Adversarial Resilience - Assessing Infrastructure Security

Project Scenario

Adversarial Resilience - Assessing StaticSpeed's Infrastructure Security Posture Report
Your employer, NuttyUtility, is a company in the technology sector with cutting edge software that is known to be targeted by foreign adversaries and has recently acquired a new company, StaticSpeed. Your job is to assess the security posture of the newly acquired company.

Specifically, your boss wants to know the current status of assets inside the perimeter (desktops, servers, remote access, firewalls, applications). Use the given information about the systems currently in place to understand better the possible vulnerabilities and exposures at this new company.

Upon an initial inspection as part of the acquisition, we suspect these systems have not been kept up to date. There is a likelihood that the servers and desktops at this location are running vulnerable applications and misconfigurations that may lead to compromises either by rogue insiders or external malicious actors. If this is the case, this would be an unacceptable scenario as we plan to combine StaticSpeeds systems with our extended network.

Your goal is to establish what assets are in place, perform a security assessment based on industry security controls and best practices, and execute a vulnerability assessment against servers and desktop assets. The result of this assessment will be a report that you must present to your stakeholders. They will relay your findings to the infrastructure team. Together they will decide if this new company is ready to be integrated or if appropriate controls and mitigations need to be in place before this happens.

Windows Project VM Setup

Getting Started

First, download and set up the virtual machines if you have not already done so.

NOTE: These VMs are used in both the course and the project. If you have already set them up, you do not need to do so again.

Step 1: Download the two (.ova) virtual machines to your computer.

- Ubuntu1804student.ova
- win10ustudent.ova

It will take some time to download. Start with the Ubuntu1804student.ova machine, then download the win10ustudent.ova.

Step 2: Download & Install Oracle VirtualBox software, which will be used as our virtualization tool for loading the OVA file downloaded above. You can download it at Oracle VirtualBox Downloads. Please follow the instructions for installing Virtual Box from their website.

NOTE: Troubleshooting

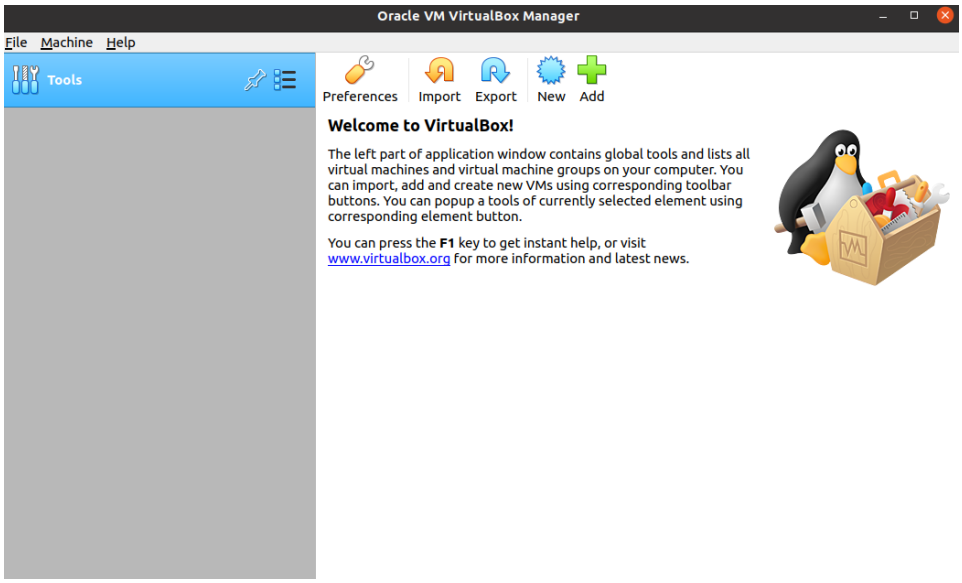
If the VM aborts shortly after startup, try starting VirtualBox using the terminal:

sudo Virtualbox

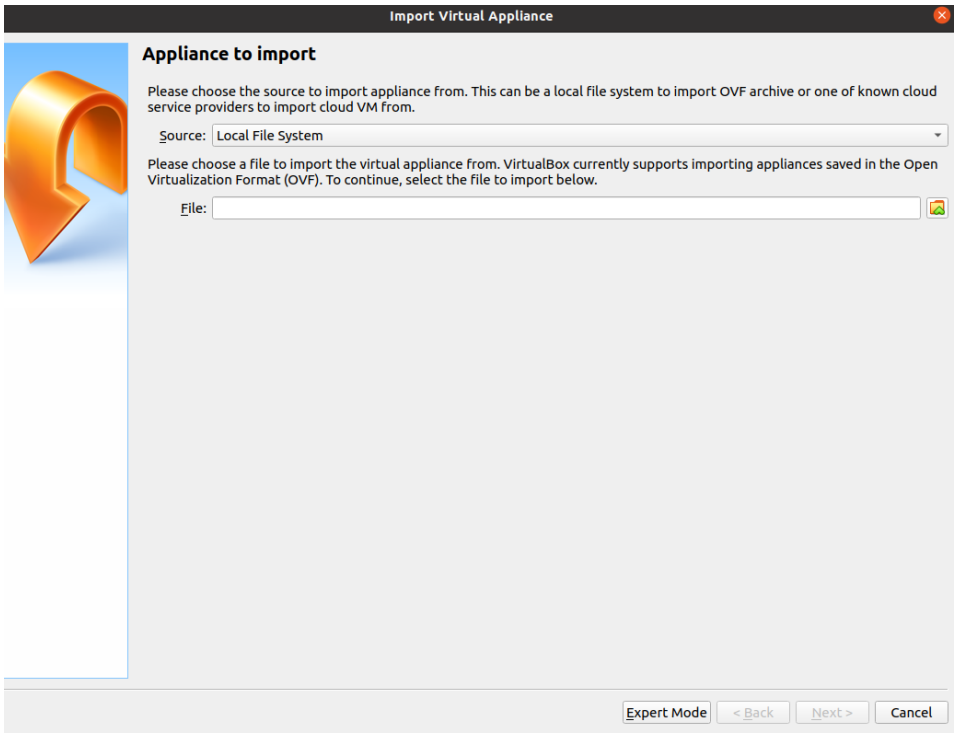
If that doesn't work, try these steps:

