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Lab – Install a Linux Virtual Machine (Optional)

Objectives

Part 1: Prepare a Computer for Virtualization

Part 2: Create a Virtual Machine

Scenario

Personal computing power and resources have increased tremendously over the last 5 to 10 years. One of the benefits of having access to multicore processors and large amounts of RAM memory is the ability to use virtualization on a personal computer. With virtualization, a user can run multiple virtual computers on one physical computer or server. Virtual computers that run within a physical computer system are called virtual machines. Today entire computer networks are being implemented where all of the end user computer stations are actually virtual machines run off of a centralized server. Anyone with a modern computer and operating system has the ability to run virtual machines from the desktop.

Part 1: Prepare a Computer for Virtualization

In Part 1, you will download and install virtualization software, and acquire a bootable image of a Linux distribution.

Step 1: Download and install the free VMware player.

There are two excellent virtualization programs that you can download and install for free, VMware Player and VirtualBox. In this lab, you will use the VMware player.

a. Go to http://vmware.com, hover the cursor over **Downloads**, and search for **Free Product Downloads**.

b. Under **Free Product Downloads**, click **Player**.

The VMware Player has 32-bit and 64-bit versions for Windows and Linux. To download the software, you must register a free user account with VMware.

Note: The Linux version of VMware Player might work on Mac OS X; if not, http://virtualbox.org has a free version of its VirtualBox software that will run on Mac OS X.

c. When you have downloaded the VMware Player installation file, run the installer and accept the default installation settings.

Step 2: Download a bootable image of Linux.

You need an operating system to install on your virtual machine's virtual hardware. Linux is a suitable choice for an operating system, because most of the distributions are free to download and run. It also allows you to explore an operating system that might be unfamiliar to you.

a. To download Linux, you first must select a distribution such as Mint, Ubuntu, Fedora, Suse, Debian, or CentOS. (There are many others to choose from.) In this lab, the instructions follow an installation of Linux Mint.

b. Go to http://linuxmint.com, hover over the **Download** button, and click **Linux Mint 16** (or current version number).

c. Scroll down the page until you see the version of the Mint code name, **Cinnamon** (or the current code name). Choose either the 32-bit or 64-bit version, depending on your current operating system platform, and click the link.

d. A new web page will appear. Select a download mirror site from which to download the operating system. Click a mirror site to activate the Linux file download. When prompted by the browser, choose to save the Linux .iso file to a local directory.

e. When the file has finished downloading, you should have a Linux Mint .iso bootable image.

Part 2: Create a Virtual Machine

In Part 2, using the VMware Player, you will create a virtual machine and customize its virtual hardware. Then, using the Linux Mint .iso file that you downloaded in Part 1, you will install the Linux Mint operating system on the virtual machine.

Step 1: Create a virtual computer and customize the virtual hardware.

a. Open **VMware Player**, and click **Create a New Virtual Machine**.

b. A new window will appear. Select **I will install the operating system later. The virtual machine will be created with a blank hard disk** option. Click **Next**.

c. A new window will appear. Select **Linux** as the guest operating system. Under **version**, you may notice that Mint is not listed. In this case, select an alternate Linux distribution, one that is closely related to Mint (like Ubuntu). Lastly, select either the 32-bit or 64-bit version and click **Next**.

d. A new window will appear. Select a name and storage location for the virtual machine.

e. A new window will appear. Select the maximum size of the virtual hard drive storage. You can also decide whether or not to store the virtual hard drive in a single file or in multiple files.

f. When a new window appears, click **Finish** to finish creating the virtual machine hardware, or click **Customize Hardware** to customize the virtual hardware. For example, you can specify the amount of RAM, how many CPU cores you want, and add additional drives and peripheral components (see video tutorial).

g. When you have customized and completed the process, you are now ready to run your virtual machine and install an operating system.

Step 2: Install the Linux operating system on the virtual computer.

To install from an .iso bootable image file, complete the following steps:

a. In VMware Player, click **Edit virtual machine settings**. If you have multiple virtual machines created, you must first select which one you intend to edit.

b. In the pop-up window, under the **Hardware** tab, select **CD/DVD (SATA)**, and on the right side (under **Connections**), select the **Use ISO image file** option, and click **Browse** to search through your file system for the Linux Mint .iso image file downloaded in Part 1.

Selecting the Linux .iso file causes it to be automatically mounted to the CD/DVD drive when the virtual machine boots, which, in turn, causes the system to boot and run the Linux installation image.

c. Select **Network Adapter**, and click **OK**.

The network adapter is currently set to NAT mode, which allows your virtual machine to access the network through the host computer system by translating all Internet requests through the VMware player, much like a gateway router. This gives your virtual machine a private network address separate from your home network.

(Optional) To have your virtual machine on the same network as the computer hosting the virtual machine, select the **Bridged** option and click **Configure Adapters** to identify to which physical network adapter the virtual machine should bridge.

Note: This is especially important on laptops that have both wireless and wired network adapters that can connect to the network.

    d.   When you are finished click **OK**.

    e.   Click **Play virtual machine** to launch your virtual machine and boot to Linux.

         When the boot process has completed you should be presented with a Linux Mint desktop.

    f.   (Optional) To permanently install Linux Mint on the virtual machine hard disk drive, on the desktop, double-click the **Install Linux Mint disk** icon and follow the installation procedure (see video).

         During the installation, you will be presented with a warning message that installing to the drive will erase everything on the disk drive; this refers to the virtual disk drive, not the host computer physical disk drive.

    g.   When you have finished the installation procedure, you should have a Linux Mint virtual machine that you can run in a window alongside your host computer system.