Kamilimu cybersecurity track: Cohort 9

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Preparing for Your Cybersecurity Training: Installing a Linux OS in a Virtual Machine

Instructor's Notes: This worksheet provides a step-by-step guide for installing a Linux operating system within a virtual machine on your Windows computer. If you are already running a Linux distribution on your primary computer, you can skip these installation instructions and be ready for the first class. For all Windows users, please follow these instructions carefully to prepare your system for the cybersecurity training.

This worksheet will guide you through the process of setting up a Linux operating system within a virtual machine on your Windows computer. This will provide a safe and isolated environment for you to practice cybersecurity techniques during your training. You have the option to choose between **Kali Linux** and **Parrot OS**.

Part 1: Choosing Your Linux Distribution

You have two excellent Linux distributions specifically designed for cybersecurity and penetration testing:

- **Kali Linux:** A widely recognized and powerful distribution with a vast array of pre-installed security tools. It's a great choice for those wanting a comprehensive toolkit right out of the box.
    - **Official Download Page:** https://www.kali.org/downloads/
- **Parrot OS:** Another robust distribution focused on security, privacy, and development. It offers different editions tailored to various needs, including a Security Edition with a strong set of security tools.
    - **Official Download Page:** https://parrotsec.org/download/

Take a moment to visit the official download pages of both Kali Linux and Parrot OS. Read a bit about each to decide which one you'd prefer to use for your training.

Part 2: Installing a Virtualization Environment

A virtualization environment allows you to run another operating system (like Kali Linux or Parrot OS) within your existing Windows system. We will cover two popular options: VirtualBox and VMware Workstation Player (free for personal use).

Option A: VirtualBox

VirtualBox is a free and open-source virtualization software that is easy to use.

1. **Download VirtualBox:**
   - Go to the official VirtualBox download page: https://www.virtualbox.org/wiki/Downloads
   - Look for the link that says "**Windows hosts**" and click on it to download the VirtualBox installer.
2. **Install VirtualBox:**
   - Once the download is complete, double-click the downloaded .exe file to start the installation.
   - Follow the on-screen instructions. You can usually accept the default settings.
   - You might see some warnings about network interfaces during the installation. This is normal, so click "Yes" or "Install" to continue.
   - Once the installation is finished, click "Finish" to launch VirtualBox.

Option B: VMware Workstation Player

VMware Workstation Player is another powerful virtualization software that is free for personal, non-commercial use.

1. **Download VMware Workstation Player:**
   - Go to the official VMware Workstation Player download page: https://www.vmware.com/products/workstation-player/workstation-player-evaluation.html[1]
   - Click on the "**Download Now**" button under the "Workstation Player for Windows" section. You might need to create a free account or log in to download.

2. **Install VMware Workstation Player:**
   - Once the download is complete, double-click the downloaded .exe file to start the installation.
   - Follow the on-screen instructions. You can usually accept the default settings.
   - You will likely need to agree to the license terms.
   - Once the installation is finished, click "Finish" to launch VMware Workstation Player.

Part 3: Downloading Your Chosen Linux OS

Now that you have chosen your Linux distribution and installed a virtualization environment, you need to download the Linux OS image file (usually in .iso format).

1. **Go back to the official download page of your chosen Linux distribution (from Part 1).**
    - **Kali Linux:** https://www.kali.org/downloads/
    - **Parrot OS:** https://parrotsec.org/download/
2. **Look for the recommended version for virtual machines.** Both Kali Linux and Parrot OS often provide specific images optimized for virtual environments. These are usually labeled as "VirtualBox Image" or "VMware Image".
    - **If you chose VirtualBox:** Download the .ova file if available. This is a pre-configured virtual machine image that can be easily imported into VirtualBox. If only an .iso file is available, download that.
    - **If you chose VMware:** Download the .vmx and .vmdk files if available (usually in a .zip or .7z archive that you'll need to extract). If only an .iso file is available, download that.
3. **If only an .iso file is available:** You will use this file to create a new virtual machine in VirtualBox or VMware.