Go to File > Import Appliance > Expert Mode >. Uncheck the box for Import hard drives as VDI Import Security Onion OVA Right-click VM in the manager. Go to Settings > Display > Screen > Increase the Video Memory

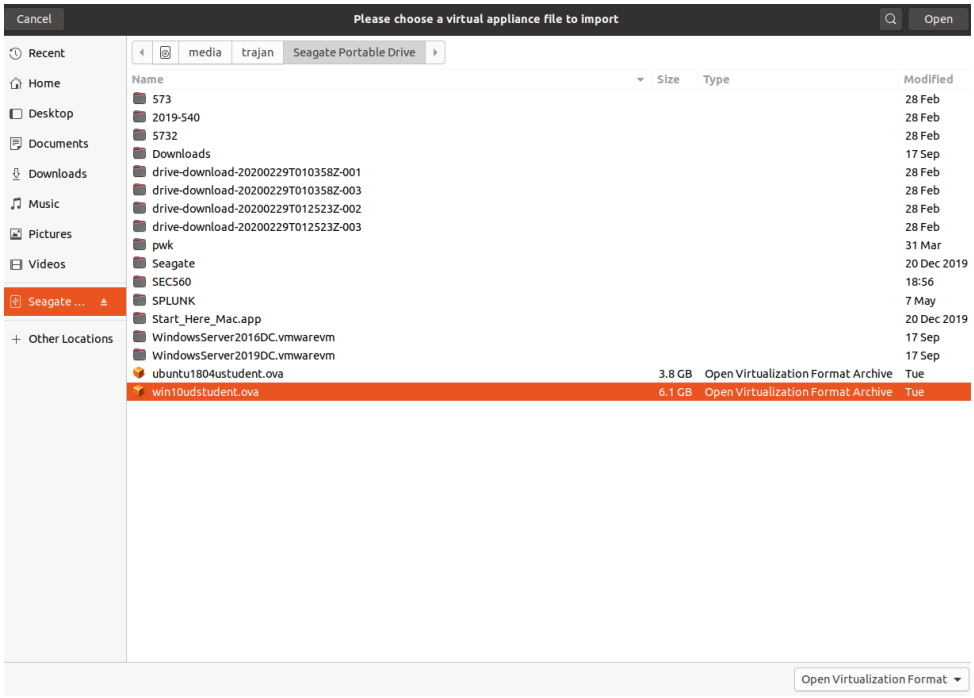
Step 3: Import virtual machines into your VirtualBox Manager. Please follow along with the screenshots below to complete this part. Then, repeat these steps for the second virtual machine. Once this is complete, you will set up a NAT network for the machines to communicate with each other and verify connectivity.



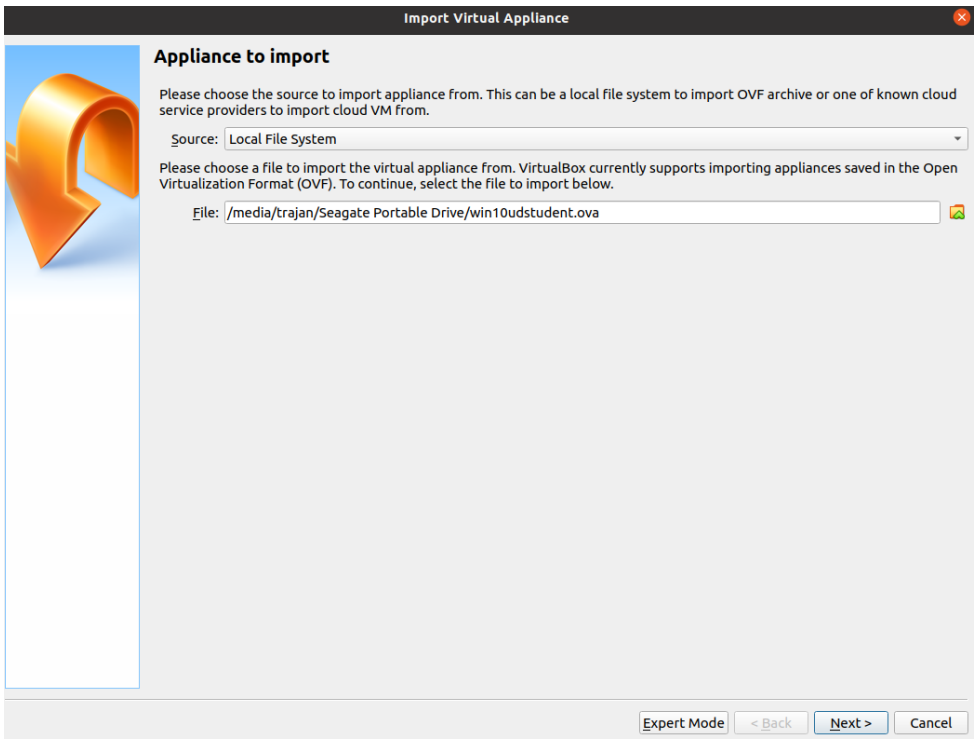
Virtualbox welcome screen, click import.



