

# Chapter 1

Introduction to Virtual Computing

Chapter 1 of the Hands-on Virtual Computing textbook contains an overview of virtualization technology, defining the role of the hypervisor and describing the difference between Type-1 and Type-2 hypervisors. The chapter includes the following topics on virtualization technology:

- How Virtualization Software Works with Virtual Machines
- Hardware and Software requirements
- Networking and peripheral options
- Licensing requirements
- Identifies Type-2, Workstation, virtualization products and Data Center virtualization products based on type-1 hypervisors.
- Introduces the reader to other virtualization technologies including Virtual Desktop Infrastructure, application virtualization, and cloud computing.
- Identifies virtualization features to look for in virtualization products including the following and then compares these features on VMware, Windows, and Oracle products.
  1. Hardware virtualization
  2. Processor support
  3. Memory support
  4. Administrative and user consoles
  5. Support for COM, LPT, USB ports and optical devices.
  6. Disk support options
  7. Network support
  8. Administrative features including saving machine state, parenting and cloning, moving virtual machines between hosts, and migration tools.

The Hands-on Virtual Computing textbook chapter contains the following activities:

1. Activity 1-1: Creating a VMware Account and View Product Categories
2. Activity 1-2: Create a Microsoft Live Account and Viewing Microsoft Azure Product Features.
3. Activity 1-3: Downloading VMware Workstation 12
4. Downloading Oracle VirtualBox Files

Of these activities, Activity 1-1 and Activity 1-3 have been included in this booklet to meet the VMware vSphere requirements in later chapters. Activity 1-3 has been modified to download the free Windows Workstation Player in place of Windows Workstation Profession.

In addition to the Textbook activities, I have added Activity 1-A to download the necessary Windows installation files along with Activity 1-B to install Windows Workstation Player on the computer you will be using for the activities in this booklet.



## Activity 1-1: Setting up a MyVMware Customer Contact Account

Time Required: 10 minutes

**Requirements:** Web browser and Internet connection.

**Description:** In this activity you will create a MyVMware Customer Connect account and then use it to access VMware product information. (Note, the following steps are in a continual state of change based on VMware updates. My Web site – TedSimpsonBooks.com – contains updated activity information. You may also use this site to download answer sheets.)

1. If necessary, start your computer and open a Web Browser (I seem to have the best luck using Google Chrome).
2. Enter the URL: “MyVMware.com” to see the Customer Connect page.
3. Click the Login link in the upper right to display the Welcome to Customer Connect page and then click the **Sign up now** link to display the Register page shown in figure 1-1.

The screenshot shows the 'Register' page of the VMware Customer Connect website. At the top, there is a 'Register' heading and a sub-heading: 'Complete a registration form to access VMware Customer Connect and the management of your VMware Hosts, Key, Licenses, and other information. An email confirmation will be sent to the email address you provide.' Below this, there is a small image of three people shaking hands. The form itself is titled 'Login Information' and includes fields for 'Email address', 'First name', 'Last name', 'Company name', 'Phone number', 'Country', 'Language', and 'Password'. There is also a 'Verify account' section with a 'Verify account' button. At the bottom, there is a link to 'TALK TO US ABOUT YOURSELF'.

FIGURE 1-1

4. Enter your email address, a password, your name, contact and company information, and language as required by the form. Next, enter the Captcha code, agree to the terms of use, and then click the **Sign-Up** button.
5. After successfully completing the sign-up process, your customer number along with instructions to activate your account will be emailed to the address you entered.
6. Open your email and then click the **Activate your VMware Account** button to activate your account.
7. You can now log in to your MyVMware Customer Contact account by entering the password you created during the registration process. After logging in you will be presented with the VMware Customer Connect page shown in figure 1-2.

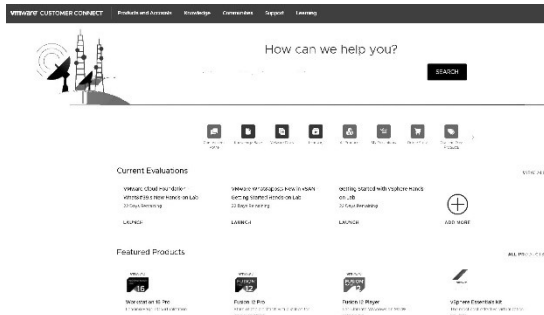


FIGURE 1-2

8. After logging in with your MyVMware Customer Connect account, you can obtain information on products, including trial and free solutions, access the VMware knowledge base, and enroll in learning programs and Webinars.
9. Click on the **All Products** button and record the first 3 product categories on your student answer sheet.
10. Click your browser's back arrow to return to the MyVMware.com home page.
11. Click the **Trial and Free Products** button.



- Record the trials that do not have labs below or on your answer sheet.
12. Scroll down the record the Products shown to the right of the Download Free Products heading on your answer sheet.

You can leave your browser open and stay logged in to MyVMware for the next activity.



## Activity 1-3: Downloading VMware Workstation Player

**Time Required:** 15 minutes

**Objective:** Download VMware Workstation Player

**Description:** In this activity, you will download VMware Workstation Player for Windows. The VMware Workstation Player will be used in later lab activities.

