

Chapter 3

Working with VMware Workstation

Many of the activities in the textbook were written using version 12 of VMware Workstation Professional. Since Workstation Player is a free product, the modified activities in this chapter have been changed to use Workstation Player 16. If you install a trial version of VMware Workstation Pro, the latest version of VMware Workstation Player will also be installed on your computer.

Activities 3-2 and 3-9 in this chapter were originally written to create a virtual machine and install Windows Server 2016. These activities have been modified to create and install Windows Server 2019 on a virtual machine that will be used in later VMware activities.

The VMware Workstation player window below in Figure 3-1.



FIGURE 3-1

The menu bar shown in Figure 2-1 contains the following options and shortcuts:

1. The **Player** pull-down menu contains; Power, Removable Devices, Ctrl+Alt+Del, Manage, Full Screen, Unity, and Help options.
2. The **power** pull-down menu contains; Power on, Shut Down Guest, Suspend Guest, and Restart Guest options.
3. Use the **Send Ctrl+Alt+Del** option to send the Ctrl+Alt+Del key sequence to the guest virtual machine. You will need to use this option to log in to Windows Server 2019.
4. The **Full Screen** option will put the virtual machine in full screen mode. You can use the Ctrl+Alt+Enter key combination or click the Full Screen option again to return to window mode.
5. Use the **Unity** option to enter the Unity mode. See chapter 3 of the Hands-on Virtual Computing textbook for more information on Unity mode. We will not be using this mode for the activities in this booklet.



Activity 3-2: Creating a Virtual Machine for Windows Server 2019

Time Required: 10 minutes

Objective: Create a virtual machine for a later installation of Windows Server.



Description: In this activity, you create a virtual machine that you will later use to install the Windows Server 2019 guest OS.

1. Start VMware Workstation Player by using one of the installed shortcuts. If you see the “Welcome to VMware Workstation Player” dialog box, verify that “**Use VMware Workstation 16 Player for free for non-commercial use**” check box is selected and click **Continue** and then click **Finish** to display the “Welcome to VMware Workstation 16 Player Home” window.
2. Click the **Create a New Virtual Machine** option from the main “Welcome to VMware Workstation” window.
3. Click to select the **I will install the operating system later** option and click **Next**.
4. In the “Select a Guest Operating System” window, verify that the “Microsoft Windows” option is selected and click the **Version** “pulldown arrow” to get a list of Windows versions.
5. Click **Windows Server 2019** and click **Next** to display the “Name the Virtual Machine” window.
6. By default, the virtual machine name matches the OS version, and the virtual machine folder is created in your “Documents\Virtual Machines\Windows Server 2019” folder. Leave the virtual machine name as “Windows Server 2019”.
7. Click the **Browse** button and navigate to your virtual machines folder. Click the **Make New Folder** button and create a folder named “Windows Server 2019” and click **OK**. Verify your entries and click **Next**.
8. In the “Specify Disk Capacity” window, enter **120** in the “Maximum disk size (GB)” text box. Click the **Store virtual disk as a single file** option and then click **Next** to display the “Ready to Create Virtual Machine” window summarizing your selections.
9. Verify your selections, and then click **Finish**. The virtual machine is created, and the administrative console is displayed with a new entry for the Windows Server 2019 virtual machine.
10. Right-click the new **Windows Server 2019** and record the options.
11. Click the **Settings** option to display the “Virtual Machines Settings” Hardware tab. You will be using this to add devices in future activities.
12. Click the **Options** tab and notice that you can use this to change virtual machine name and manage other options such as VMware Tools.
13. Click **Cancel** to close the Virtual Machine Settings window.

You may leave VMware Workstation Player open for the next activity.



Activity 3-9: Installing Windows Server 2019 on an existing Virtual Machine

Time Required: 20-30 minutes

Objective: Perform a manual installation of Windows Server 2019 on an existing virtual machine.

Requirements: Completion of Activity 3-2 and the Windows Server 2019 ISO image file downloaded previously in Activity 1-A.

Description: In this activity you will install Windows 2019 onto the virtual machine you created in activity 3-2. The Windows Server 2019 VM will then be used in future activities.