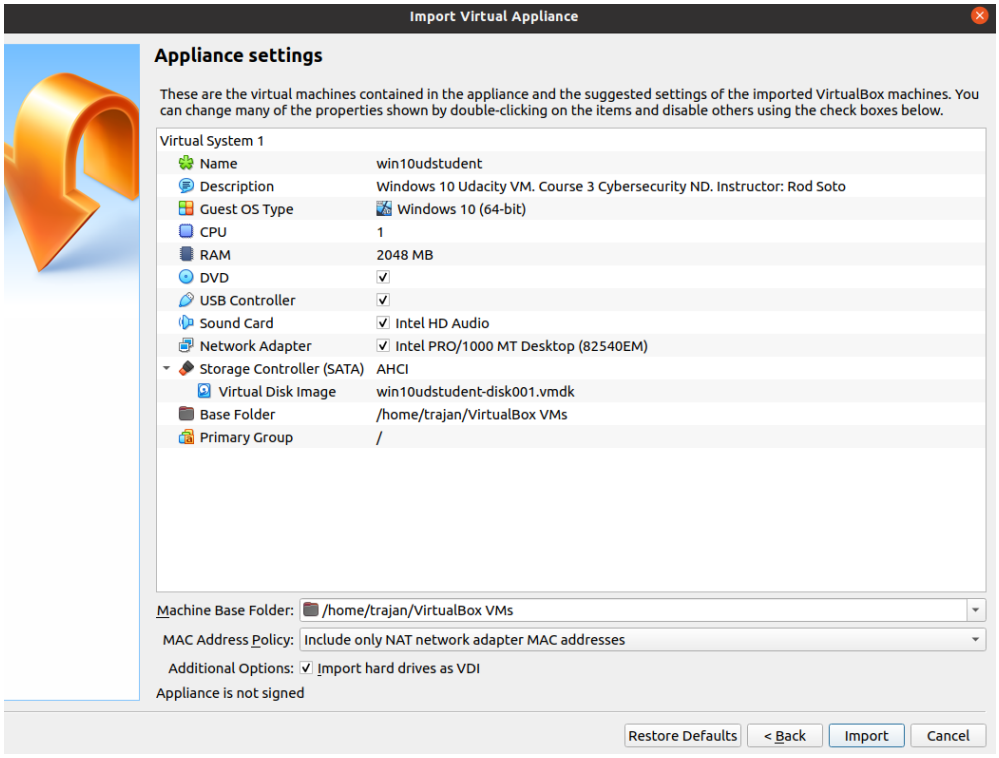
Choose Your Source



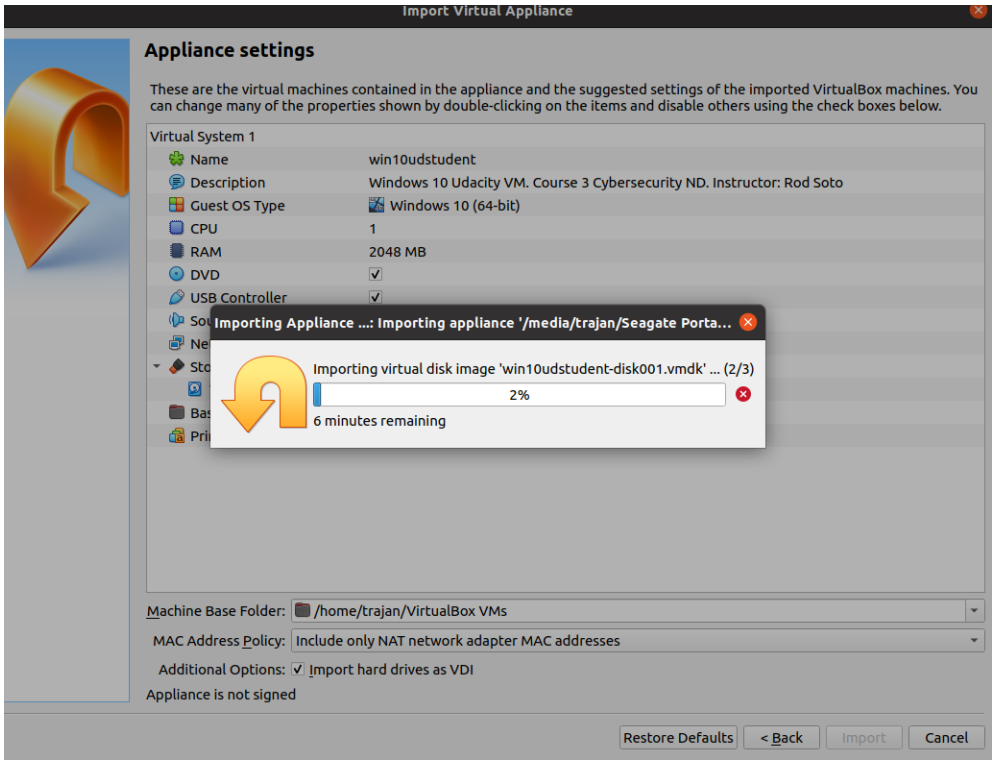
Choose the OVA file you want to import. Let's start with the Windows image.



