CS 458 Spring 2023 - Lab 1: Lab Environment Setup[1]

No Submission is required for this Lab

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1. Overview

SEED Labs are hands-on Labs for Security Education. from Syracuse University. The SEED lab (`http://www.cis.syr.edu/~wedu/seed/`) environment includes VirtualBox, Linux, and Minix. This environment is used for all the projects in this course, and getting familiar with them is critical.

2. Objective

The goal of this lab is to install, setup, and get familiar with the lab environment, which includes VirtualBox and and a pre-built virtual machine images (Ubuntu 16.04). This environment is used for all the assignments in this course.

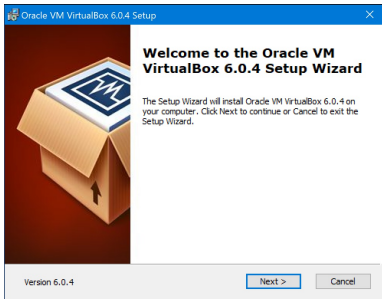
Students just need to download the pre-built virtual machine image to their personal computers. There is no need for a physical lab space or dedicated computers. All the software we use for the lab environment setup is open-source and free.

3. How to Setup a SEED Lab Environment

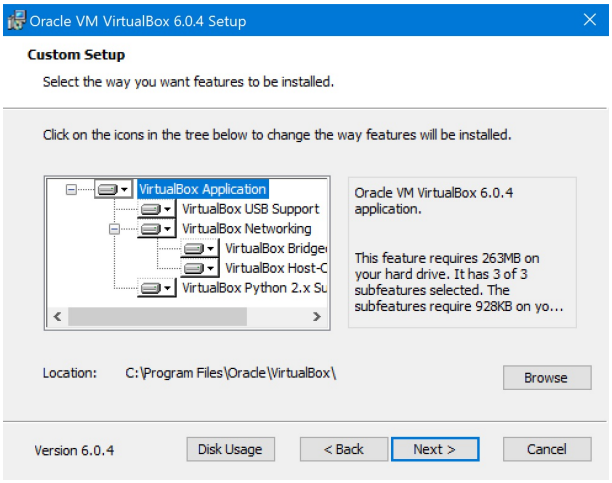
3.1. **Install Virtual Machine Software (VirtualBox).** According to Margaret Rouse (Rouse, 2015), "A virtual machine (VM) shares physical hardware resources with other users but isolates the operating system or application to avoid changing the end-user experience".
The SEED environment can be created using virtual machine software, such as VMware, Virtual PC, and VirtualBox. These softwares are free. VirtualBox, used in this course, is an open-source virtual machine software, and it is free.

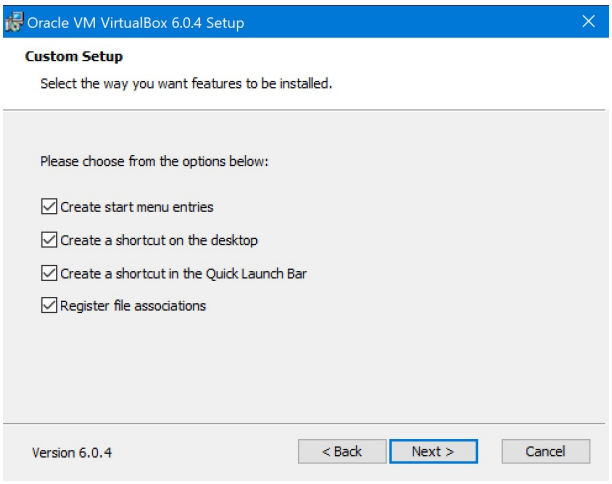
Task 1.1 Download the VirtualBox platform packages from the virtual box website (`https://www.virtualbox.org/wiki/Downloads`). You need to choose the VirtualBox software based on your operating system. Although our instructions are only for VirtualBox, the pre-built VM images can also run on VMWare.

