Linux Distribution Configurations by Brennen Tse

Purpose:

Configure 2 Linux distribution to later use with PfSense to connect to the internet.

Background Information:

Ubuntu and Debian/Linux Mint are two Linux distributions. Linux Mint is based on a Debian derivative and is becoming more popularity. The main reasons are that Linux mint is very similar with Windows desktop. Ubuntu Desktop is the older of the two and both are very usable, with Ubuntu having an interface closer to MacOS.

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2. Installing Ubuntu
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Prerequisites:

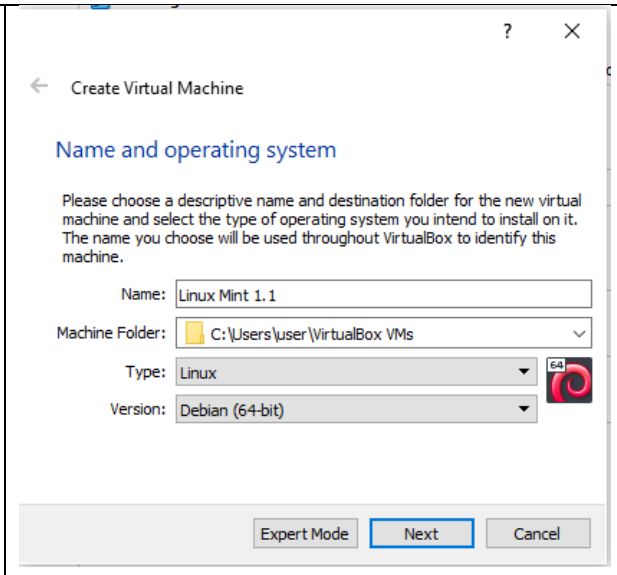
Download and install VirtualBox:

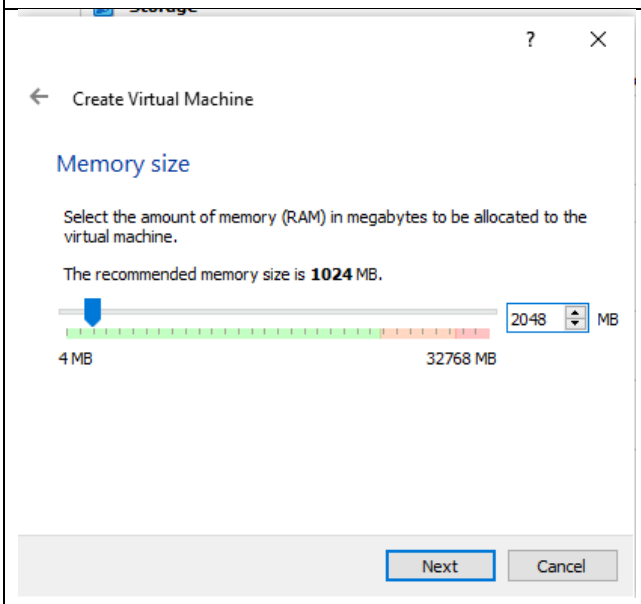
Download Linux Mint:

Download Ubuntu:

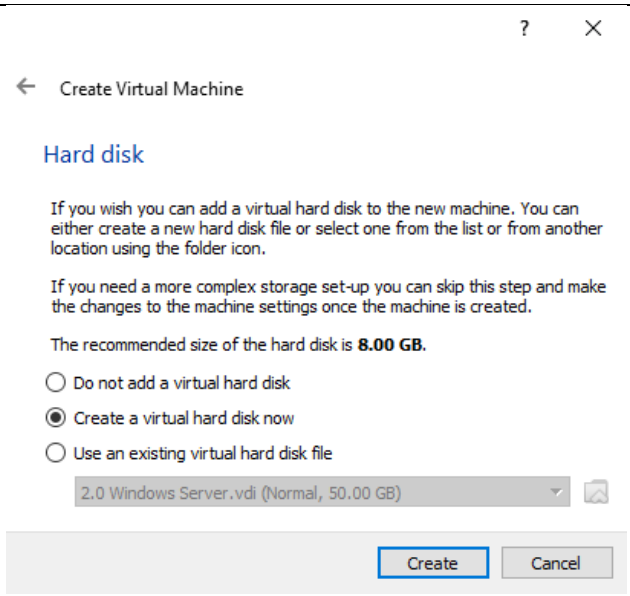
Installing Linux Mint:

Create the VM instance:
Open VirtualBox and click the New VM icon (blue circle).
Enter in the VM's name, what folder you want to store the VM files in, and the OS (Linux) and Linux version/distribution (Debian). You should select Debian because it's similar enough to Linux Mint and Virtual Box doesn't offer a Linux Mint version drop-down.

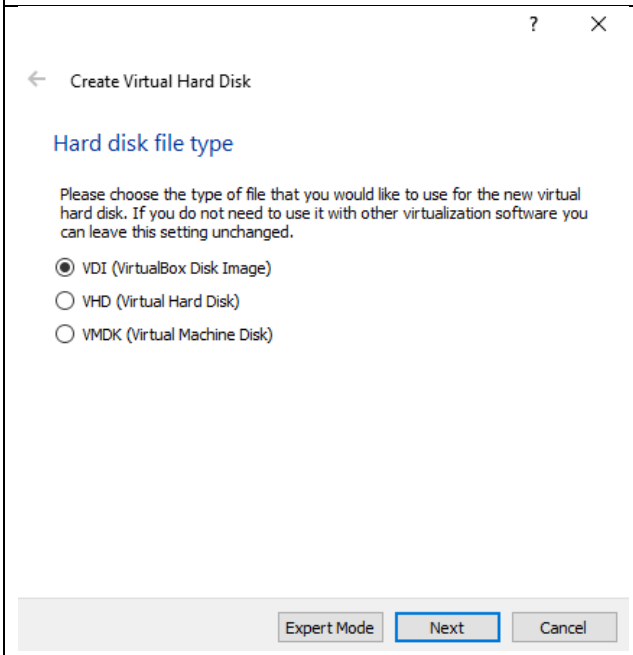




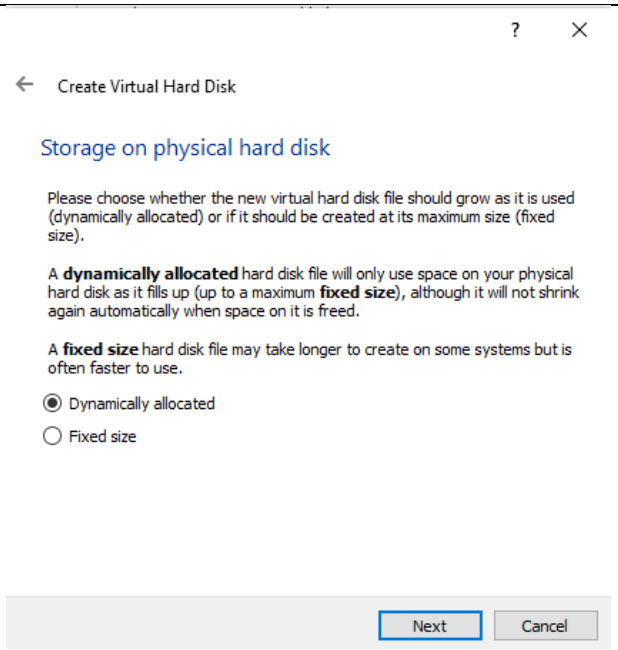
Configure the Linux Mint's memory, I allocated 2048 MB.