After selecting the image you want to import, click next.

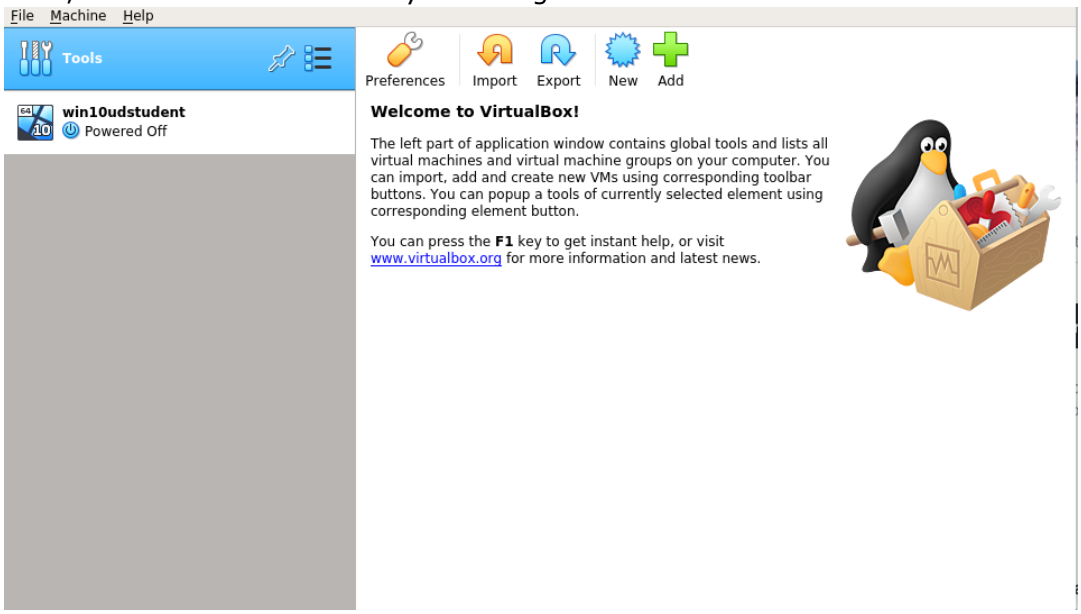


Use the default settings, and click next.

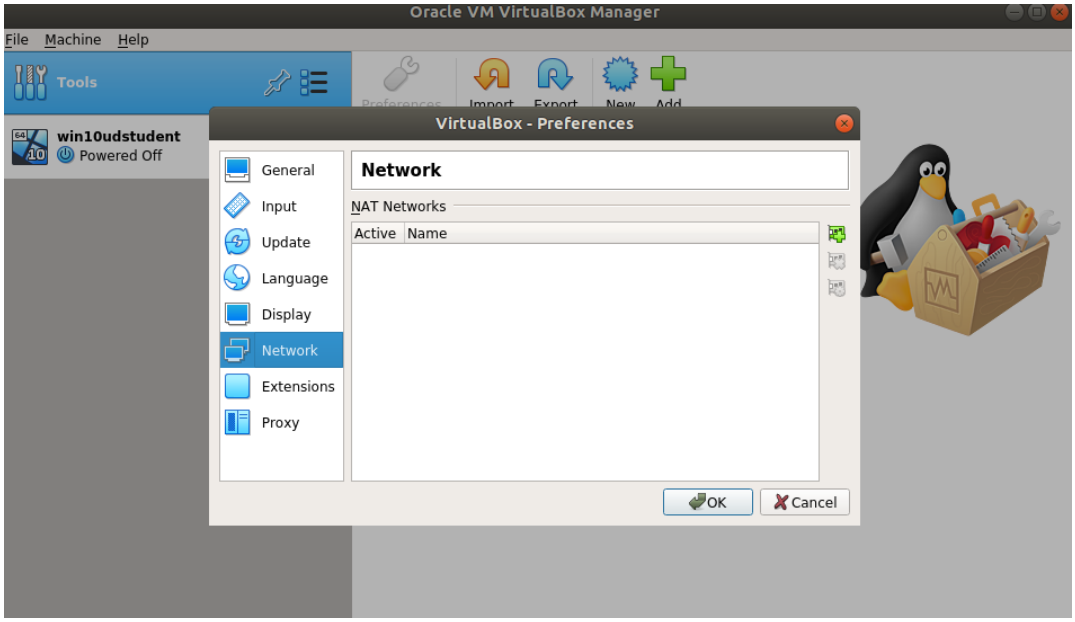


Let VirtualBox complete the import.