1. If necessary, start your VMware Workstation Player.
2. Click **Windows Server 2019** from the left-hand pane.
3. Click the **Edit Virtual Machines settings** link to display the “Hardware” information tab shown below in Figure 3-2.

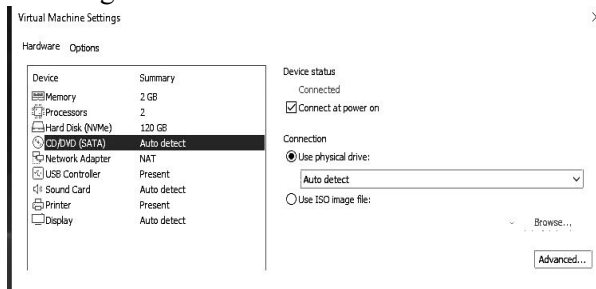


FIGURE 3-2

4. Click the CD/DVD (SATA) option from the Hardware tab and then click to select the **Use ISO image file** option.
5. Click the **Browse** button and navigate to the folder containing your Windows Server 2019 ISO file.
6. Click to select the Windows Server 2019 ISO file and then click the **Open** button.
7. Click **OK** to return to the “VMware Workstation Player” home screen.
8. Verify that “Windows Server 2019” is displayed in the OS field and then click **the Play virtual machine** link to start the virtual machine.
9. **Quickly click** in the Windows Server 2019 virtual machine window and then press the **Space or Enter** key to boot from the ISO file.
10. When you see the opening Windows Server 2019 Language screen, select your language and time format, then click **Next**.
11. Click the **Install now** button to start the Setup process.
12. When you see the Activate Windows screen, click the **I don’t have a product key** link at the bottom of the window (this will give you a 180-day evaluation period) and display the License term screen.
13. Click the **I accept the license terms** check box and click **Next**.
14. In the “Which type of installation do you want?” window, click **Custom: Install Windows only (advanced)**.
15. In the “Where do you want to install Windows?” window, verify that “Drive 0 Unallocated Space” is selected, click **New**, change the size to **60,000 MB**, then click **Apply**. When a Windows message box is displayed informing you that Windows may create additional partitions, click **OK** to create the new partition and display the revised partition table.
16. After verifying the partition(s), click **Next** to continue.
17. The Windows installation begins. Typically, the process takes around 15 minutes, and your computer restarts at least once, so it is a good time to take a short break.

18. When the installation is finished, the “Customize Settings” window will be displayed, and you’re prompted create a password for the administrator account (Make sure it’s at least six characters, contains uppercase and lowercase letters, and includes a number or non-alphanumeric character.) Record your password below and then click **Finish**.

You may leave your VMware Workstation Player and Windows Server 2019 running for the next activity.

If you are finished for the day, use the Power option from your VMware Workstation Player menu bar to power off the Windows Server 2019 and exit VMware Workstation Player.



Activity 3-10: Installing VMware Tools on a Windows Virtual Machine

Time Required: 15 minutes

Objectives: Install VMware Tools on an existing virtual machine.

Requirements: Completion of activity 3-9

Description: In this activity you will install VMware tools on your Windows Server 2019 virtual machine.

1. If necessary, start VMware Workstation Player and launch your Windows Server 2019 virtual machine.
2. Click the option from the VMware Workstation Player's menu bar to send Ctrl+Alt+Del key sequence to this virtual machine button and then log on to Windows with your administrative username and password (you will need to click inside the virtual machine window in order to enter your password.)
3. If this is the first time the Windows Server 2019 has been run, you will need to select **Yes** when you see the "Networks" pane.
4. Click the **Player** pull-down menu, point to **Manage**, and click the **Install VMware Tools...** option.



This option will connect your Windows guest computer to a virtual DVD drive that contains the VMware Tools installation files.