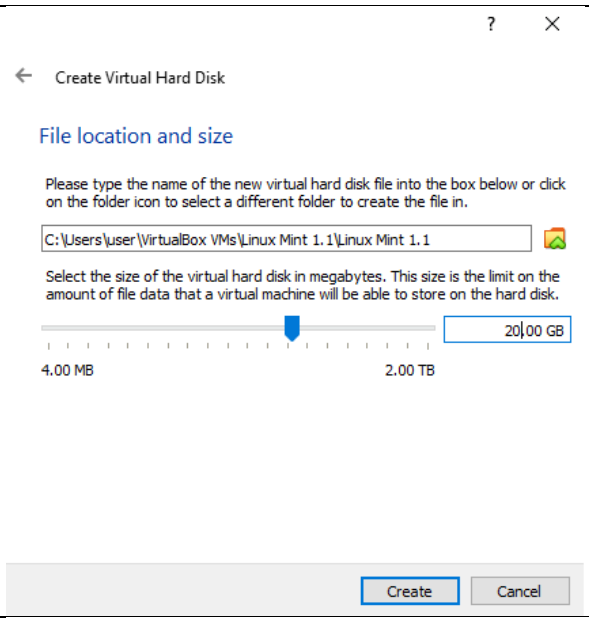
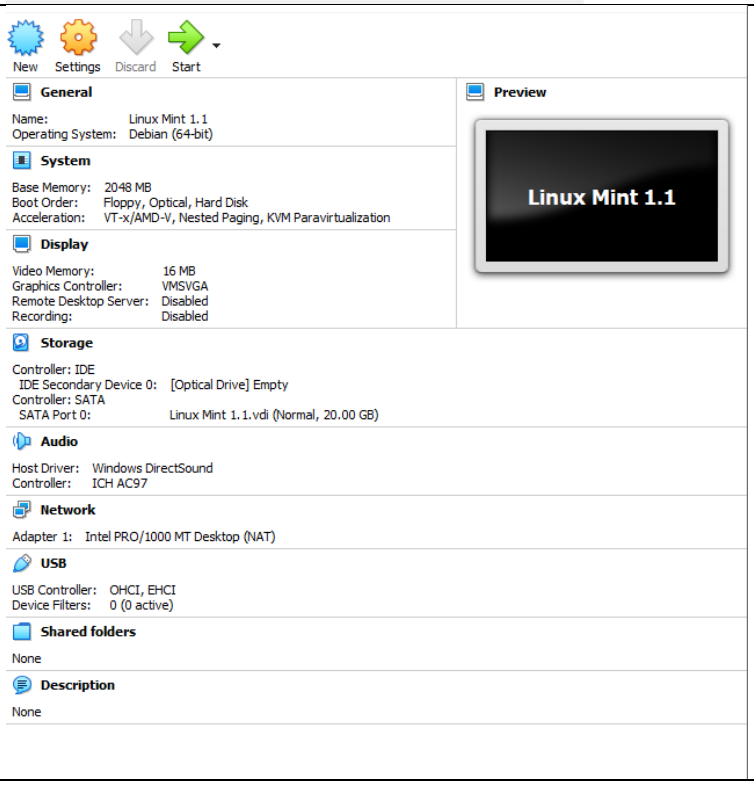
Setup the hard disk, I used a virtual hard disk.

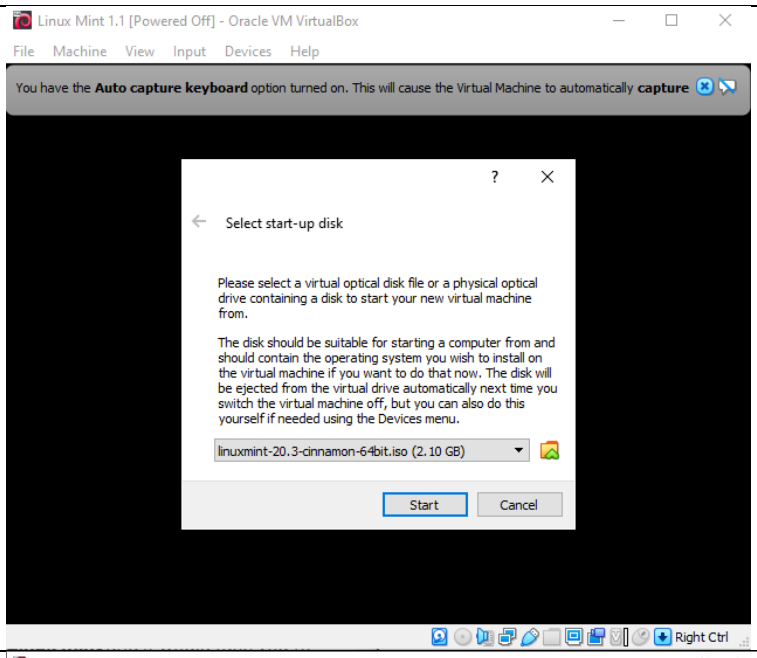
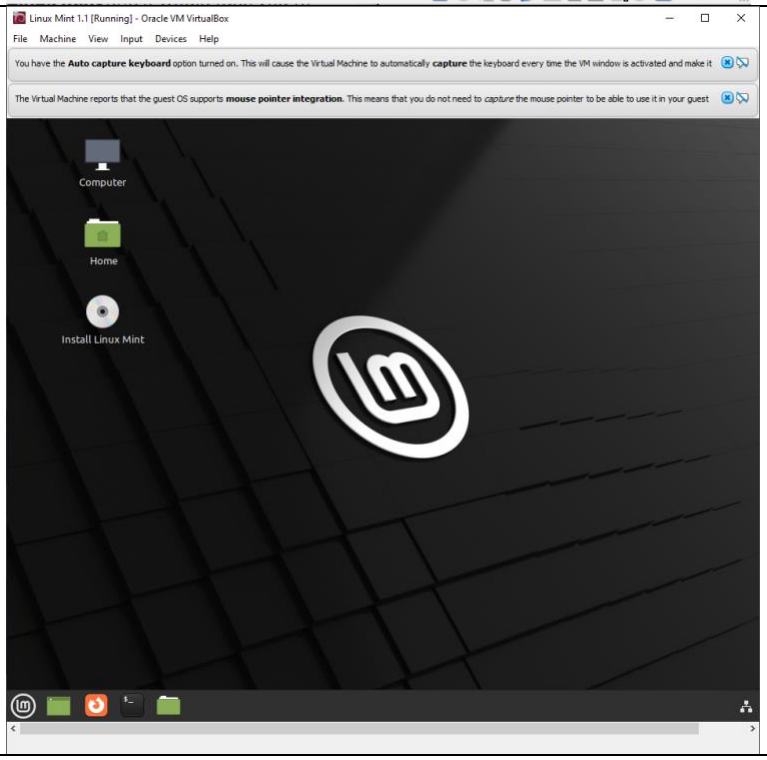