Next, create a NAT Network by following these screenshots and instructions:

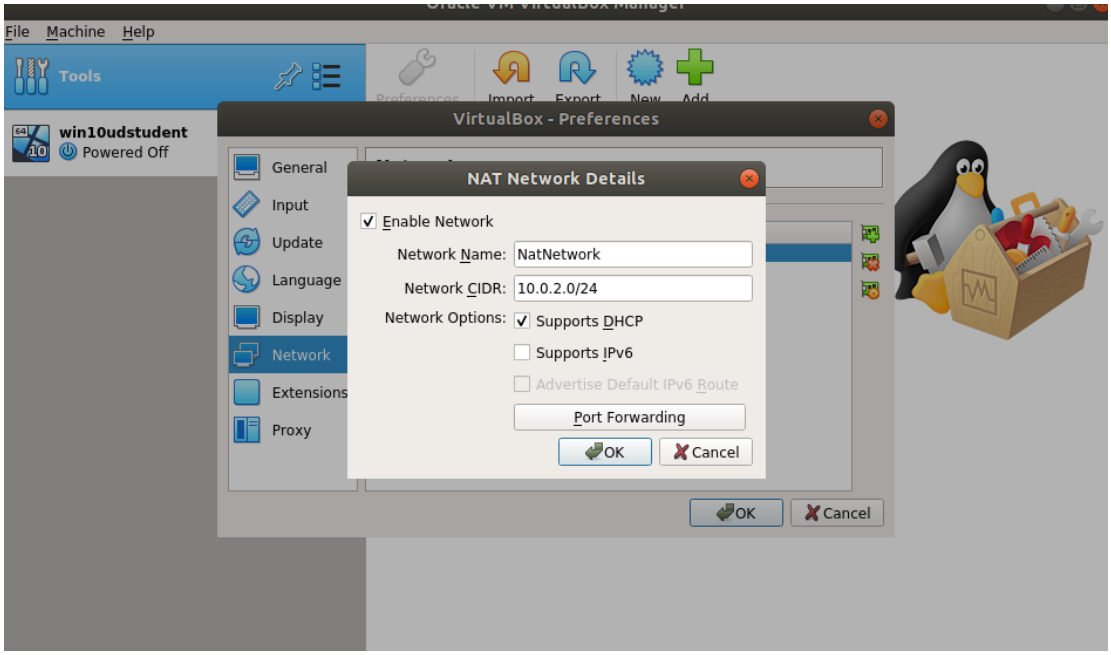


Click on tools, and then preferences in the upper left hand corner.



Then click on Network on the left side panel. Under Nat networks click on the + (plus) icon to the right of *Active Name*.

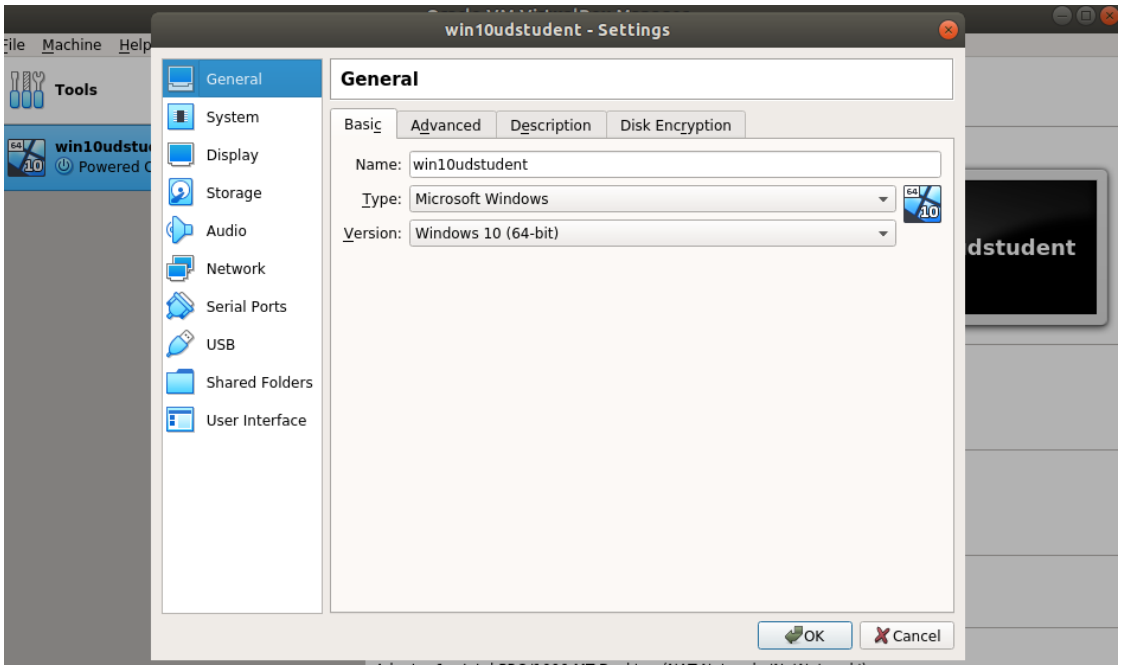
Next double click on the newly created network.



