Esc. To access the **Windows Security** dialog box for a guest operating system, press Ctrl+Alt+End. Other than this difference, software on a virtual machine behaves as it would behave on a physical computer.

You can configure virtual machines to communicate with the host computer, other virtual machines on the same host computer, other host computers, virtual machines on other host computers, other physical computers on the network, or any combination thereof.

The setup instructions that you will follow as part of this classroom setup guide configure Hyper-V and the Virtual Machines that run on the host. Changing any of the configuration settings may render the labs for this learning product unusable.

Setup Overview

The host computers must be set up with Windows Server 2012 running on 64-bit hardware. For more information on the supported hardware for Hyper-V, go to http://www.microsoft.com/hyper-v.

For the purposes of this learning product, it is not necessary for the host computers to be able to communicate with another network. However, we recommend that you allow them to communicate with each other to make setup easier. The setup procedures below assume that the host computers can communicate with each other for setup purposes. You should note the administrator's user name and password for the host computers, and provide this information to the instructor.

Important: This is the first course that Microsoft Learing has released that has the requirement of a Windows Server 2012 host operating system. A such you should try allow extra time to complete your classrom setup as you become familiar with the process.

Windows 8 Virtual Machine Activation

A new requirement necessitates the activation of virtual machines used in this course that are based on Windows 8. Instructions for activating Windows 8 virtual machines can be found in the section titled **Configure the Virtual Machines on the Instructor Computer**.

More information on this new requirement and steps on how to obtain product keys for activation can be found here: http://go.microsoft.com/fwlink/?LinkId=270851.

Note: The Windows 8 virtual machines require activation whereas the Windows Server 2012 virtual machines require *slmgr-rearm* to be run from a command line with elevated privileges.

Classroom Requirements

This learning product requires a classroom with a minimum of one computer for the instructor and one for each student. Before class begins, use the following information and instructions to install and configure all computers.

Hardware

The classroom computers require the following hardware and software configuration.

Hardware Level 6

- Intel Virtualization Technology (Intel VT) or AMD Virtualization (AMD-V) processor
- Dual 120 gigabyte (GB) hard disks 7200 RM SATA or better*
- 8 GB random access memory (RAM) or higher
- DVD drive
- Network adapter
- Super VGA (SVGA) 17-inch monitor
- Microsoft Mouse or compatible pointing device
- Sound card with amplified speakers

*Striped

Additionally, the instructor computer must be connected to a projection display device that supports SVGA 1024 x 768 pixels, 16-bit colors.

Software

Please note that, unless otherwise indicated, this software is not included in the Trainer Materials disc. This learning product was developed and tested on supported Microsoft software, which is required for the classroom computers.

Also required, but not included in the Training Materials: Microsoft Office PowerPoint® 2007 (instructor computer only).

Classroom Configuration

Each classroom computer will serve as the host for several virtual machines that will run in Hyper-V. Domain or workgroup membership for the host computer does not matter, nor does the network configuration of the host computers. After completion of the setup, all computers will be configured to run several virtual machines running Windows Server 2012 and Windows 8.

Estimated Time to Set Up the Classroom: 120 Minutes

Instructor Computer Checklist

- ☐ 1. Install the Hyper-V Server Role
- ☐ 2. Create a Private Virtual Network
- ☐ 3. Install the Virtual Machine Files
- ☐ 4. Create a Setup Share
- ☐ 5. Copy the Virtual Machine Files to the Student Computer
- ☐ 6. Run the VM-Pre-Import Script
- ☐ 7. Import the Virtual Machines on the Instructor Computer
- ☐ 8. Configure the Virtual Machines on the Instructor Computer
- ☐ 9. Install the PowerPoint Slides (if needed)
- ☐ 10. To Configure the MSL-TMG1 Virtual Machine

Instructor Computer Setup

Use the instructions in the following section to set up the classroom manually. Before starting the installation of the instructor computer, a supported operating system and Microsoft Power Point 2007 must be installed on the computer.