Part 4: Installing Linux in VirtualBox

Follow these steps if you chose VirtualBox:

1. **Launch VirtualBox.**
2. **Click on the "New" button** in the VirtualBox Manager window.
3. **Name your virtual machine:** Choose a descriptive name like "Kali Linux Training" or "Parrot OS Security".
4. **Select the "Type":** Choose "Linux".
5. **Select the "Version":**
    - For Kali Linux, choose "Debian (64-bit)".
    - For Parrot OS, choose "Debian (64-bit)" or a more specific Parrot OS version if listed.
6. **Click "Next".**
7. **Allocate Memory Size (RAM):** The recommended amount will depend on your computer's RAM. A good starting point is 2048 MB (2 GB) or 4096 MB (4 GB) if your system has enough. **Do not allocate more than half of your computer's total RAM.**
8. **Click "Next".**
9. **Hard disk:**
    - **If you downloaded an .ova file:** Skip to step 14. You will import the appliance later.
    - **If you downloaded an .iso file:** Choose "Create a virtual hard disk now" and click "Create".
10. **Hard disk file type:** Choose "VDI (VirtualBox Disk Image)" and click "Next".
11. **Storage on physical hard disk:** Choose "Dynamically allocated" and click "Next". This allows the virtual hard disk to grow as needed.
12. **File location and size:** Choose a location to save the virtual hard disk file and set a reasonable size (e.g., 20-50 GB). Click "Create".
13. **Your new virtual machine will now appear in the VirtualBox Manager.** Select it and click the "Settings" button.
14. **Go to the "Storage" tab.**
15. **Under the "Controller: IDE" or "Controller: SATA" section, you should see an empty disk icon labeled "Empty". Click on it.**
16. **On the right side, under "Attributes", click on the CD/DVD icon next to "Optical Drive".**
17. **Choose "Choose a disk file..."** and browse to the .iso file you downloaded in Part 3. Select it and click "Open".
18. **Click "OK" to close the Settings window.**
19. **Select your virtual machine again in the VirtualBox Manager and click the "Start" button (the green arrow).**
20. **The virtual machine will boot from the .iso file.** Follow the on-screen instructions to install Kali Linux or Parrot OS. These instructions will typically involve choosing your language, keyboard layout, setting up a username and password, and partitioning the virtual hard disk. **When partitioning, it's usually safe to choose the guided option to use the entire virtual disk.**
21. **Once the installation is complete, the virtual machine will likely ask you to reboot.** After rebooting, you might need to go back into the Virtual Machine Settings -> Storage and remove the .iso file from the virtual optical drive to prevent booting from it again.

Part 5: Installing Linux in VMware Workstation Player

Follow these steps if you chose VMware Workstation Player:

1. **Launch VMware Workstation Player.**
2. **Click on "Create a New Virtual Machine".**
3. **Select "Installer disc image file (iso)":** Click "Browse..." and select the .iso file you downloaded in Part 3. VMware might automatically detect the operating system. Click "Next".
4. **Guest Operating System:**
    - For Kali Linux, choose "Linux" and then "Debian 11.x 64-bit" or a similar recent Debian version.
    - For Parrot OS, choose "Linux" and then "Debian 11.x 64-bit" or a more specific Parrot OS version if listed.
5. **Click "Next".**
6. **Virtual Machine Name:** Choose a descriptive name like "Kali Linux Training" or "Parrot OS Security".
7. **Location:** Choose a location to save the virtual machine files. Click "Next".
8. **Disk Size:** Specify the maximum disk size for your virtual machine (e.g., 20-50 GB). Choose "Store virtual disk as a single file" for better performance. Click "Next".
9. **Ready to Create Virtual Machine:** Review the settings. Click "Customize Hardware..." if you want to adjust the RAM (Memory) – a good starting point is 2048 MB (2 GB) or 4096 MB (4 GB) if your system has enough. **Do not allocate more than half of your computer's total RAM.**
10. **Click "Close" and then "Finish".**
11. **Your new virtual machine will appear in the VMware Workstation Player library.** Select it and click "Play virtual machine".
12. **The virtual machine will boot from the .iso file.** Follow the on-screen instructions to install Kali Linux or Parrot OS. These instructions will typically involve choosing your language, keyboard layout, setting up a username and password, and partitioning the virtual hard disk. **When partitioning, it's usually safe to choose the guided option to use the entire virtual disk.**
13. **Once the installation is complete, the virtual machine will likely ask you to reboot.**

Congratulations! You should now have either Kali Linux or Parrot OS installed within a virtual machine on your Windows computer. You are now one step closer to starting the cybersecurity track course!

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