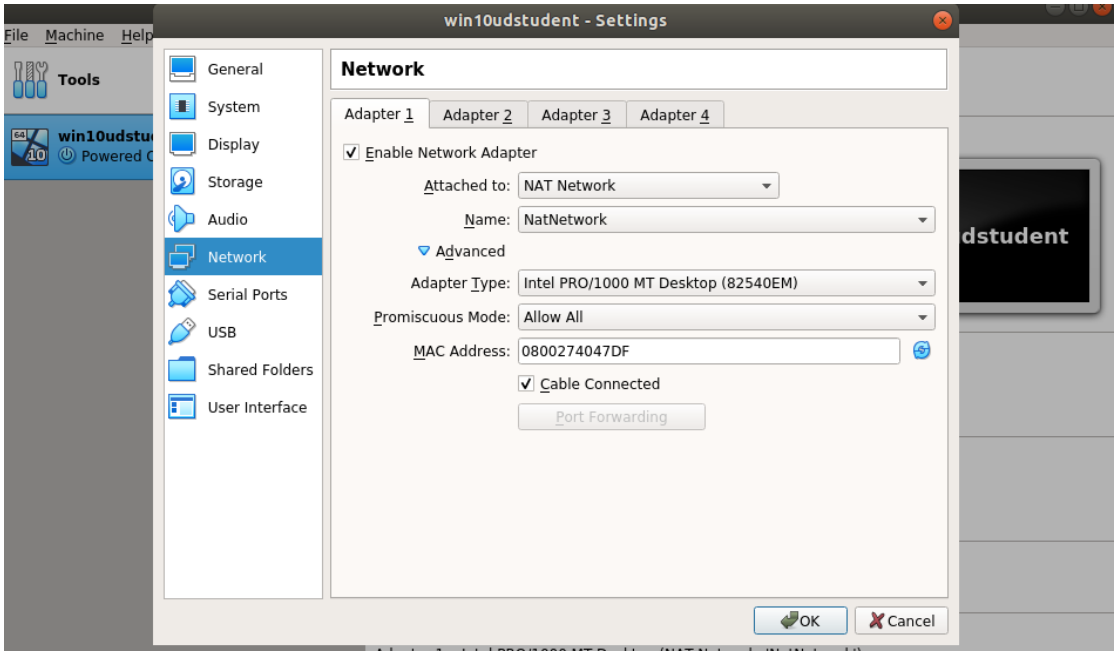
As seen above, this will be your Nat Network CIDR. This will be the network we will be using for our exercises and the final project.

Click *OK* when you are done. You might want to save these settings.

Next, configure the virtual machines to use this network. Click at the top of the name of your virtual machine and select settings.



Click on *Network* again to check the settings.



Settings for the VM to verify.

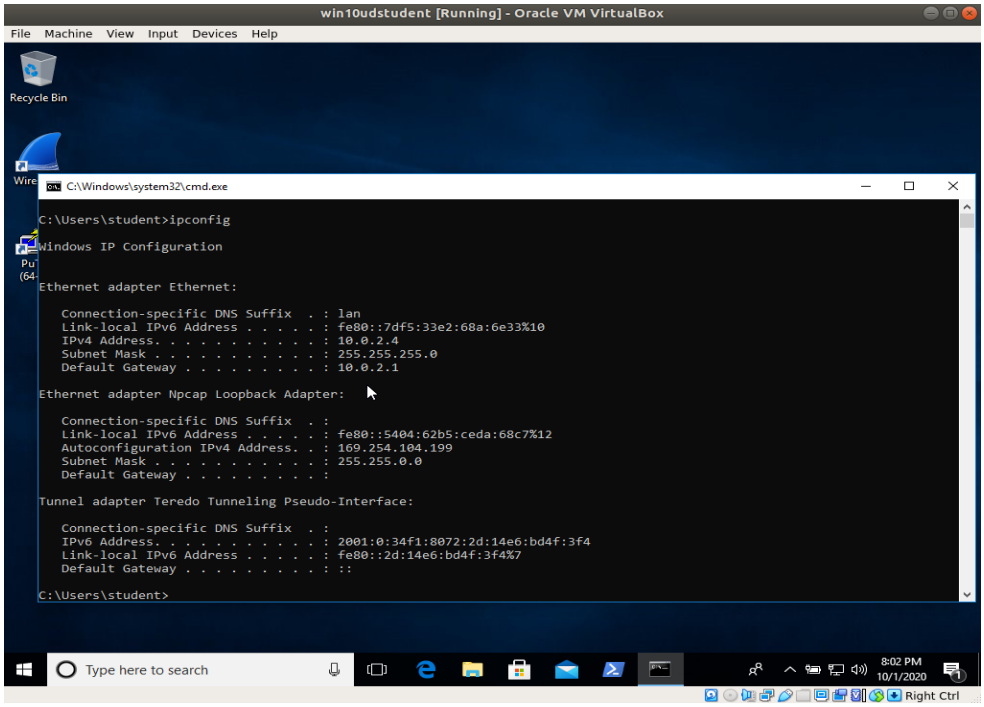
Be sure to check the following and ensure your settings match:

- Attached to: NatNetwork
- Name: NatNetwork
- Promiscuous Mode: Allow All

Then click *OK.*

Well done! Power on your virtual machine. It will automatically log in. Check its assigned IP by