1. If necessary, log on to your host computer.
2. Start File Explorer, navigate to your Downloads folder, and click **New Folder** to create a folder named “VMwareProducts”.
3. If necessary, start a Web browser, go to MyVMware.com and log in using the username and password you created in earlier. Click the **Trial and Free Products** button on the menu line and then scroll down to the “Download Free Products” section.
5. Click the **VMware Workstation Player (Free)** link.
6. Click the **Go to Downloads** link to the right of VMware Workstation Player 16.#
7. Click the **Download Now** button to the right of the VMware Workstation ## for Windows 64-bit Systems.
8. Depending on your browser settings the download should start and place the file in your download folder. If necessary, after the download is complete, open your download folder and move the VMware-player-full-16 file to the folder you created in step 2.
8. Close the Download Product tab and return to the “Evaluate VMware Products” page.
9. Click the **Logout** link from the pull-down menu to log off. You can leave your browser open for the next activity.

You will be using VMware Workstation Player throughout the activities in this booklet to create a VMware “virtual” data center on your computer.



## Activity 1-A: Downloading Windows Installation files

**Time Required:** 20 minutes (depends on Internet speed)

**Objective:** Download Windows Server 2019 and Windows 10 Pro installation ISO files

**Description:** In this activity you will download ISO installation file for both Windows Server 2019 and Windows 10 Pro. These files will be used in later chapter activities.

1. If necessary, log on to your desktop computer.
2. Open Windows Explorer and create a folder on your local disk named “Windows Installation Files” for Windows ISO files.
3. Perform the following procedure to download Windows Server 2019:
  - a. If necessary, open your Internet Browser and enter the URL: [www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2019](http://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2019).
  - b. Click **Windows Server 2019 180 days** link.
  - c. Click the **Windows Server 2019 Essentials** link.
  - d. Verify that the ISO option is selected and click **Continue**.
  - e. Fill in your name, Company Size, Job title, email, and Country/region information and click **Continue**.
  - f. Select your language and then click the **Download** button to download into your browser download area.
  - g. The ISO will now be downloaded to your download folder. This will take several minutes so it may be a good time for a break.
  - h. If necessary, move the Windows Server ISO file to the folder you created in step 2. You will navigate to this folder when you install Windows Server in a later activity.
4. Perform the following steps to download the Windows 10 Pro installation file.
  - a. Enter the URL: [www.microsoft.com/en-us/software-download/windows10](http://www.microsoft.com/en-us/software-download/windows10).
  - b. Scroll down and click the **Download tool now** button to download the **MediaCreationTool21H2.exe** file.
  - c. Run the Media Creation tool from your download folder and click **Accept** when you see the license terms window.
  - d. In the “What do you want to do” window, click to select the “**Create installation media for another PC**” option and then click **Next**.
  - e. Verify the edition is “Windows 10” and the architecture is “64-bit” and then click **Next**.
  - f. In the “Choose which media to use” window, click the ISO file option and then click **Next** to display the Select a path dialog box.
  - g. Navigate to the folder where you want the ISO file to be downloaded to (see step 2) and then click **Save**.
5. The ISO file will now be downloaded to the folder you selected. If necessary, move the installation ISO file to the folder you created in step 2. You will need to be able to navigate to this folder in later activities.



This ISO file will have to be accessible from the computer running your VMware hosts.



## Activity 1-B: Installing VMware Workstation Player

**Time Required:** 10 minutes (depends on Internet speed)

**Objective:** Install VMware Workstation Player on your Windows computer.

**Description:** In this activity you will install VMware Workstation Player from the installation file you downloaded in Activity 1-3.

1. If necessary, log on to your desktop computer and start File Explorer.
2. Navigate to the folder (c:VMwareProducts) you created in activity 1-3 and double-click the VMware-player-full-##.exe file.
3. Click **Yes** if you see the User Account Control message box and wait for the installation wizard to start and display the Welcome dialog box.
4. Click **Next** to start the installation.
5. Click the check box to accept the license agreement and click **Next**.
6. Verify that the “Add VMware Workstation console tools into system PATH: check box is selected and click **Next**.
7. When you see the User Experience Setting dialog box, remove the checks from the check boxes and then click **Next** to continue.
8. Leave the default shortcuts and click **Next**.
9. Click **Install** to perform the installation process. Depending on your computer, this could take a few minutes so you may want to take a brief break.
10. When you see the Completed dialog box, click **Finish** to exit the installation. You should now have a VMware Workstation 16 Player icon on your desktop and in your start menu.
11. By default all virtual machines you create will be stored in your Documents folder. Since the virtual machines you create in this booklet will may use up to 500GB, you may wish to store the virtual machine files on a separate disk drive. If you wish to place virtual machines on a separate drive to save disk, perform the steps below to create a Virtual Machines folder.
  - a. Start File Explorer.
  - b. Navigate to the drive where you would like to store your virtual machine files.
  - c. Click **New Folder** and enter a name such as “Virtual Machines” for the new folder name and then close File Explorer.



Record the path for future use.

This ends the activities for chapter 1. You can now close your browser and shutdown your computer or continue to chapter 3.