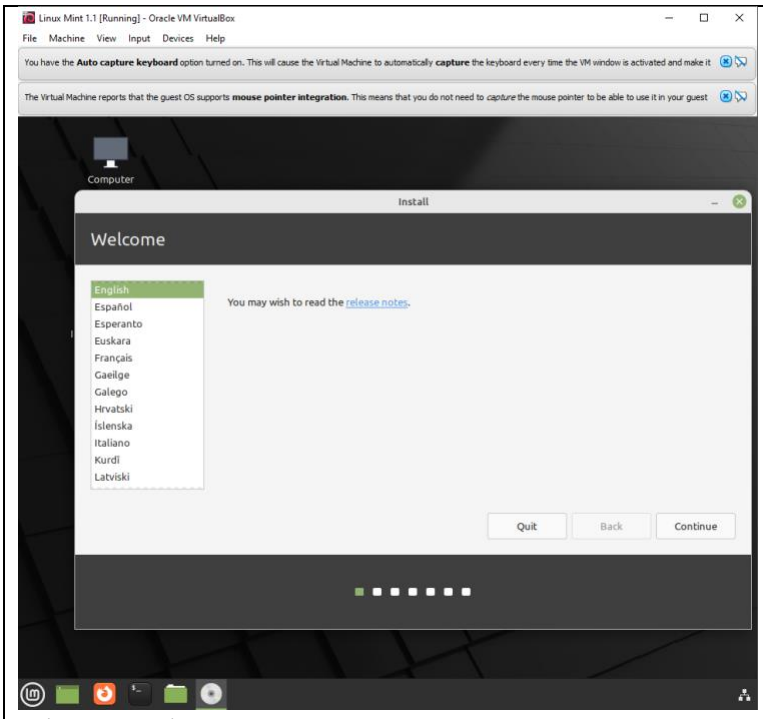
I left the hard disk file type as default of VDI, but if you have any plan to move this VM to another hypervisor you should choose VMDK.



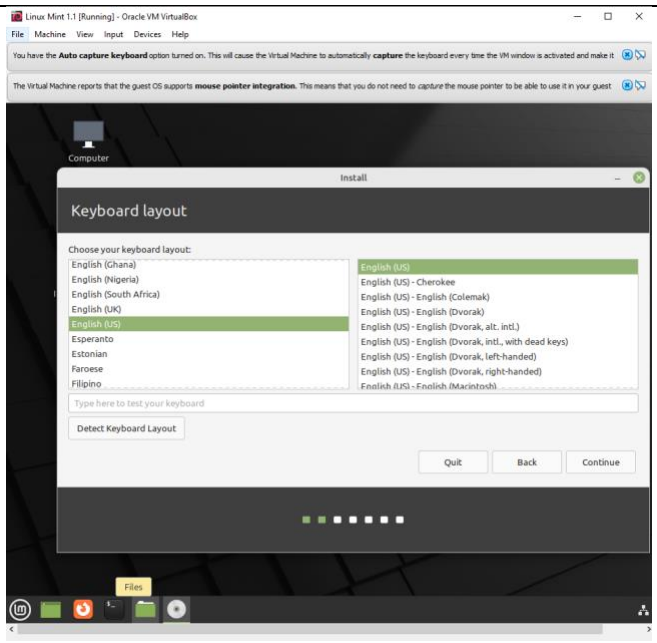
Choose dynamically allocated.

After following the above steps like selecting memory size, creating a virtual hard disk, selecting the file type and storage, outline the maximum disk space the VM can take up, I set it to a default of 20 GB, but if your PC has less it can work with less.	
Once you click create, this should be the screen that you're brought to. Check all the settings to make sure they match what's shown. Make sure that the network adapter is set to NAT if you require internet access. Then click the green start arrow to proceed.	

After startup, VirtualBox prompts to choose the ISO image. Choose the Linux mint ISO you downloaded earlier and press start, then start Linux Mint if not prompted.	
When you reach the live desktop, you should click the CD icon that says install Linux Mint, double click it to proceed.	