- Right-clicking in the start menu
- Selecting run
- Typing cmd
- Then typing ipconfig.
- Finally, take note of the assigned IP

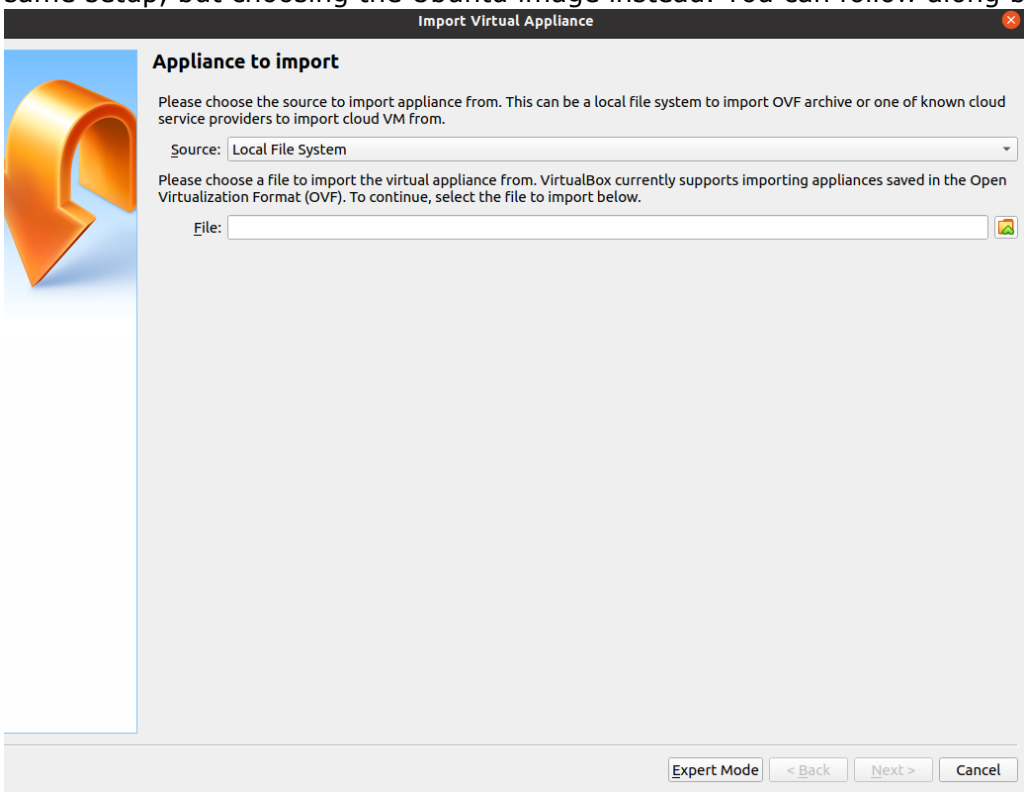


Output from running ipconfig.

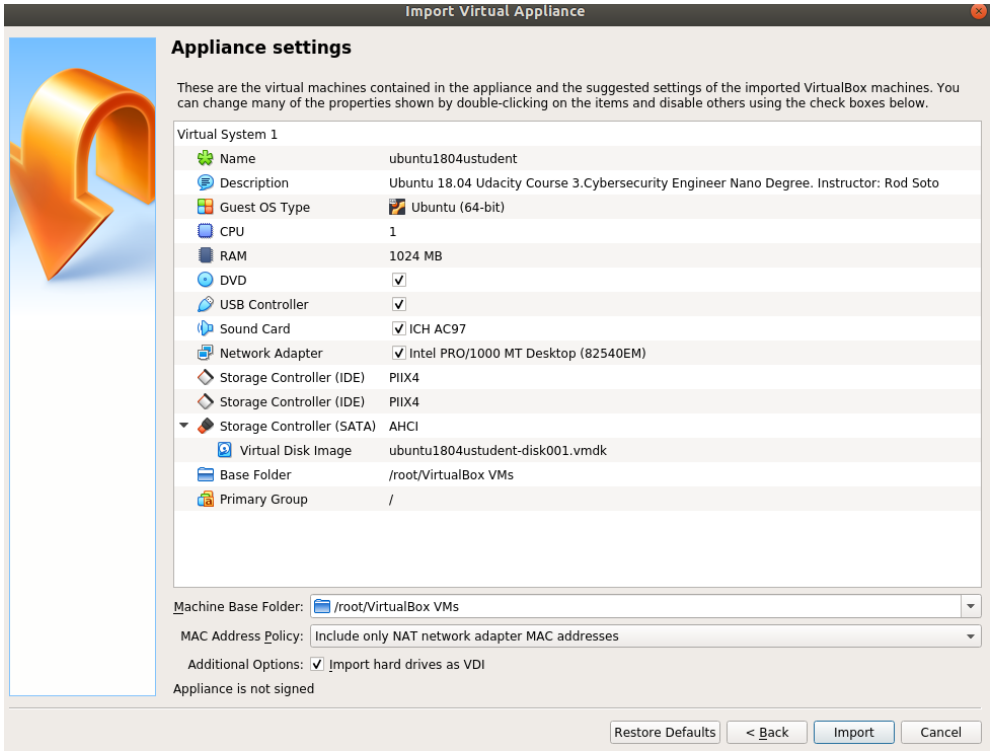
Great Job! Now let's move on to Ubuntu!