Important: The operating systems installed on the virtual machines in this learning product have *not* been activated and each virtual machine is in the Notification state.

As stated earlier, you must activate the Windows 8 client virtual machines, per the steps outlined below. However, you do *not* need to activate the Windows Server 2012 virtual machines, but do need to place them in a grace period by running the **slmgr –rearm** command at the administrative command prompt.

You may be prompted to restart the computer when the virtual machine is started for the first time. This is because of the hardware differences on the Host computer. You can restart if you wish or just click **Restart Later** to close the prompt.

1. Install the Hyper-V Server Role

In this task, you will install the Hyper-V server role on the Windows Server 2012 host computer.

Important: If Hyper-V is installed already, you can skip this procedure.

1. On the host machine, click on the icon in the taskbar in the lower left hand corner to open **Server Manager**
2. In the **Server Manager** console, click **Manage** then select **Add Roles and Features**.
3. In the **Add Roles and Features** wizard on the **Before You Begin** page, click **Next**.
4. On the **Select Installation Type** page select **Role-based or feature-based installation** and click **Next >**
5. On the **Server Selection page** choose **Select a server from the server pool** and ensure your host machine is highlighted then **click Next >**
6. On the **Select server roles** page, select the **Hyper-V** check box, and then click **Next**.
7. On the **Select features** page click **Next >**
8. On the **Confirmation** page click **Install**. When the installation is complete you will need to restart the computer.
9. After the server restarts, log on using administrator credentials.

2. Create a Private Virtual Network

This section lists the networks created for this learning product. These steps are required if you do not have a private virtual network created.

1. On the host machine, click in the lower left hand corner and click to open the **Start Screen**
2. Click on **Hyper-V Manager** to open the **Hyper-V Manager** console
3. In the **Hyper-V Manager** console, click **Virtual Switch Manager**.
4. In the center pane, click **Private**, and then click **Create Virtual Switch**.
5. In the **Name** field, type **Private Network**, accept the remaingin default settings in the dialogue and then click **OK**.

3. Install the Virtual Machine Files

After installing the Hyper-V server role, you will need to follow the following steps to copy the base images, middle tiers, and virtual machine files to the server, and then configure the virtual machines.

Extract the Course Images

To Extract the Base Images:

1. From the courseware source files location, double-click **Base12A-WS12-TMP.part01.exe**.
2. In the Official Microsoft Learning Product License Terms window, click **Accept** to indicate that you accept the terms in the license agreement.
3. In the WinRAR self-extracting archive window, in the **Destination folder** text box, ensure that **C:\Program Files\Microsoft Learning\Base** is listed, and then click **Extract**. Wait while the base virtual hard disk file is extracted. This might take a few minutes.
4. From the courseware source files location, double-click **Base12B-W8.part01.exe**.
5. In the Official Microsoft Learning Product License Terms window, click **Accept** to indicate that you accept the terms in the license agreement.
6. In the WinRAR self-extracting archive window, in the **Destination folder** text box, ensure that **C:\Program Files\Microsoft Learning\Base** is listed, and then click **Extract**. Wait while the base virtual hard disk file is extracted. This might take a few minutes.

To Extract the Virtual Machines:

(If required for disk space, you can extract the course-specific files to a different drive as long as the Base images and the Middle Tiers are located in the default path.)

1. From the courseware source files location, double-click **10961B-LON-DC1.part01.exe**.
2. In the Official Microsoft Learning Product License Terms window, click **Accept** to indicate that you accept the terms in the license agreement.
3. In the WinRAR self-extracting archive window, in the **Destination folder** text box, ensure that **C:\Program Files\Microsoft Learning\10961\Drives** is listed, and then click **Extract**. Wait while the virtual hard disk file is extracted. This might take a few minutes.
4. Repeat steps 1 through 3 for the following files:
   - **10961B-LON-SVR1.part01.exe**
   - **10961B-LON-CL1.part01.exe**

Note: After completing the extraction of all of the classroom files, you should have the files listed in the following table installed.