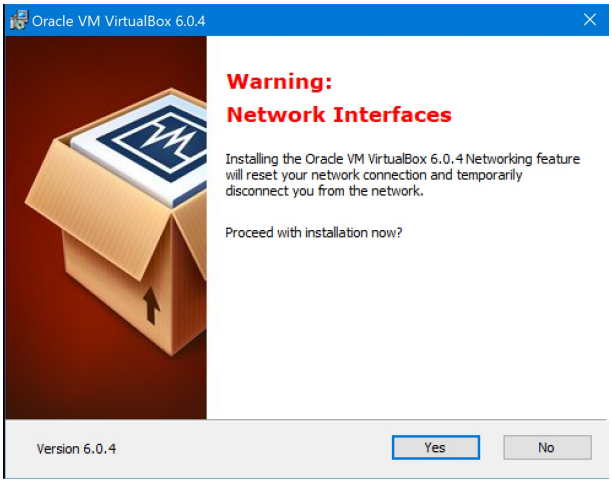
Task 1.2 Install the VirtualBox by following the basic procedures of the installation as follow:

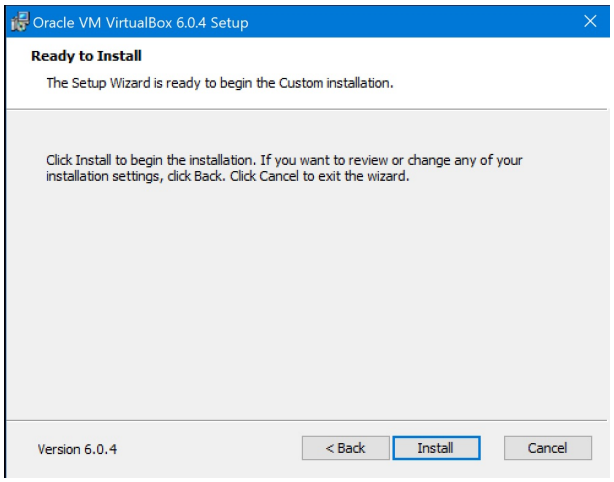


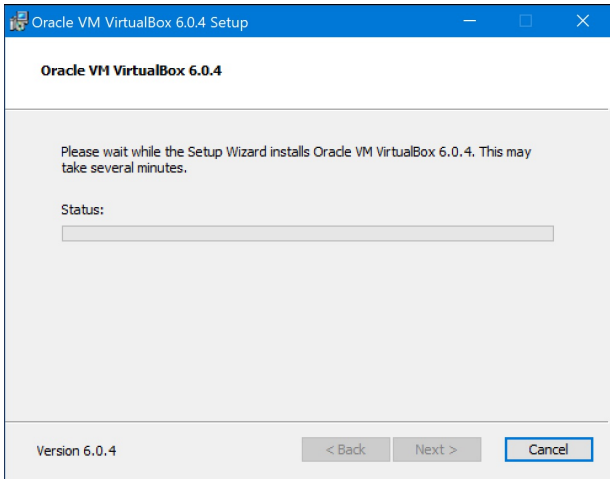
[1] Credit: SEEDLabs, `https://www.virtualbox.org/manual/ch01.html#intro-installing`


Oracle VM VirtualBox 6.0.4 Setup
Custom Setup
Select the way you want features to be installed.
Click on the icons in the tree below to change the way features will be installed.
VirtualBox Application
VirtualBox USB Support
VirtualBox Networking
VirtualBox Bridge
VirtualBox Host-C
VirtualBox Python 2.x Su
Oracle VM VirtualBox 6.0.4 application.
This feature requires 263MB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 928KB on yo...
Location:
C:\Program Files\Oracle\VirtualBox\
Browse
Version 6.0.4
Disk Usage
< Back
Next >
Cancel


Oracle VM VirtualBox 6.0.4 Setup
Custom Setup
Select the way you want features to be installed.
Please choose from the options below:
Create start menu entries
Create a shortcut on the desktop
Create a shortcut in the Quick Launch Bar
Register file associations
Version 6.0.4
< Back
Next >
Cancel

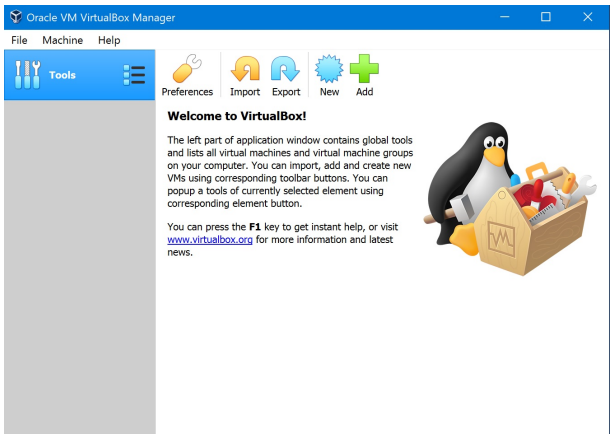

Oracle VM VirtualBox 6.0.4
Warning:
Network Interfaces
Installing the Oracle VM VirtualBox 6.0.4 Networking feature will reset your network connection and temporarily disconnect you from the network.
Proceed with installation now?
Version 6.0.4
Yes
No