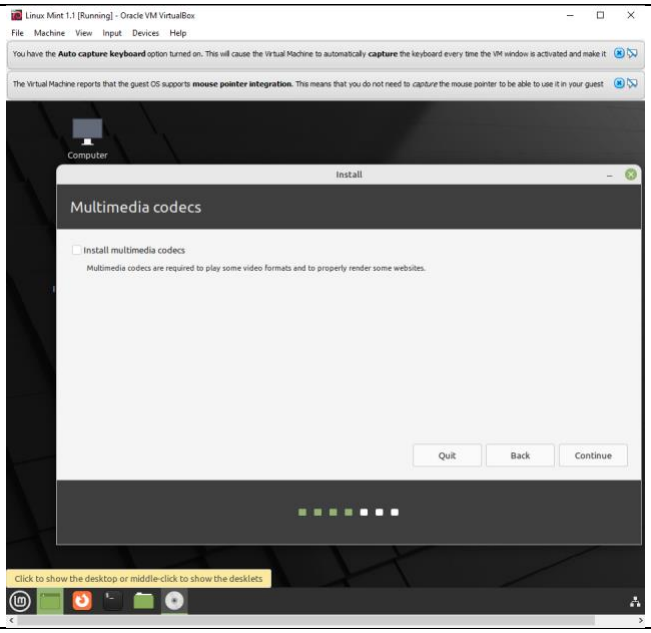


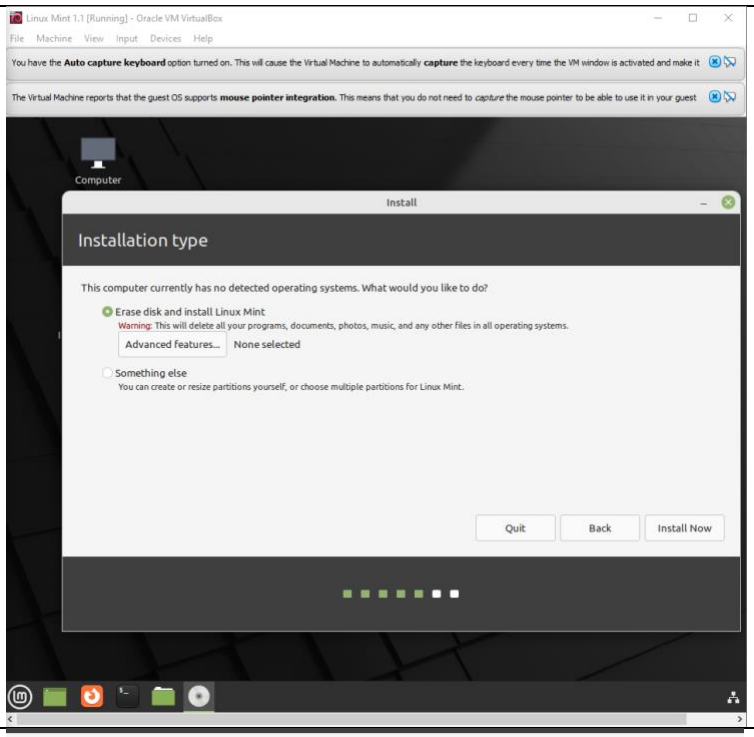
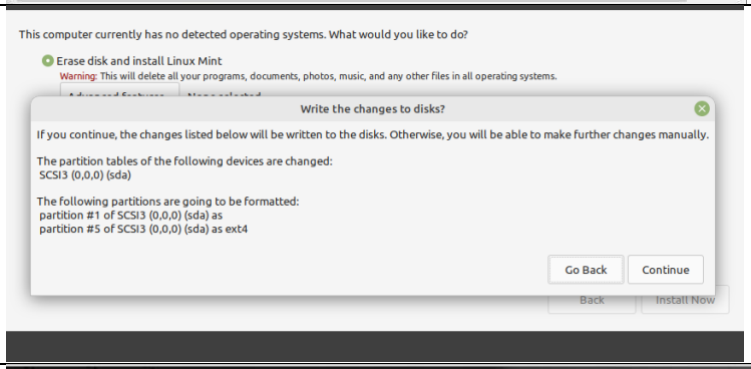
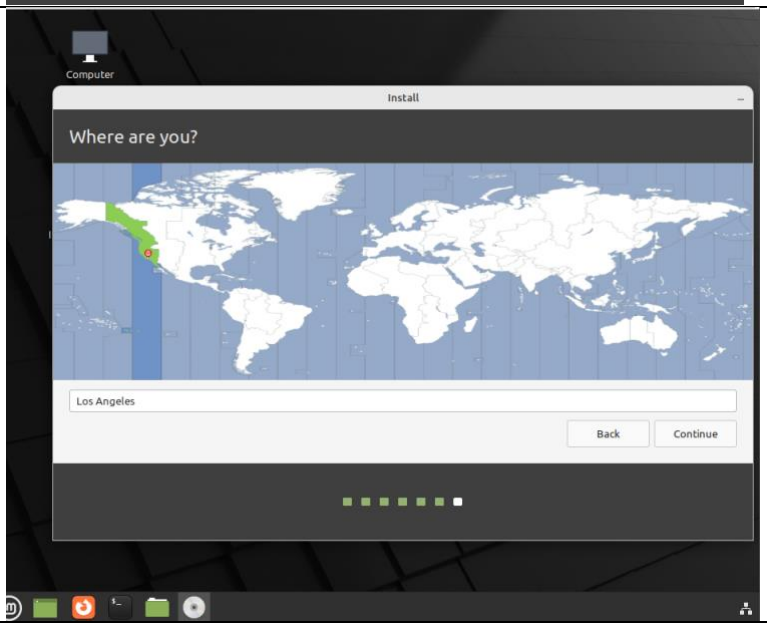
Choose a language

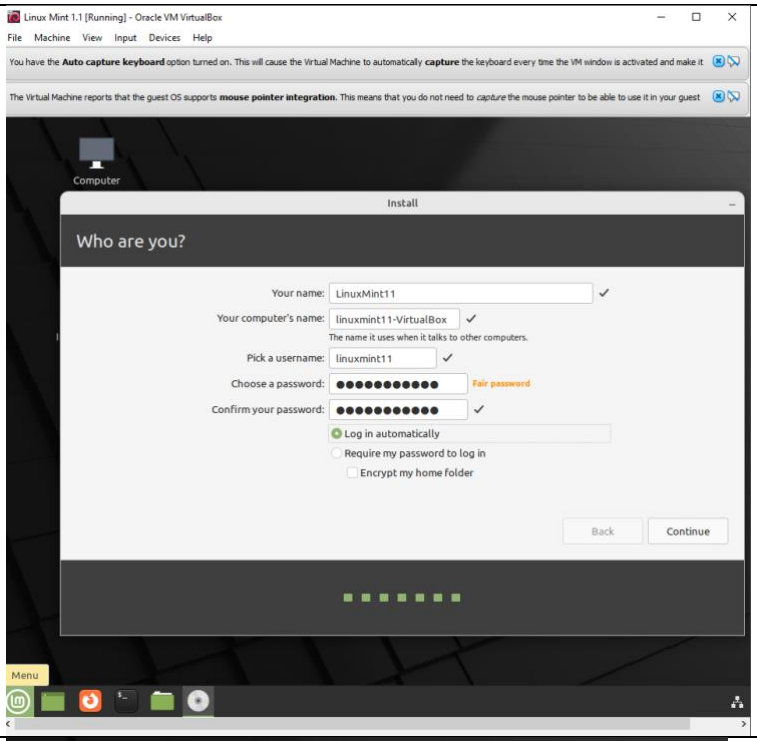
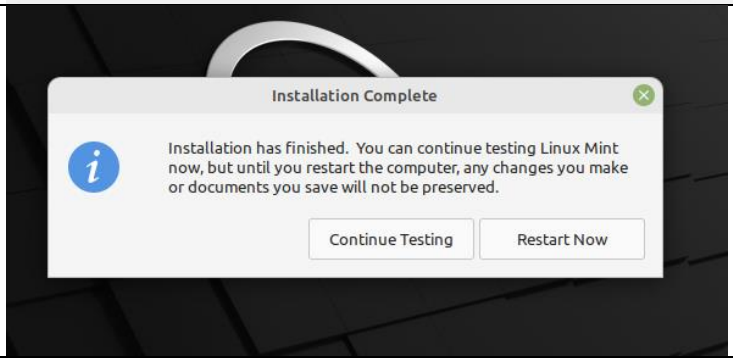


And keyboard layout

If you plan to use multimedia, click install multimedia codec, since I'm only using this VM as a client of Pfsense I leave this unchecked and continue on.