File	In folder
Base12A-WS12-TMP.vhd	C:\Program Files\Microsoft Learning\Base
Base12B-W8.vhd	C:\Program Files\Microsoft Learning\Base
10961B-LON-DC1.vhd	C:\Program Files\Microsoft Learning\10961\Drives \10961B-LON-DC1\Virtual Hard Disks
10961B-LON-DC1-Allfiles.vhd	C:\Program Files\Microsoft Learning\10961\Drives\10961-LON-DC1\Virtual Hard Disks
VM-Pre-Import-10961B-LON-DC1.bat	C:\Program Files\Microsoft Learning\10961\Drives\10961B-LON-DC1
10961B-LON-SVR1.vhd	C:\Program Files\Microsoft Learning\10961\Drives \10961B-LON-SVR1\Virtual Hard Disks
VM-Pre-Import-10961B-LON-SVR1.bat	C:\Program Files\Microsoft Learning\10961\Drives\10961B-LON-SVR1
10961B-LON-CL1.vhd	C:\Program Files\Microsoft Learning\10961\Drives \10961B-LON-CL1\Virtual Hard Disks
10961B-LON-CL1-Allfiles.vhd	C:\Program Files\Microsoft Learning\10961\Drives \10961B-LON-CL1\Virtual Hard Disks
VM-Pre-Import-10961B-LON-CL1.bat	C:\Program Files\Microsoft Learning\10961\Drives\10961B-LON-CL1

4. Create a Setup Share

In this task, you will share virtual machine files for copying to student computers.

1. Share the C:\Program Files\Microsoft Learning\Base folder using a share name of **Base_Drives**.
2. Share the C:\Program Files\Microsoft Learning\10961\Drives folder using a share name of **10961_Drives**.

> **Note:** For information on how to set up a share in Windows Server 2012, refer to "Share a Resource" in Windows Help and Support.

5. Copy the Virtual Machine Files to the Student Computer

> **Note:** You must perform the file copy prior to importing the virtual machines. Once you import the virtual machines, you will not be able to import them again.

1. From the student computer, copy all of the files from the Base_Drives share on the instructor computer to **C:\Program Files\Microsoft Learning\Base**.
2. Copy all of the files from the 10961_Drives share on the instructor computer to **C:\Program Files\Microsoft Learning\10961\Drives**.

> **Note:** Ensure that all files are copied:
> a. C:\Program Files\Microsoft Learning\10961 and all included folders and files
> b. C:\Program Files\Microsoft Learning\Base

3. Ensure that you have copied the files using a permission-retaining software such as RoboCopy or XCopy.
4. Verify that all permissions have been retained by looking at the directories above and ensuring that they are not set to Read-Only.
5. Add the virtual machines to the Hyper-V management console. For detailed instructions, refer to the instructor computer setup.

6. Run the VM-Pre-Import Script

In this task, you will run the VM-Pre-Import- *xxxx-VirtualMachineName*.bat file. This script will create links to the Base and Mid-Tier images in the import folder, which are necessary for importing each virtual machine with Hyper-V in Windows Server 2012.

1. Double-click **C:\Program Files\Microsoft Learning\10961\drives \10961B-LON-DC1\VM-Pre-Import-10961-LON-DC1.bat** (root of the virtual machine import folder).
2. Verify the links are created in the appropriate C:\Program Files\Microsoft Learning \10961\drives\10961-LON-DC1\Virtual Hard Disks\ folder.
3. Repeat the steps above for each virtual machine that has a parent drive. The batch files include the following:
    1. **VM-Pre-Import-10961B-LON-CL1.bat**
    2. **VM-Pre-Import-10961B-LON-SVR1.bat**