Oracle VM VirtualBox 6.0.4 Setup
Ready to Install
The Setup Wizard is ready to begin the Custom installation.
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
Version 6.0.4
< Back
Install
Cancel


Oracle VM VirtualBox 6.0.4 Setup
Oracle VM VirtualBox 6.0.4
Please wait while the Setup Wizard installs Oracle VM VirtualBox 6.0.4. This may take several minutes.
Status:
Version 6.0.4
< Back
Next >
Cancel


Oracle VM VirtualBox 6.0.4 Setup
Oracle VM VirtualBox 6.0.4 installation is complete.
Click the Finish button to exit the Setup Wizard.
Start Oracle VM VirtualBox 6.0.4 after installation
Version 6.0.4
< Back
Finish
Cancel

- After installation, you can start VirtualBox as follows:
  - On a Windows host, in the Programs menu, click on the item in the VirtualBox group. On some Windows platforms, you can also enter VirtualBox in the search box of the Start menu.
  - On a Mac OS X host, in the Finder, double-click on the VirtualBox item in the Applications folder. You may want to drag this item onto your Dock.
- When you start VirtualBox for the first time, a window like the following is displayed:



This window is called the VirtualBox Manager. The left pane will later list all your virtual machines. Since you have not yet created any virtual machines, this list is empty. The Tools button provides access to user tools, such as the Virtual Media Manager.

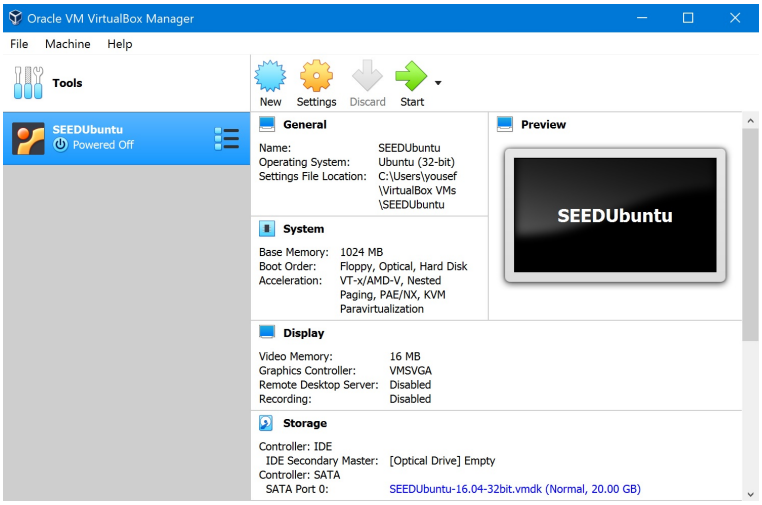
3.2. **Install the Pre-built Virtual Machine Images (Ubuntu).** All the SEED labs should be conducted in our pre-built virtual machine image that have all the necessary tools, software, and libraries that are needed by the SEED labs. Students just need to download the VM, and run it using VirtualBox (or VMWare). In this course, we use SEED Ubuntu16.04 VM (32-bit). This VM was built in June 2019.

Task 3.1 Download the image from one of the following servers:
- Google Drive: SEEDUbuntu-16.04-32bit.zip
- DigitalOcean: SEEDUbuntu-16.04-32bit.zip
- MD5 value: 12c48542c29c233580a23589b72b71b8

Task 3.2 Unzip SEEDUbuntu-16.04-32bit.zip and you should be able to see a folder that contains the VM files.

Task 3.3 Follow **this document** (`https://seedsecuritylabs.org/Labs_16.04/Documents/SEEDVM_VirtualBoxManual.pdf`) to run and configure the VM on VirtualBox.

3.3. **Run SEED VM.** If there is no error(s), your VM will be created successfully and you can see the SEEDUbuntu OS on the left panel of the VirtualBox manager.



In order to start this VM, we click on start button.

- You will primarily use the following account:
  - User ID: **seed**
  - Password: **dees**
- You normally don't need to log into the root account:
  - User ID: **root**
  - Password: **seedubuntu**

Now you are ready to experiment the labs in the SEEDLabs.

NOTE

- You are encouraged to work on your own computer- install VirtualBox, download and set up the Ubuntu 16.04 virtual machine, and do your work there.
- Please **DO NOT** update the Ubuntu OS in the VM. There is no guarantee that the labs will still work if such an update is performed.

4. Submission

No submission is required for this lab