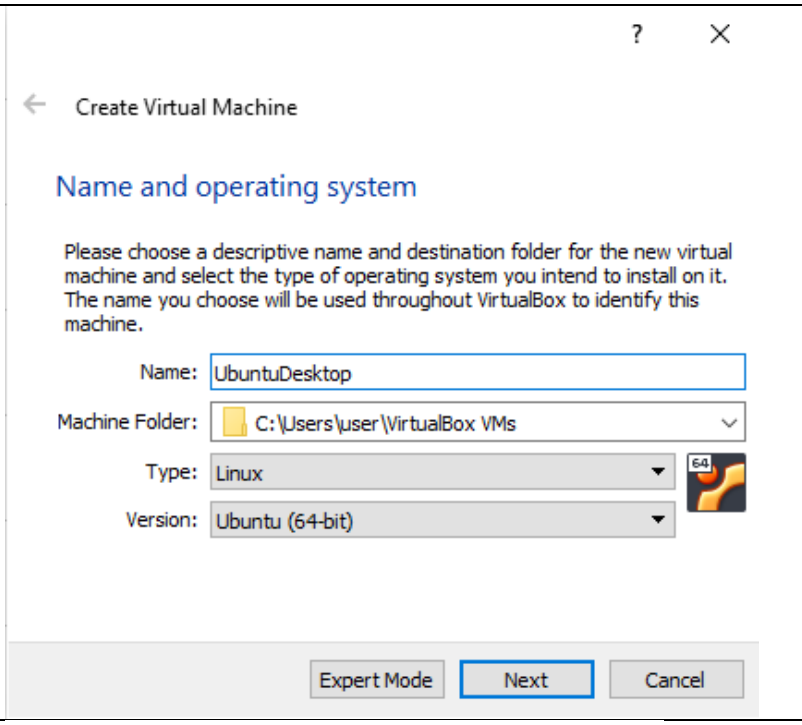


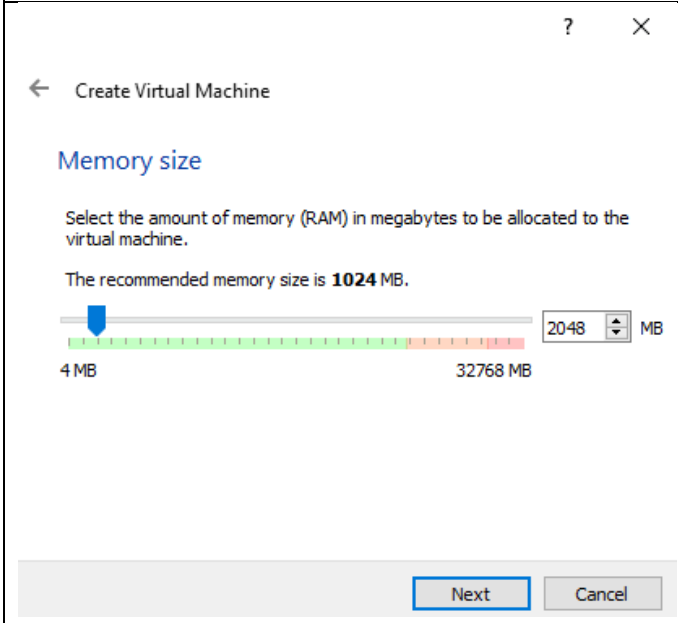
Format the virtual hard drive by clicking on the Erase disk and install Linux Mint option. Continue with Install Now	
Ignore the warning and continue.	
Choose a time zone then click continue.	

Set the VM's username and password.	
Click restart now to finish the installation.	
When rebooting, you'll be prompted to remove the installation medium then press Enter. The ISO file has already been removed after Linux mint was installed so you can press enter.	And that's it, job complete for now. Now onto the Ubuntu client

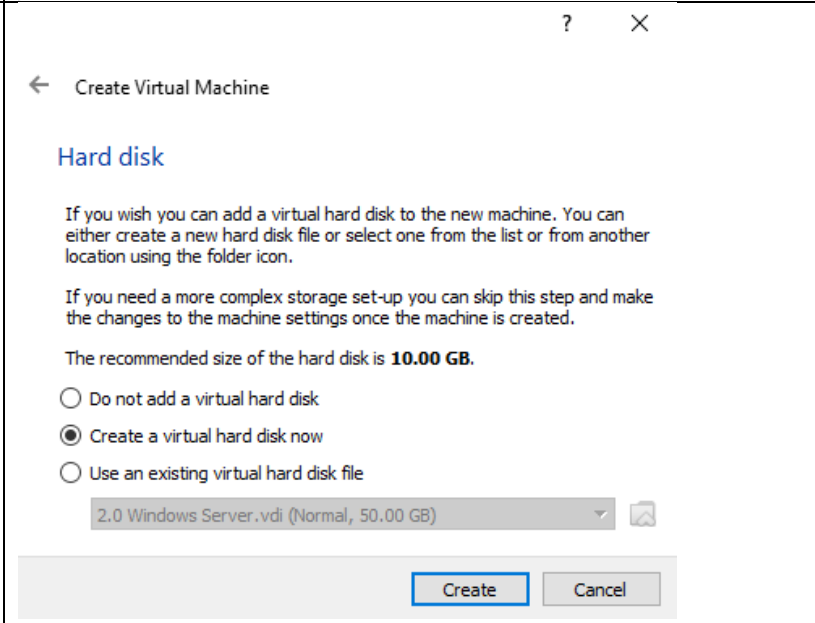
Installing Ubuntu:

Create the VM instance:
Open VirtualBox and click the New VM icon (blue circle).
Enter in the VM's name, what folder you want to store the VM files in, and the OS (Linux) and Linux version/distribution (Ubuntu).