7. Import the Virtual Machines on the Instructor Computer

1. On the Instructor computer, on the host machine, click **Start**, point to **Administrative Tools**, and then click **Hyper-V Manager**.
2. In the Actions pane, click **Import Virtual Machine**.
3. In the **Import Virtual Machine** dialog box, on the Before You Begin page click **Next >**
4. On the **Locate Folder** page click **Browse**. Browse to **C:\Program Files\Microsoft Learning\10961\drives**, click **10961B-LON-DC1**, and then click **Select Folder** and then click **Next >**
5. On the **Select Virtual Machine** page ensure **10961B-LON-DC1** is highlighted and click **Next >**
6. On the **Choose Import Type** page ensure **Register the virtual machine in-place (use the existing unique ID)** radio button is selected and click **Next >**
7. On the **Completing Import Wizard** page click **Finish**
8. Repeat steps 2 through 7 for the following virtual machines:
    - **10961B-LON-SVR1**
    - **10961B-LON-CL1**

8. Configure the Virtual Machines on the Instructor Computer

1. Right-click **10961B-LON-DC1**, and then click **Start**.
2. Right-click **10961B-LON-DC1**, and then click **Connect**.
3. Verify that the virtual machine boots. Sign in as **Adatum\Administrator** using the password **Pa$$w0rd**.

4. It is in Server Core Installation mode and a command window will appear after signin. In this command prompt, and type **slmgr –rearm**.
5. Restart the computer as prompted. The computer can be restarted using the following command.

```
shutdown /r /t 0
```

6. After the computer restarts, sign in as **Adatum\Administrator** with the password **Pa$$w0rd**.
7. Shut down the virtual machine. The computer can be shutdown using the following command.

```
shutdown /s /t 0
```

8. After the virtual machine shuts down, in the Hyper-V Manager, under **Virtual Machines**, right-click **10961B-LON-DC1**, and then click **Snapshot**.
9. Wait for the Snapshot process to finish. In the Snapshots pane, right-click the snapshot name, and then click **Rename**.
10. Type **StartingImage**, and then press Enter.
11. Repeat steps 1 through 10 for the following virtual machines:
    - **10961B-LON-SVR1** (This is a Windows Server 2012 virtual machine also in Server Core Installation mode. You also need to modify step 3. Listed above and sign in as **Administrator** with password **Pa$$w0rd**, i.e. as a local administrator rather than domain administrator account)
12. **10961B-LON-CL1** will need to be activated. This is a Windows 8 virtual machine and as such requires activation.
13. Repeat steps 1-3 and then follow the steps under Appendix B. After that, repeat steps 6-10 to create a snapshot named StartingImage for 10961B-LON-CL1

Note: You must activate the Windows 8 client virtual machines, and you need to acquire a product key as per the steps outlined here, also see Appendix B.

9. Install the PowerPoint Slides

In this task, you will install the Office PowerPoint slides for the learning product:

- In the Trainer Materials disc, in the **\TrainerFiles** folder, extract **10961B-ENU-PowerPoint.exe**.

10. To Configure the MSL-TMG1 Virtual Machine

1. Set up the MSL-TMG1 virtual machine. The MSL-TMG1 virtual machine and its related setup guide can be downloaded from the MCT Download Center in the Base Virtual Hard Disks – Mid-Tiers (ENGLISH) folder. The Microsoft Forefront® Threat Management Gateway (TMG) virtual machine requires Base11A-WS08R2SP1.VHD which is also available on the DLC in the Base Virtual Hard Disks (ENGLISH) folder.
2. Configure the MSL-TMG1 virtual machine to use dynamic memory. In the Hyper-V Management console, access the MSL-TMG1 virtual machine settings. Click **Memory**, click **Dynamic**, and set **Startup RAM** to **1024 MB** and **Maximum RAM** to **4096 MB**.
3. Perform the following additional configuration changes on MSL-TMG1:
    a. Change the IP address of the virtual machine to
        i. IP address of the virtual machine to be **10.0.0.1**
        ii. subnet mask: **255.255.255.0**
        iii. DNS: **10.0.0.2**
4. Open **ForeFront TMG Management**, click **Networking**, click the **Networks** tab, click **Internal**, and then click **Edit Selected Network**. In the **Internal Properties** dialog box, click the **Addresses** tab, and then click **Add Adapter** button, select **Private**, and then click **OK**. Click **OK**, and then click the **Apply** button. Click **Apply** one more time, and then click **OK**.
5. Click the **Web Access Policy** node, and enable the **Allow Web access for All Users** access rule.

