

QuickStart
Cybersecurity Bootcamp
Project A Tips and Tricks

How to Install VirtualBox

1. Download and install Oracle VirtualBox from here, choosing all defaults:
<https://www.virtualbox.org/wiki/Downloads>
2. Download and install the Oracle VM VirtualBox Extensions Pack from same link above.
3. Start VirtualBox and check for and install updates.
4. Bookmark the VirtualBox Manual from here: <https://www.virtualbox.org/manual/>

Read the manual for installing new virtual machines (Hint: you will be importing machines).

Enable Virtualization on Your Computer

1. Enable virtualization (vt-x) in your system BIOS. You will have to turn to the Internet to learn how to do this in the BIOS of your particular computer.
2. Windows 10 users: click setting, then choose Apps, then choose Programs and Features, then choose "Turn Windows Features on or off". Turn on "Virtual Machine Platform" and turn off any other "virtual" or Hyper-v features.
3. Windows 10 users: If some or all of your VMs will not load or start correctly, perform the following steps:
 - a. Click start, type command. Right-Click the Command Prompt app and choose "Run as Administrator".
 - b. Enter this command: `bcdedit /set hypervisorlaunchtype off`
 - c. Enter this command: `shutdown -s -t 2`
 - d. Turn your computer back on.

You are supplied with the virtual machines you will need for this project, except for Kali Linux which you will download and install. The supplied virtual machines are:

- Router/FW – this machine separates and controls communications between the 3 subnets. It is also the DHCP server for the Trusted network.
- DNS Server – a private server for the `www.seclab.net` domain.
- Web Server – a private server for this company.
- CEO PC

The virtual machines are provided as VirtualBox Appliances. They are available for download in your Dashboard for Project A.

How to Import a VirtualBox Appliance

1. Start VirtualBox.
2. Under File, choose Import.

3. Navigate to OVA file and choose Open.
4. Under MAC Address Policy, change to: "include all network adapter MAC addresses."
5. Choose Next, then Next.
6. Choose Import.

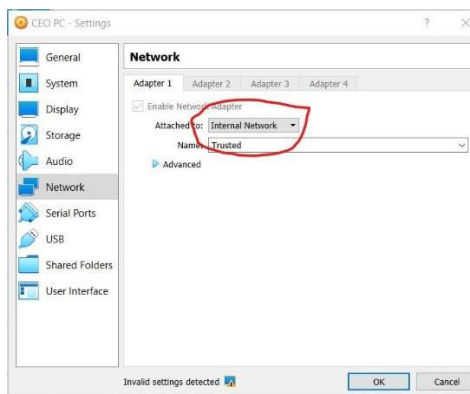
How to Install Kali Linux

1. Download the latest copy of Kali Linux for **VirtualBox** here: <https://www.offensive-security.com/kali-linux-vm-vmware-virtualbox-image-download/#1572305786534-030ce714-cc3b>
2. Import the Kali appliance. Connect the interface to the Untrusted Network and rename it (e.g. Kali-Untrusted).
3. Repeat steps 1 & 2 for the Trusted and DMZ networks.

Network Connections

VirtualBox offers several different types of interfaces for virtual machines. The default is NAT, which allows your VM to access the Internet. VB acts like a NAT router for the VM

The project environment uses the "Internal" type of interface. This means it is private and not connected to the Internet.



Use command line tools to determine IP configurations on each computer. Be sure you can determine the default gateway for each computer. With Linux, this requires 2 different commands.

Please do not connect this network and the virtual machines to the public Internet through another type of network interface. These versions are older (purposely so) and can become infected with malware.

Note: Always start the Router-FW first, followed by the DNS and Web servers. Then you can start the CEO PC and Kali machines to work on the project. Failure to start the network resources before starting the end-user PCs will result in non-working machines.

Enable Promiscuous Mode for Kali VMs

1. Click on machine in VB
2. Choose Settings
3. Choose Network
4. Click Advanced
5. Change Promiscuous mode to "Allow VMs"

Shutting Down Linux

Here is the best way to shutdown the servers used in this network:

For both the Web server and DNS server, enter the following command when logged in as root:

```
shutdown -h now
```

Once the system has halted, you can close the machine window

For the Router-FW, choose 6 from the menu and confirm it.