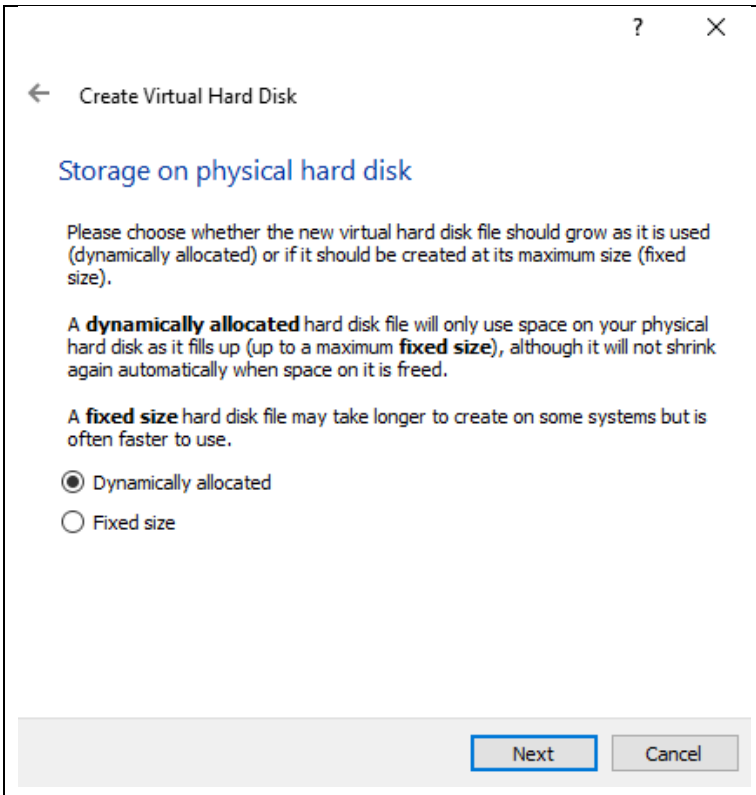




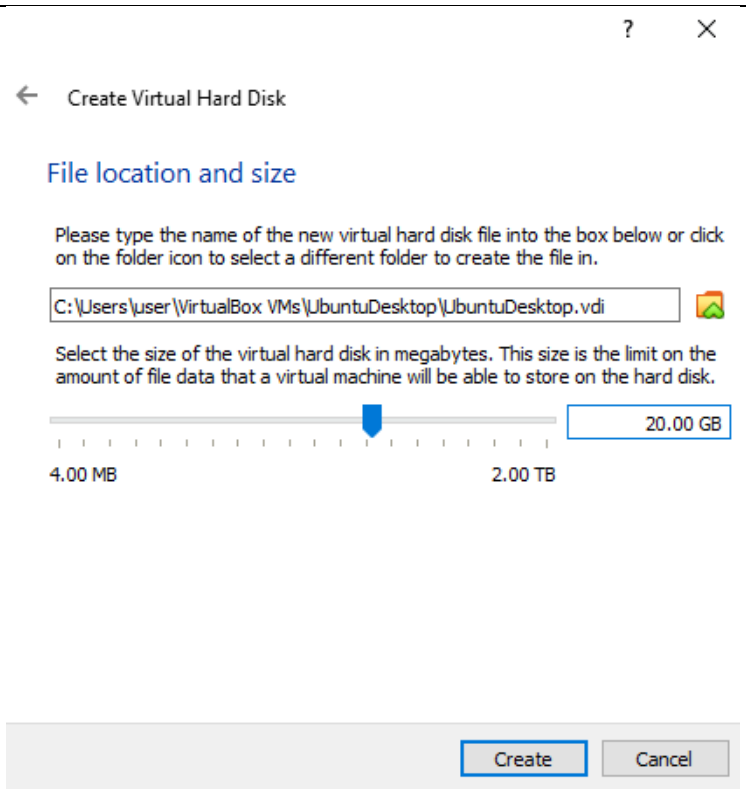
Allocate 2048 MB of memory to the VM.



Create a virtual hard disk.