> **Note:** The TMG virtual machine has its own setup guide. If you are having any difficulty setting up the TMG server It is important you read the TMG setup guide as there are additional steps contained within it that are specific to it, which are not contained here. i.e. there are several steps which may or may not need to be done depending on your own network environment such as configuring a DNS forwarder, configuring an a Proxy Server

One step that will most likely need to be done in some form is to configure DNS Forwarder on the Virtual Machine running DNS on Private Network side of MSLTMG1 i.e.**10961B-LON-DC1**. Here are the steps required to configure that

To Configure DNS Forwarder on 10961B-LON-DC1 do the following:

> **Note:** You will need to obtain the IP Address of an apropriate DNS Server on your network that can be configured as a Forwarder. This can be obtained from the TMG server and should then be entered as a DNS forwarding address into the course DNS Server i.e. 10961B-LON-DC1

1. On the TMG server open a command prompt and type **ipconfig /all.**
2. Copy down one of the DNS server IP addresses for the external network card.
3. On the LON-CL1 Virtual machine in the start screen open **Server Manager** go to **Tools** then **DNS,** in the **Connect to DNS** dialog select **The following computer:**radio button and enter **LON-DC1** and click **OK**
4. Right click the server name and go to **Properties**, and then click the Forwarders tab and click Edit.
5. Type the IP address of an available DNS server from step 2 above.
6. Click OK twice and then close DNS Manager.

Student Computer Checklist

- ☐ 1. Install the Hyper-V Server Role
- ☐ 2. Install the Base Image/Virtual Machine Files

Student Computer Setup

Use the instructions in the following section to set up the classroom manually. Before starting the installation of the student computer, a supported operating system must be installed on the computer. You can check the supported systems list at http://www.microsoft.com/hyper-v.

Caution: These instructions assume network connectivity between the instructor computer and the student computers. If you do not have connectivity, Microsoft Learning recommends copying the activated virtual machines to the student computers by means of a manually created DVD or universal serial bus (USB) drive.

1. Install the Hyper-V Server Role

Note: If Hyper-V is installed already, you can skip this procedure.

For detailed instructions, see the instructor computer setup instructions.

2. Install the Base Image/Virtual Machine Files

Note: Ensure that all extracted courseware virtual machine files were copied from the Instructor computer during the Instructor Computer setup. You will need the following directories to ensure that the student has all necessary files:
C:\Program Files\Microsoft Learning\10961
C:\Program Files\Microsoft Learning\Base

1. Check that all permissions have been retained by looking at the directories above, and verifying that they are not set to Read Only.
2. Run the VM-Pre-Import scripts. For detailed instructions, see the instructor computer setup.
3. Add the virtual machines to the Hyper-V management console. For detailed instructions, refer to the instructor computer setup.

Appendix A - KeyBoard Layout

The virtual machines were developed using the English (UK) layout shown below and as such the default setting is ENG (UK).

If your physical keyboard does not match the above layout, you may need to refer to the above layout for the character positions used to logon. For future logons and usage throughout the labs, you may want to install your keyboard layout in the virtual machine.

If you require a different keyboard language you should click on the system icon in the bottom right hand corner, which indicates the keyboard language, and select the appropriate language for you region. Alternatively you can use the following short cut keys sequence, hold down the Left ALT+ press Left SHIFT one key stroke at a time, while continuing to hold down the Left ALT key, to scroll through the languages or by pressing Windows Key + Space to select your required language.

Appendix B – Activating the Windows 8 Virtual Machines

Obtaining Product Keys for Activation

To receive product keys that you will use to activate the Windows 8 virtual machines accompanying this course, please follow the guidelines described here: http://go.microsoft.com/fwlink/?LinkId=270851.

