**Lab #1**

**CECS 378 – Spring 2020 Cappel**

**Due:** Tuesday, February 11 prior to lab (6 PM)

**The hands-on labs in this class will be run using virtual machines running within Oracle VirtualBox on your personal laptop. We will need to setup VirtualBox on your personal laptop along with several virtual machines, which we will document here.**

**Step 1 – Install Oracle VirtualBox**

The Oracle VirtualBox website can be found here: <https://www.virtualbox.org/>

Perform the following steps to install Oracle VirtualBox:

1. Access the VirtualBox website listed above.
2. Select the Downloads link on the left side of the web page.
3. Select the VirtualBox older builds link and then select VirtualBox 6.0 (active maintenance).
4. Select appropriate host (Windows or OS X) in the VirtualBox 6.0.4 section.

**Note:** VirtualBox 6.0.4 must be used to be compatible with the SEEDLabs VM we will be using.

1. Select Run at the prompt. (This will download the binaries and start the setup wizard)
2. Select Next, at the Setup Wizard screen.
3. Select Next, at the Custom Setup screen. (Leave the default install directory)
4. Select Next, at the Custom Setup screen. (Leave all options selected)
5. Select YES, at the Network Warning screen and proceed with the installation.
6. Click Install, at the Ready to Install screen.
7. Select Yes, at the do you want this application to make changes prompt.
8. Select Install, if you receive a Windows Security prompt. (Always trust software from “Oracle”)
9. Select Finish, at the installation complete screen.
10. Select OK at the new version notification but DO NOT upgrade to VirtualBox 6.0.14.

VirtualBox 6.0.4 should now be installed.

**Step 2 – Install the SEEDLabs Virtual Machines**

Some of the labs we will be using come from the SEEDLabs website which can be accessed here:

<https://seedsecuritylabs.org/index.html>

The SEED labs come preconfigured and assume you are using their custom-built virtual machines that leverage a 32-bit version of Ubuntu 16.04.

Perform the following steps to install three SEED lab virtual machines:

1. Access the SEEDLabs website listed above.
2. Select the Lab Setup tab at the top of the page.
3. Select the SEEDUbuntu-16.04-32bit.zip file from the Syracuse University download location.
4. Select Save at the What do you want to do prompt. (Be patient as it is a large file)
5. Unzip (Extract All) the SEEDUbuntu-16.04-32bit.zip file & you should see a folder that contains the VM files.
6. Select the “this document” link on the SEEDLabs web site to run and configure the VM on VirtualBox. **Note:** Please name the first virtual machine SEEDUbuntu1 when completing Step 2 in the SEED Document.
7. Complete the steps in Appendix B and D on the SEEDUbuntu1 virtual machine.
8. Change the time zone on your SEEDUbuntu1 virtual machine to reflect Pacific time (Los Angeles)
9. Shutdown the SEEDUbuntu1 virtual machine.
10. Next complete the steps in Appendix A to create the next two VM’s (name them SEEDUbuntu2 and SEEDUbuntu3)

The three SEED labs virtual machines should now be installed.

**Step 3 – Install a Windows Virtual Machine**

Some of the labs we will be doing will require a Windows virtual machine which you should be able to access from the following website:

Perform the following steps to install the Windows 10 v1809 virtual machine:

1. Access the Microsoft website for students.
2. Select the Windows 10 Education v1809 64-bit image.
3. Select Save at the What do you want to do prompt. (Be patient as it is a large file)
4. Once the iso file has been downloaded, open the VirtualBox Manager and Select New.
5. Enter Windows10 for the virtual machine Name, Select Microsoft Windows for the Type, Select Windows 10 (64-bit) for the Version and Select Next.
6. Adjust the Memory size to 2048 MB and Select Next.
7. Select Create a virtual hard disk now (default) and Select Create.
8. Select VDI (default) and Select Next.
9. Select Dynamically allocated (default) and Select Next.
10. Adjust the File size to 50 GB and Select Create.
11. The virtual machine template is now created, you should see the Windows10 vm Powered Off.
12. Highlight the Windows10 vm and Select Settings.
13. Select the Advanced tab and Change Shared Clipboard and Drag’n’Drop to Bidirectional.
14. Select System | Processor & change number of Processor(s) to 2, Select Enable PAE/NX Option.
15. Select Storage, Select the Empty setting under Controller: IDE, Select the icon that looks like a CD-ROM at the far right (Optical Drive: setting), Select Choose Virtual Optical Disk File, Select the en\_windows\_10\_consumer\_edition\_version\_1809\_updated\_sept\_2018\_x64\_dvd\_491ea967 ISO file we downloaded in step 2, Select OK.
16. Start the Windows10 virtual machine in the VirtualBox Manager.
17. At the Windows Setup screen, Select the Language (English) , Time (English) , and Keyboard (US) settings, Select Next.
18. At the Windows Setup screen, Select Install Now.
19. At the Activate Windows screen, Enter 9Q6NV-XTRDJ-MQQ37-F7Q7W-CPQFM for the product key, Select Next.
20. Accept the licensing terms, Select Next.
21. At the Which type of installation do you want?, Select Custom: Install Windows Only (Advanced)
22. At the Where do you want to install Windows?, Select Next.
23. Ensure the United States is selected at the Region screen, Select Yes.
24. Ensure the US keyboard layout is selected, Select Yes.
25. At the enable second keyboard screen, Select Skip.
26. At the sign in with Microsoft screen, Select Domain join instead at the bottom of screen.
27. At the who’s going to use this PC? Screen, Enter a userid (do not forget this ID) and Select
28. At the create a super memorable password Screen, Enter a password (do not forget this PW) and Select Next.
29. At the confirm the password Screen, re-enter the password and Select Next.
30. Create your three security questions for this PC.
31. At the make Cortana your personal assistant? Screen, Select Decline.
32. At the Do more with devices with activity history screen, Select No.
33. At the choose privacy settings for your device screen, Select Accept.