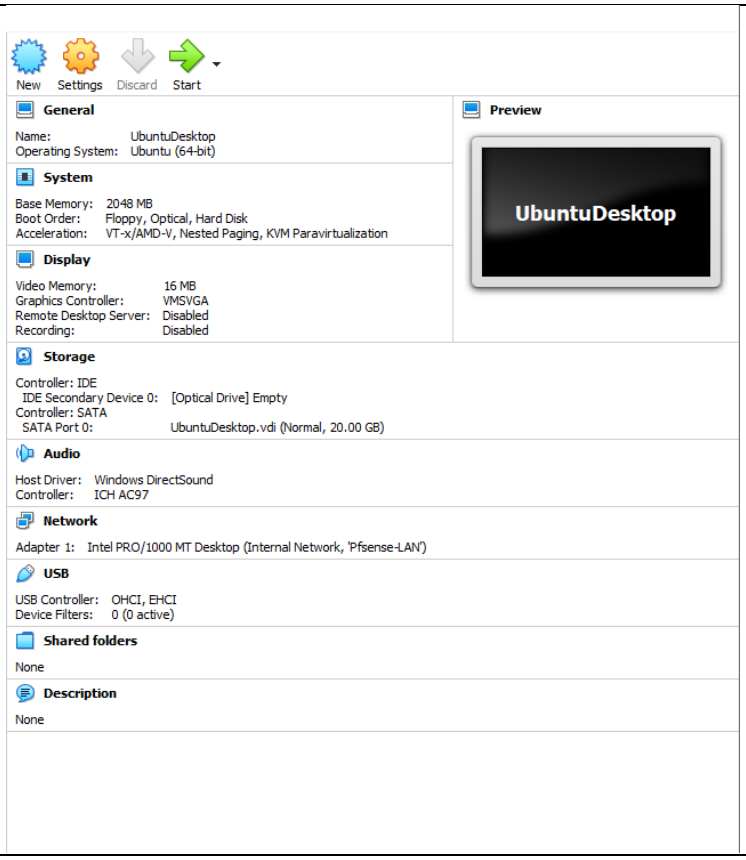


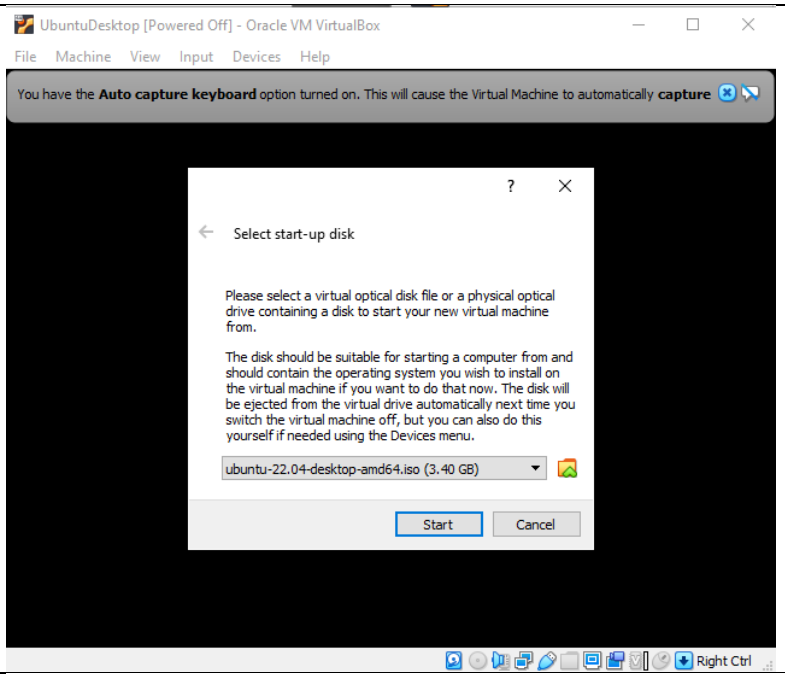
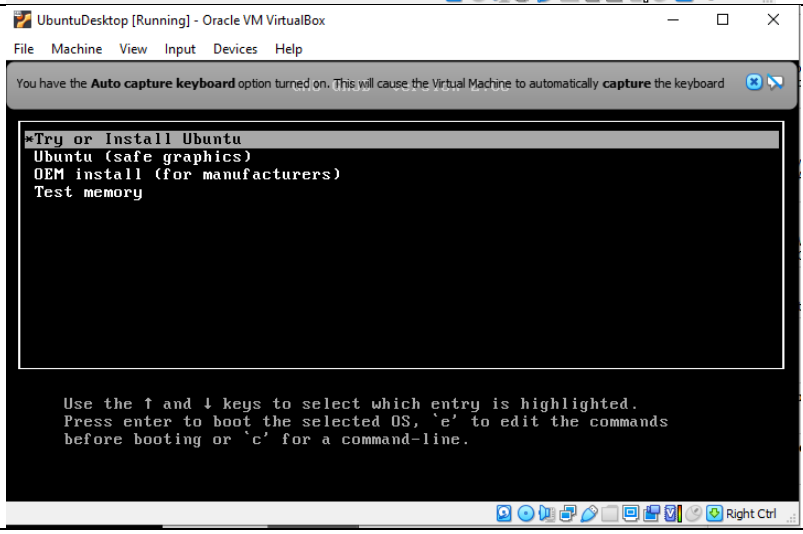
Use a dynamically allocated hard disk file.



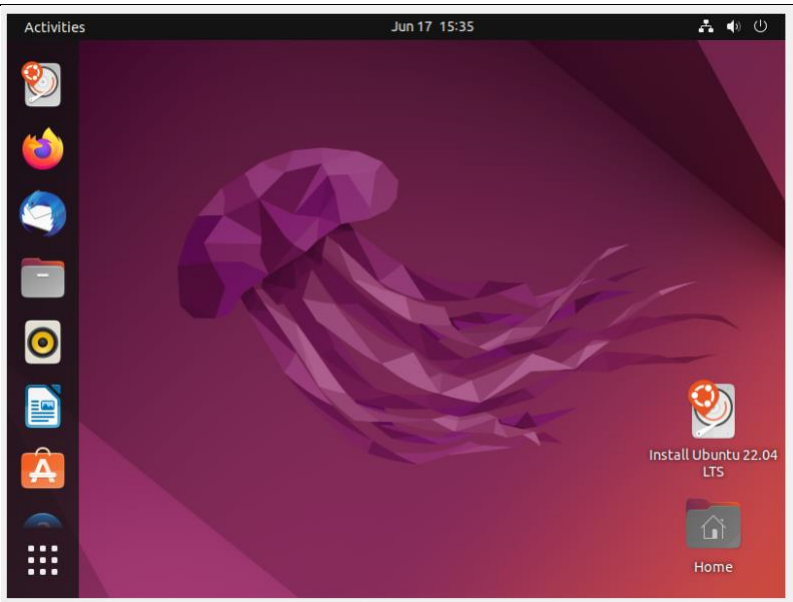
I set the max size to 20 GB.

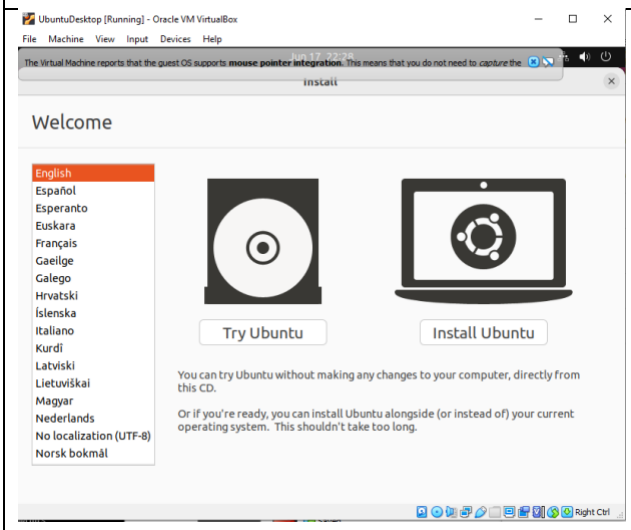
Click create and this should be what you see. At this point the network adapter should be set to Intel Nat for now as we have not created the Pfsense server, we will come back to this in the Pfsense configuration document. Click the green start arrow.



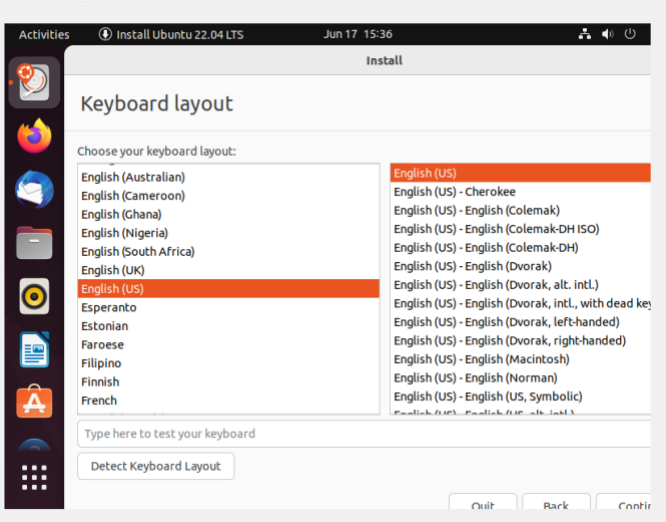
Locate the ubuntu start-up disk ISO you installed earlier and select it, then click start.	
Install Ubuntu.	

Once Ubuntu is at the installation screen, click the hard drive icon named Install Ubuntu 22.04 LTS.