Linux (Ubuntu) Project VM Setup

Next, you must replicate these settings on the Ubuntu virtual machine by *repeating* the same setup, but choosing the Ubuntu image instead. You can follow along below.

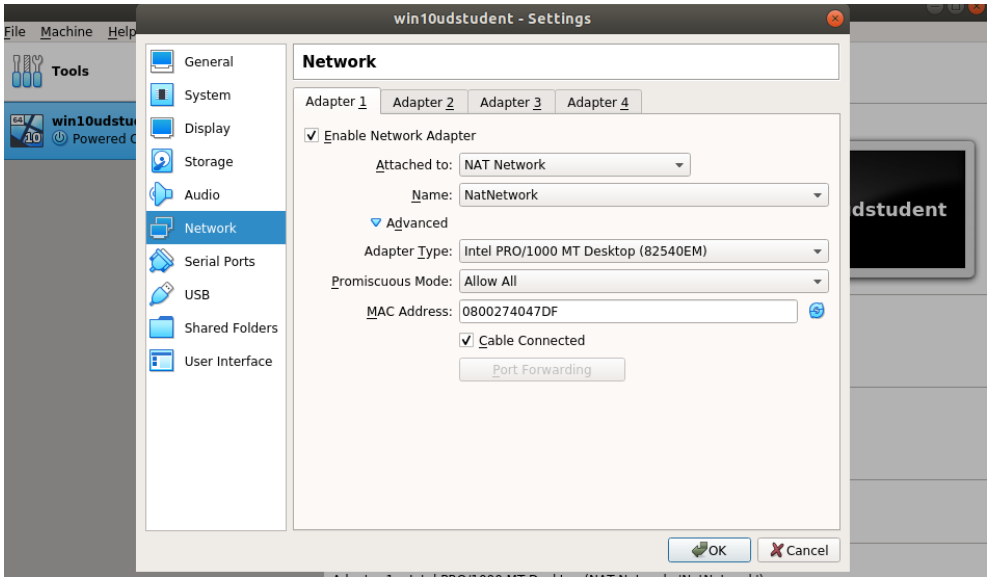


After clicking import, this time choose the Ubuntu image.



Use the default settings again and click import.

Next, login and apply the network settings so the two machines can communicate with each other.



Network Settings:

Your settings may differ slightly but should be similar to:

Network Settings for Adapter 1:

- Enable Network Adapter: Checked
- Attached to: NAT Network
- Name: NatNetwork

Under Advanced:

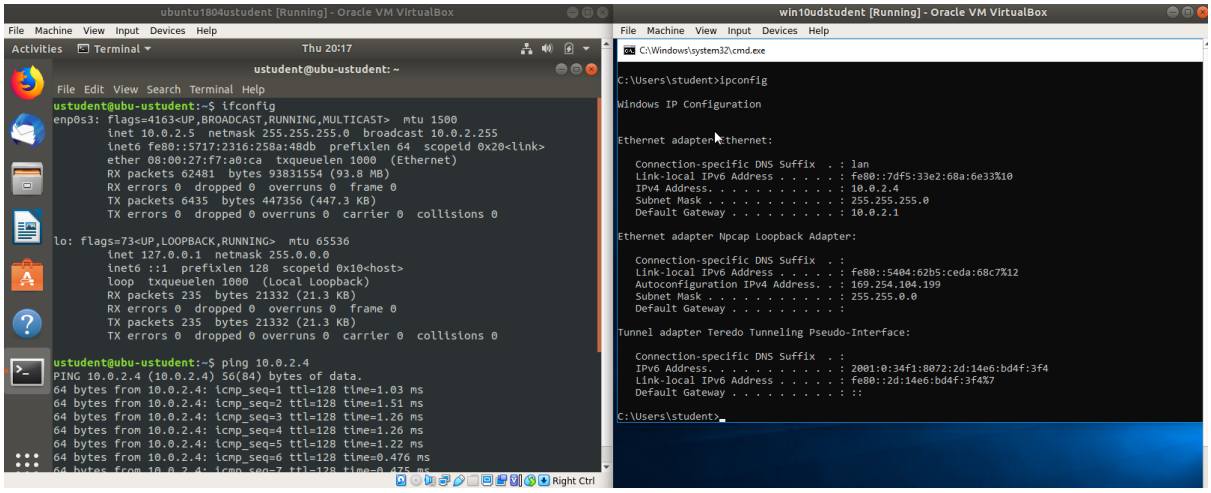
- Adaptor Type: Intel PRO/1000 MT Desktop
- Promiscuous Mode: Allow All
- MAC Address: 0800274947DF
- Cable Connected: Checked

Click *OK*.

And finally, after Ubuntu 18.04 auto logs in, bring up a terminal window.

Ping the Windows machine to see if we have connectivity.

See the screenshot below (Note: Your NAT network Ip addresses may differ in your machine).



Windows Ping Results

We are now ready to go!

Step 4: Please take note of your machines credentials:

- Ubuntu18
  - User: ustudent
  - Password: 1234
- Windows 10
  - User: student
  - Password: 1234

Project Steps

Use the staticspeed-vunerability-report-template