**Step 4 – Install a Kali Linux Virtual Machine**

Some of the labs we will be doing will require a Kali Linux virtual machine which can be accessed here: <https://www.kali.org/downloads/>

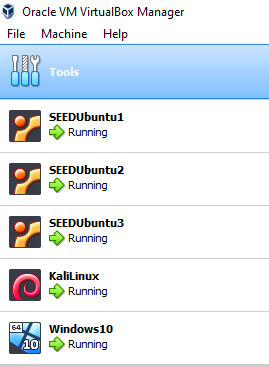
Perform the following steps to install the Kali Linux virtual machine:

1. Access the Kali Linux website listed above.
2. Select the Kali Linux 32-bit image.
3. Select Save at the What do you want to do prompt. (Be patient as it is a large file)
4. Once the iso file has been downloaded, open the VirtualBox Manager and Select New.
5. Enter KaliLinux for the virtual machine Name, Select Linux for the Type, Select Debian 32-bit for the Version and Select Next.
6. Adjust the Memory size to 2048 MB and Select Next.
7. Select Create a virtual hard disk now (default) and Select Create.
8. Select VDI (default) and Select Next.
9. Select Dynamically allocated (default) and Select Next.
10. Adjust the File size to 20 GB and Select Create.
11. The virtual machine template is now created and you should see the KaliLinux vm Powered Off.
12. Highlight the KaliLinux vm and Select Settings.
13. Select the Advanced tab and Change Shared Clipboard and Drag’n’Drop to Bidirectional.
14. Select System | Processor & change number of Processor(s) to 2, Select Enable PAE/NX Option.
15. Select Storage, Select the Empty setting under Controller: IDE, Select the icon that looks like a CD-ROM at the far right (Optical Drive: setting), Select Choose Virtual Optical Disk File, Select the kali-linux-2019.4-i386 ISO file we downloaded in step 2, Select OK.
16. Start the KaliLinux virtual machine in the VirtualBox Manager.
17. At the Boot Menu, Select Graphical Install and Enter.
18. At the Select a language page, Select English and Continue.
19. At the Select your location page, Select United States and Continue.
20. At the Configure the keyboard page, Select American English and Continue.
21. At the Configure the network page, Change the Host name: to KaliLinux and Select Continue.
22. At the Configure the network page, Leave the Domain name: blank and Select Continue.
23. At the Setup users and passwords page, Assign a password (i.e., KaliLinux) for the root account & Select Continue. **Note:** DO NOT forget this password - it will be needed to access this virtual machine.
24. At the Configure the clock page, Select Pacific and Continue.
25. At the Partition disks page, Select Guided – use entire disk (default) and Select Continue.
26. At the Partition disks page, You should only have one item listed (default) and Select Continue.
27. At the Partition disks page, Select the All files in one partition (default) and Select Continue.
28. At the Partition disks page, Select Finish partitioning (default) and Select Continue.
29. At the Partition disks page, At the Write the changes to disks?, Select Yes and Continue.
30. At the Configure the package manager page, Select Yes (default) and Continue.
31. At the Configure the package manager page, Leave HTTP proxy information blank & Continue.
32. At the Install the BRUB boot loader on a hard disk, Select Yes (default) and Continue.
33. At the Install the GRUB loader on a hard disk, Select the /dev/sda option and Select Continue.
34. At the Finish the Installation page, Select Continue.

The Windows 10 virtual machine should now be installed.

**Step 5 – Conclusion**

You should power off all your virtual machines when not in use!



And close the Oracle VirtualBox Manager application.

This will ensure your laptop is not negatively impacted by the lab environment.

**Submit a screen shot (like the one above) of your *running* virtual machines using the snipping tool.**

**Post a file containing your screen shot in dropbox on BeachBoard to validate you performed the Lab1.**

**Step 6 – SANS News Bites Configuration**

**We will often discuss current events going on related to computing security during our lab sessions. I find that the SANS News Bites are an excellent source revealing these current events. They produce short, concise reports twice a week and I am asking that you subscribe as a part of our Lab configuration for this semester.**

The SANS home page can be found here: <https://www.sans.org/>

Perform the following steps to subscribe to the SANS News Bites newsletter:

1. Access the SANS website listed above, Select the Login button at the top of the page.
2. If you do not have a SANS account, Select Create a SANS Account and follow the instructions.
3. Once you have an account, Login to the SANS web site.
4. Select the Resources menu, Select Newsletters.
5. On the right side of the page, enter your email address, your country, and select SANS News bites.
6. Once you have that setup, you should receive the News bites twice a week.

**We will use these quite often!!**

**You may consider taking some of the SANS courses once you are in industry - they are excellent!**