Activating a Windows 8 Virtual Machine

You must first ensure that the Forefront TMG virtual machine and any domain controller (if required for the course) have been started, and that the Forefront TMG virtual machine has internet connectivity. Then perform the following steps to activate the Windows 8 Virtual Machine:

1. On the Windows Server 2012 Host operating system hover the mouse over the lower left hand side and right clicking when the coloured context menu appears
2. Select **Command Prompt (Admin)** from the resultant context menu
3. If prompted, click **Yes** on the **User Account Control** dialog box.
4. On the command prompt, type **slmgr /ipk <product key>**, and then press Enter.
5. Click **OK** on the dialog box.
6. On the command prompt, type **slmgr /ato**, and then press Enter.

> **Note:** In order for you to be able to activate the virtual machine successfully, the virtual machine must have internet connectivity.

7. Click **OK** on the dialog box.

> **Note:** The Windows 8 client virtual machines will need Internet access to allow activation. This is provided through the use of the **MSL-TMG1** virtual machine. The virtual machine and associated setup guide are available from the MCT Download Center. High-level details are included below.

To Configure the MSL-TMG1 Virtual Machine

1. Set up the MSL-TMG1 virtual machine. The MSL-TMG1 virtual machine and its related setup guide can be downloaded from the MCT Download Center in the Base Virtual Hard Disks – Mid-Tiers (ENGLISH) folder. The Forefront TMG virtual machine requires Base11A-WS08R2SP1.VHD, which also is available on the Download Center in the Base Virtual Hard Disks (ENGLISH) folder.
2. Configure the MSL-TMG1 virtual machine to use dynamic memory. In the Hyper-V Management console, access the MSL-TMG1 virtual machine settings. Click

Memory, click **Dynamic**, and set **Startup RAM** to **1024 MB** and **Maximum RAM** to **4096 MB**.

3. Perform the following additional configuration changes on MSL-TMG1:
    a. Change the following details
        i. IP address of the virtual machine to be **10.0.0.1**
        ii. subnet mask: **255.255.255.0**
        iii. DNS: **10.0.0.2**
    b. Open **ForeFront TMG Management**, click **Networking**, click the **Networks** tab, click **Internal**, and then click **Edit Selected Network**. In the **Internal Properties** dialog box, click the **Addresses** tab, and then click **Add Adapter** button, select **Private**, and then click **OK**. Click **OK**, and then click the **Apply** button. Click **Apply** one more time, and then click **OK**.
    c. Click the **Web Access Policy** node, and enable the **Allow Web access for All Users** access rule.

Appendix C - Automated Classroom Setup using Windows PowerShell v3.0

The Virtual Machines in this course were built on Windows Server 2012. Built into Windows Server 2012 is Windows PowerShell 3.0 and as part of a move to automate the classroom setup we have provided some scripts that will automate certain aspects of the classrom setup.

There is one script provided that will run inside the virtual machines, namely for running slmgr -rearm. All other scripts will run on the host machine. The areas that are automated are

1) Installing Hyper-V
2) Creating a Virtual Private Switch in Hyper-V
3) Creating link files to the base images for the course virtual machines
4) Importing the course virtual machines into Hyper-V
5) Rearm Windows Server 2012 virtual machines
6) Take *StartImage* SnapShots of the imported and configured virtual machines

The amount of automation will be relatively limited in this course as this is the first iteration but it should help speed up the classroom setup process to some degree and it is envisaged that this automated process and provided scripts will evolve over time.

Note: The automated setup steps outlined are independant of the standard manual setup process which is outlined earlier.You may or may not choose to follow all or some of these steps depending on your particular requirements.

The scripts are provided to complete the tasks listed in the headers and assume a clean Windows Server 2012 installation. Where the task is already completed in the classroom you do not need to run the script. For example, if the External or Private networks already exist, you would skip that script and move to the next task.