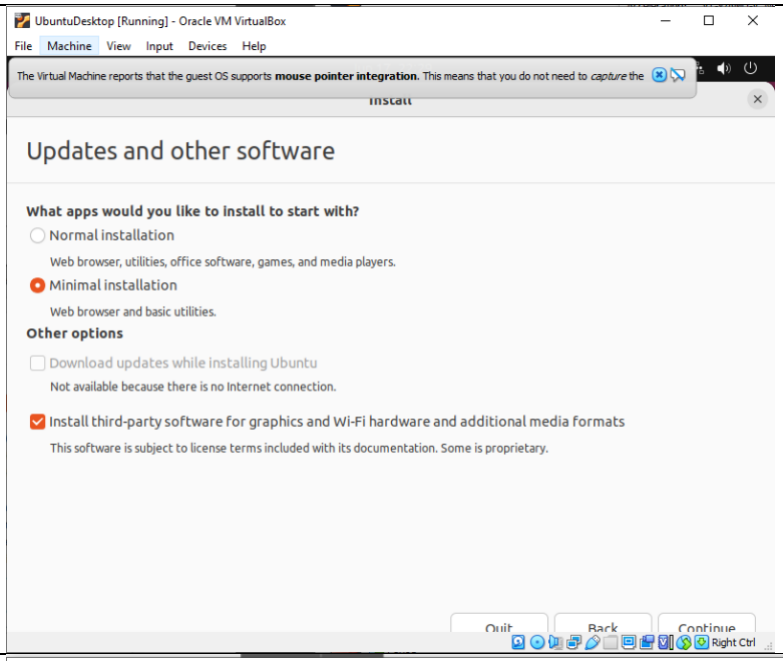
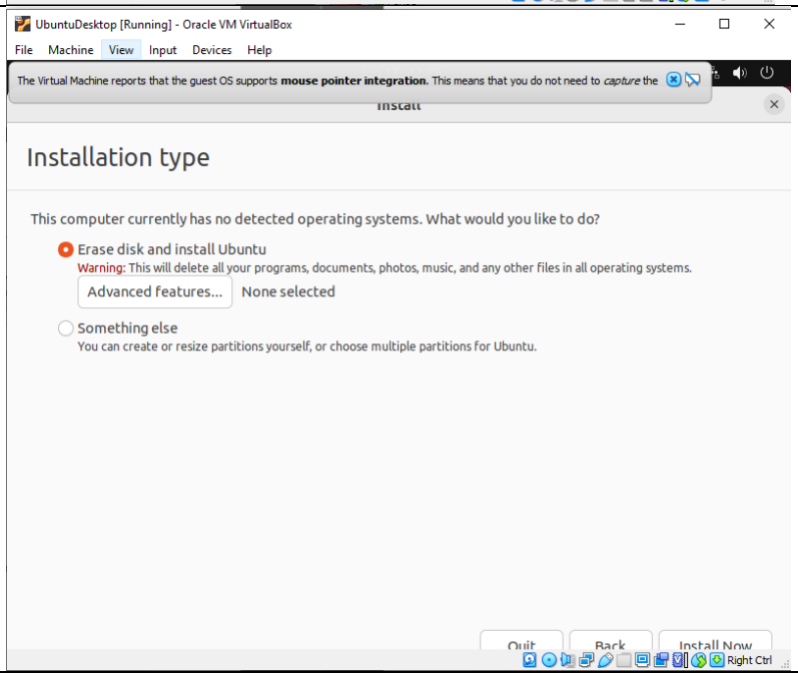


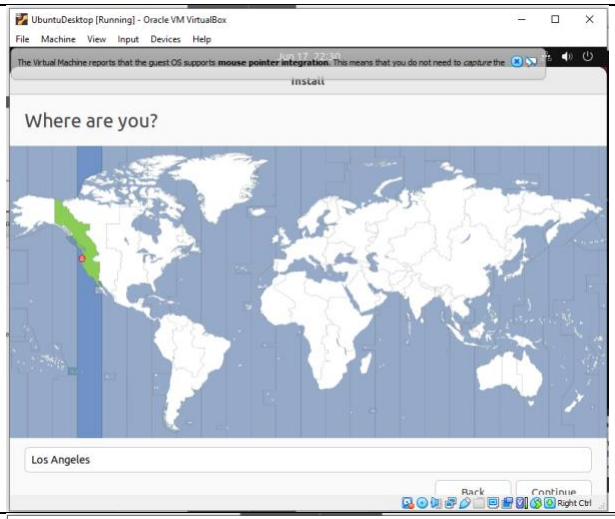
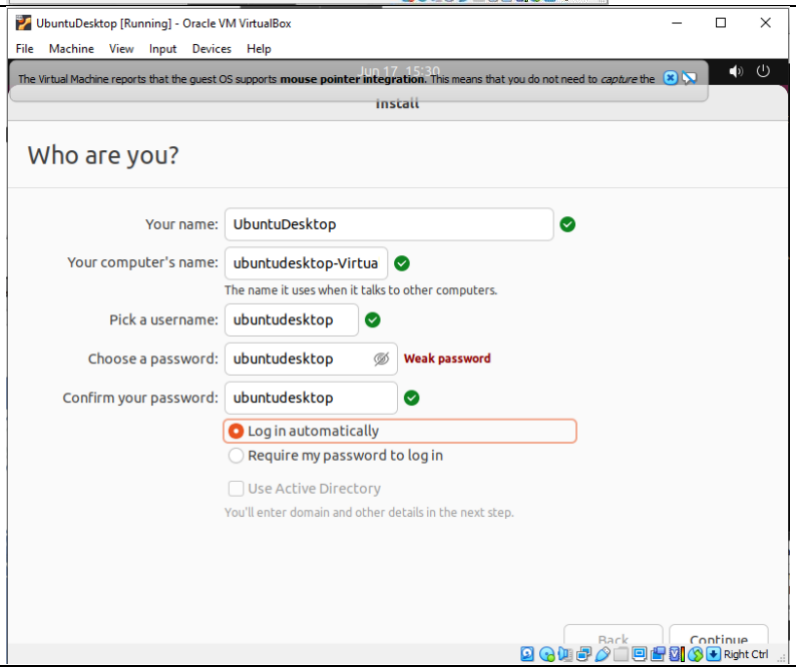


Click on Install Ubuntu



Select the keyboard layout

If you wanted to use this Ubuntu VM as a full-blown desktop, then you need a normal installation with all the requisite software. However since I'm only using the web browser and Ubuntu terminal for the Pfsense configuration, I just need minimal installation. Make sure downloading updates while installing Ubuntu is unchecked. You can choose whether to leave install third-party software checked or unchecked based on your needs.	
Format the virtual hard disk by clicking Erase disk and install Ubuntu. Then click Install now.	

Select the time zone.	
Specify login credentials for the account that you are going to use with this Ubuntu desktop. Write these down because if you forget them it's a long and annoying process of resetting them. The machine should now restart and once you login again you will be greeted by the Ubuntu desktop.	

Problems:

Both Linux Mint and Ubuntu were very easy to install and straightforward to understand. The only problem I had was connectivity between the Linux Mint and Ubuntu through Pfsense in a later lab, but that was because Linux Mint wasn't receiving the DHCP addresses.

Conclusion:

Both Ubuntu and Linux Mint are capable and reliable Linux distributions. I couldn't pick one over the other even if I tried. Linux based operating systems are open source and offer you a far greater level of control and customization than typical company OS's like Windows or MacOs. In the next lab we will set-up a firewall with both of these distributions to hopefully provide more security.