5. From your Windows Server 2019 desktop, open File Explorer and click on **This PC**.
6. Double-click the DVD Drive (D:) to start the installation of VMware Tools. (Note: The installation wizard may be "hidden" behind the File Explorer window.)
7. Click **Next** when you see the "VMware Tools Setup" wizard's Welcome window.
8. When you see the Choose Setup Type window, click the **Complete** option button to enable you to run this virtual machine on other VMware products such as the vSphere data center you will be creating, and then click **Next**.
9. In the "Ready to install VMware Tools" window, click **Install**.
10. When the installation is completed, click **Finish**, and then click **Yes** to restart the virtual machine.
11. Your Windows server will now restart and load VMware Tools.
12. After Windows starts, follow the steps below to view VMware Tools status.
 - a. Pull down the Player menu and click **Manage**.
 - b. Click **Virtual Machine Settings...**
 - c. Click the **Options** tab.
 - d. Click on **VMware Tools** and select the option to Synchronize guest time with host.
 - e. Click **OK** to close the Options window.
13. Click the **Shut Down Guest** option from the VMware Workstation Player menu bar Power menu to safely shut down your virtual machine.

You may leave VMware Workstation Player open for the next activity.





Activity 3-11: Adding a Hard Disk the Window Server 2019 Virtual Machine

Time Required: 15 minutes

Objectives: Install VMware Tools on an existing virtual machine.

Requirements: Completion of Activity 3-9

Description: In this activity you add a virtual hard disk to your Windows Server 2019 virtual machine. This drive will be used in later activities as a shared drive for vSphere virtual machines.

1. If necessary, launch your VMware Workstation Player software and verify that your Windows Server 2019 virtual machine is powered off.
2. Perform the following procedure to add a virtual hard disk of 150 GB to your Windows Server 2019 VM.
 - a. Click the **Windows Server 2019** link in the Home pane and then click the **Edit virtual machine settings** link to display the “Hardware” tab.
 - b. Click the **Add** button to display the “Hardware Type” window.
 - c. Verify that the **Hard Disk** option is selected and then click **Next**.
 - d. Click the SCSI option under “Virtual disk type” and click **Next**.
 - e. Verify that the “Create a new virtual disk” option is selected and then click **Next**.
 - f. Enter **150** in the Maximum disk size (GB) field and then click the **Store virtual disk as a single file** option and click **Next**.
 - g. Record the default name and click **Finish** to create the virtual disk and return to the “Virtual Machine Settings” window.
 - h. Click **OK** to save your changes and return to the “Home” screen.
3. You will now start your Windows Server 2019 system and initialize the new virtual disk by following the steps shown below.
 - a. With the Windows Server 2019 selected, click the **Play virtual machine** link to start your Windows Server 2019 system.
 - b. Click the **Send Ctrl+Alt+Del to virtual machine** button and then click in the virtual machine window to login using your administrator password.
 - c. Start **Server Manager** and click the **File and Storage Services** heading.
 - d. Click **Disks** in the left-hand options pane to display the “Disks” screen.
 - e. Right-click the **Offline disk** and then click the **Bring Online** option from the pull-down menu and click **Yes** when you see the “Bring Disk Online” dialog box.
 - f. In the upper right of the Volumes pane, click **Tasks** to display the “Task” pull-down menu and click the **New Volume** option to start the New Volume Wizard.
 - g. When the wizard starts, click **Next** to display the “Select the server and disk” window.
 - h. Click **Next** and then click **OK** in the “Offline or Uninitialized Disk” dialog box. The “Specify the size of the volume” window will be displayed.
 - i. Record the maximum size and then click **Next** to display the “Assign to a drive letter of folder” window.
 - j. Record the default drive letter and then click **Next** to display the “Select file system settings” window.
 - k. Verify that the NTFS file system is selected and then enter “**User Data 1**” in the Volume label text box and click **Next** to display the “Confirm selections” window.
 - l. Verify your settings and then click **Create** to create and format the new volume.
 - j. After the volume is successfully created, close the “New Volume Wizard” and exit Server Manager.

4. Open **File Explorer**, click **This PC**, and verify that the E: drive is now available.
5. Power off your Windows Server 2019 virtual machine using the Windows Server 2019 power options.
When the virtual machine powers down, the corresponding instance of VMware Workstation Player will close.

This ends the activities for chapter 3. You may now begin to create your own virtual data center by performing the activities in chapter 4.