Required Files

Included on the MCT Download Center alongside the virtual machines is a file named

- **10961B-Automation.Classroom.Setup.exe**

This file contains six. further files

1) **InstallHyperV.ps1**
2) **CreateVirtualPrivateSwitch.ps1**
3) **VMPreImportScripts.ps1**
4) **ImportVirtualMachines.ps1**
5) **RearmAndRestart.ps1**

6) **Take_VMStartImageSnapshot.ps1**

Download the **10961B-Automation.Classroom.Setup.exe** from the MCT Download Center and extract the contents to the default location.

C:\Program Files\Microsoft Learning\10961\Drives\Automation.Classroom.Setup

Copy all the .ps1 files to a folder on the host machine that will run the lab virtual machines. The .ps1 files need to be on the individual host machines and you will then run them one by one as per each task outlined below.

Important: You may receive an error blocking the scripts from being run concerning the Windows PowerShell script execution policy on the local host. Prior to starting to run any of the scripts you should run the following command in the Windows PowerShell Console, confirming your action by pressing **Y** when prompted to do so

Set-ExecutionPolicy RemoteSigned

As stated below as well, you also need to ensure you are running the Windows PowerShell console or Windows PowerShell ISE as Administrator; otherwise you may not have appropriate privileges to run the scripts successfully.

Instructor Computer Checklist

- ☐ 1. Install the Hyper-V Server Role
- ☐ 2. Create a Private Virtual Network
- ☐ 3. Install the Virtual Machine Files
- ☐ 4. Create a Setup Share
- ☐ 5. Copy the Virtual Machine Files to the Student Computer
- ☐ 6. Run the VM-Pre-Import Script
- ☐ 7. Import the Virtual Machines on the Instructor Computer
- ☐ 8. Configure the Virtual Machines on the Instructor Computer
- ☐ 9. Install the PowerPoint Slides (if needed)
- ☐ 10. To Configure the MSL-TMG1 Virtual Machine

Instructor Computer Setup

Download and copy all the .ps1 files to a folder on the host machine that will run the lab virtual machines. They need to be on the individual host machines and you will then run them one by one as per each task outlined below.

> **Important:** All Windows PowerShell files are available on the MCT Download Center under the course folder

.

1. Install the Hyper-V Server Role

In this task, you will install the Hyper-V server role on the Windows Server 2012 host computer using the file **InstallHyperV.ps1**

> **Important:** If Hyper-V is installed already on the host machine, you can skip this procedure and move to step 2.

1. On the host machine that will host the virtual machines open a Windows PowerShell console by right clicking on the Windows PowerShell icon in the taskbar and selecting **Run as Administrator**
2. Go to the folder location where you have the **InstallHyperV.ps1** and type **.\InstallHyperV.ps1**
3. The poweshell script will run and Hyper-V will install. A restart will be required to complete the installation successfully.

2. Create a Virtual Private Virtual Switch

In this task, you will create a Virtual Private switch in Hyper-V on the Windows Server 2012 host computer using the file **CreateVirtualPrivateSwitch.ps1**

> If a Private Virtual Switch named Private Network has already been created on the host machine you can skip this procedure and proceed to step 3.

1. On the host machine that will host the virtual machines open a Windows PowerShell console by right clicking on the Windows PowerShell icon in the taskbar and selecting **Run as Administrator**
2. Go to the folder location where you have the **CreateVirtualPrivateSwitch.ps1** and type **.\CreateVirtualPrivateSwitch.ps1**

3. Install the Virtual Machine Files

There is no automation available currently for this. Please refer to the manual steps outlined earlier in this set up guide.

4. Create a Setup Share

There is no automation available currently for this. Please refer to the manual steps outlined earlier in this set up guide

5. Copy the Virtual Machine Files to the Student Computer

There is no automation available currently for this. Please refer to the manual steps outlined earlier in this set up guide

6. Run the VM-Pre-Import Script

In this task, you will create a the link files to the base images in on the Windows Server 2012 host computer using the file **VMPreImportScripts.ps1**

> If the link files have already been created on the host machine you can skip this procedure and proceed to step 7.

1. On the host machine that will host the virtual machines open a Windows PowerShell console by right clicking on the Windows PowerShell icon in the taskbar and selecting **Run as Administrator**
2. Go to the folder location where you have the **VMPreImportScripts.ps1** and type **.\VMPreImportScripts.ps1**

7. Import the Virtual Machines on the Instructor Computer

In this task, you will import the course virtual machines into Hyper-V on the Windows Server 2012 host computer using the file **ImportVirtualMachines.ps1**

> If the virtual machines have already been imported into Hyper-V on the host machine you can skip this procedure and proceed to step 8.

1. On the host machine that will host the virtual machines open a Windows PowerShell console by right clicking on the Windows PowerShell icon in the taskbar and selecting **Run as Administrator**
2. Go to the folder location where you have the **ImportVirtualMachines.ps1**and type **.\ImportVirtualMachines.ps1**

8. Configure the Virtual Machines on the Instructor Computer

There is no automation available currently for activating the Windows 8 client virtual machines however there is a script available for running rearm and restarting the Windows Server 2012 virtual machines. When you start up the Windows Server virtual machines you will typically see a .ps1 file present on the desktop, however in this course the two Windows Servers are Windows Server 2012 server Core installations and file will only be visible as listed in the command prompt by typing **dir**

To rearm the Windows Server 2012 virtual machines do the following

1. On the **10961B-LON-DC1** virtual machine in **Hyper-V Manager** right click the virtual machine and click **Start.**
2. Right the **10961B-LON-DC1** virtual machine and select **Connect.**
3. Once the virtual machine has started Sign in with the user name **Adatum\Administrator** and password **Pa$$w0rd**
4. Once signed in, you will be taken to a command prompt as the 10961B-LON-DC1 is a server core installation
5. At the command prompt type **Powershell** and press **Enter**
6. Type **.\RearmAndRestart.ps1** and press **Enter**
7. Once restarted sign in again with the user name **Adatum\Administrator** and password **Pa$$w0rd**
8. Repeat steps 1 to 7 for the following virtual machine
    - **10961B-LON-SVR1**

Note: This is a Windows Server 2012 virtual machine also in Server Core Installation mode. You also need to modify step 3. and step7 which listed above and sign in as **Administrator** with password **Pa$$w0rd**, i.e. as a local administrator rather than domain administrator account

Also you may receive an error concerning running scripts being disabled in the environment when you go to run the script. If you receive such an error you need to run the following command

Set-ExecutionPolicy Remotesigned

as outlined in an earlier note at the start of this section.

There is also a Windows PowerShell script for taking the *StartImage* snapshots once the configuration is complete. Please refer to the manual steps outlined earlier for the activation steps which need to be done inside the Windows 8 virtual machines and then you can use the Windows PowerShell script to take the required *StartImage* snapshots

Note: As per the earlier steps the **Windows Server 2012** virtual machines must have *slmgr –rearm* run from a command line otherwise they are running in Notification mode and will shut down every hour.

The **Windows 8** virtual machines must be activated with the product key you have been provided with as per the guidelines available at http://aka.ms/win8labkeys

1. Once the virtual machine configuration is complete inside the VMs, then on the host machine open a Windows PowerShell console by right clicking on the Windows PowerShell icon in the taskbar and selecting **Run as Administrator**
2. To avoid potential synchronization issues if you need to troubleshoot the virtual machines during class, you should then shut down the virtual machine before then taking the snapshot. The computer can be shutdown using the following command.

```
shutdown /s /t 0
```

You could choose to leave the virtual machines started up before taking the snapshot to save time when a student applies a snapshot, but you just need to be aware that that was done when creating the snapshots in case you need to troubleshoot.

3. After the virtual machine shuts down, go to the folder location where you have the **Take_VMStartImageSnapshot.ps1** and type **.\Take_VMStartImageSnapshot.ps1**

9. Install the PowerPoint Slides

There is no automation available currently for this. Please refer to the manual steps outlined earlier in this set up guide

10. To Configure the MSL-TMG1 Virtual Machine

There is no automation available currently for this. Please refer to the manual steps outlined earlier in this set up guide