Linux Installation and Training Guide

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Introduction

Before migrating to a Linux distribution, it is good to train personnel on the chosen distribution. Using VirtualBox, a virtualization software, personnel can experiment with the new operating system and train on the new environment's essential functions without worrying about causing a catastrophic error that could crash the system. This tutorial will walk users through installing Linux Mint with VirtualBox and include some common commands used on Linux's command-line interface.

Part 1

Install Mint

1. Create a file where you want to install and save the Mint Operating system. The example below is saving it to a removable hard drive, "D:\Mint." Then click "New" to bring up the screen below.

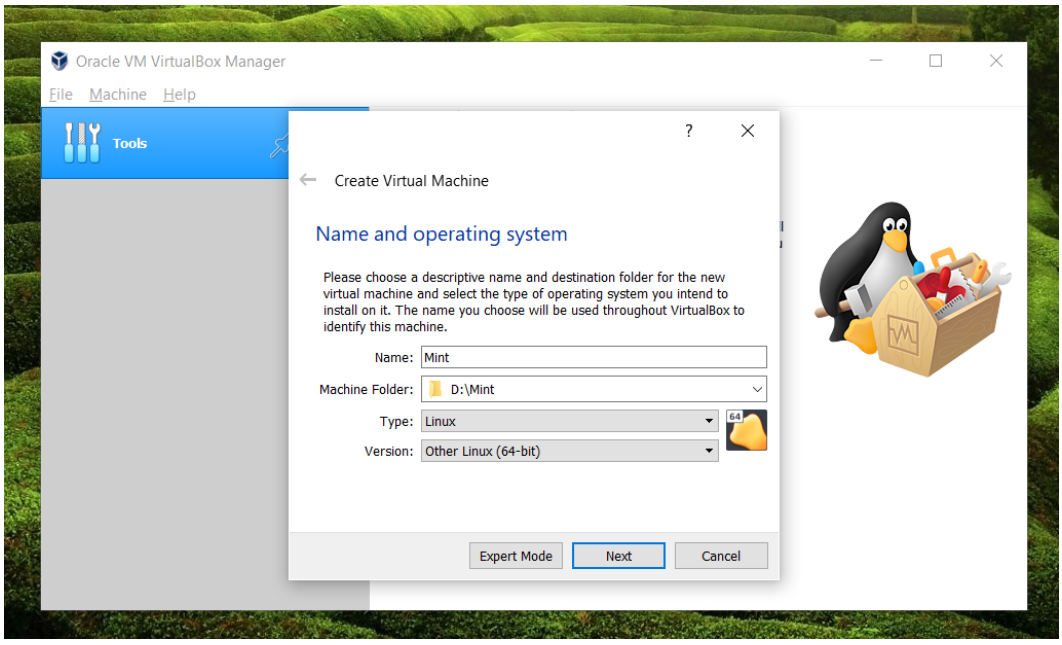

Figure 1: Destination folder for Mint Operating System

2. Select the amount of Random Access Memory (RAM) you want to be available for Mint.

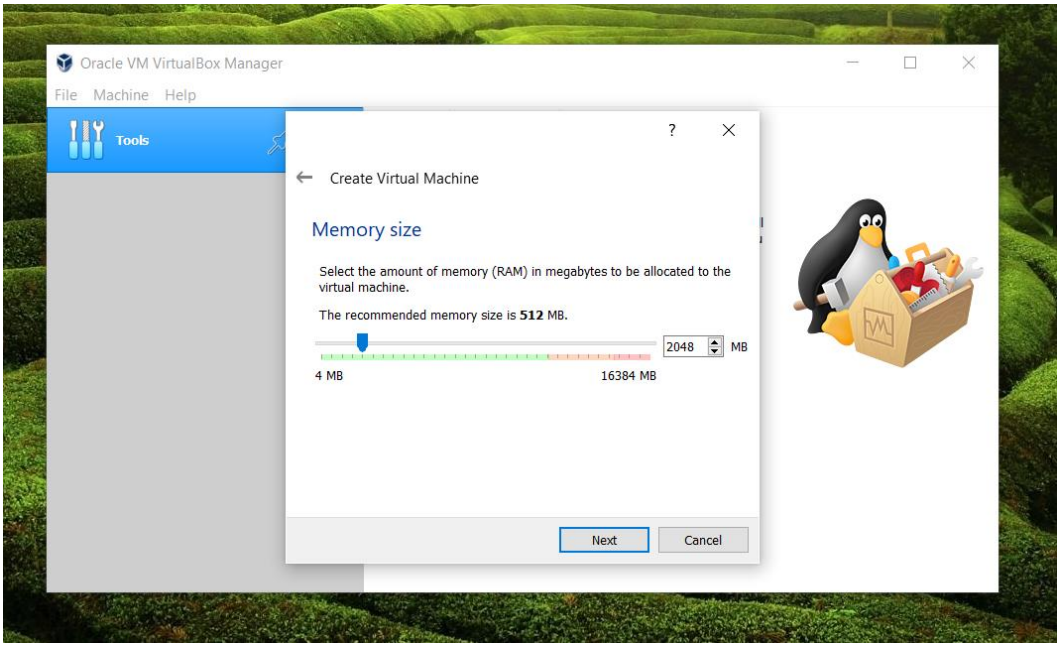

Figure 2: Choosing RAM size

3. Select "Create a virtual hard disk now" to create the har disk Mint will run on.

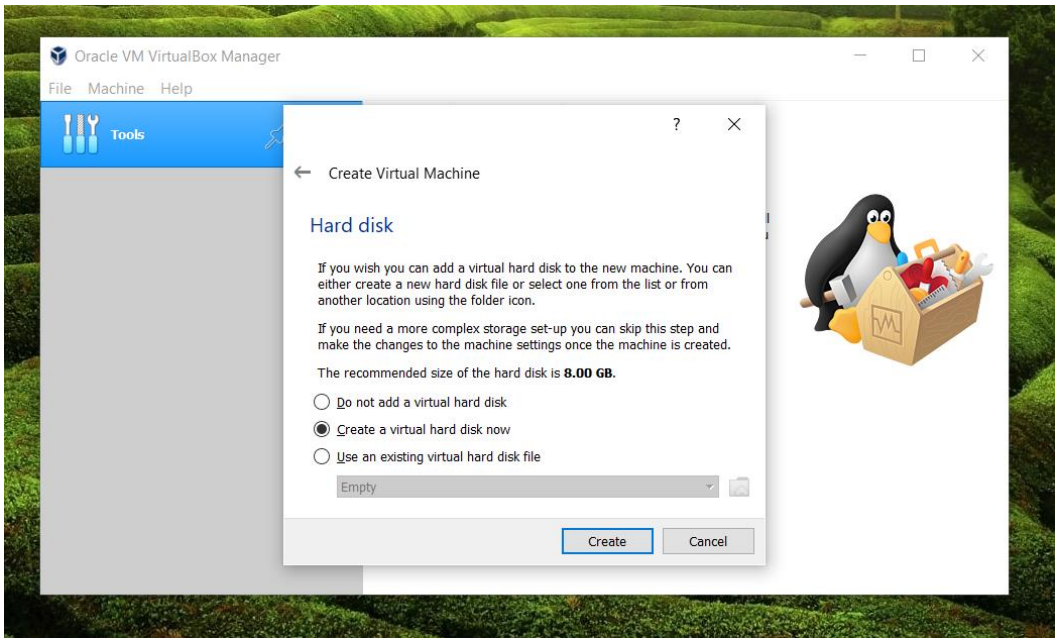

Figure 3: Creating the hard disk

4. Select "VDI (VirtualBox Disk Image)," this will allow you to use the .iso file downloaded from the Mint website.

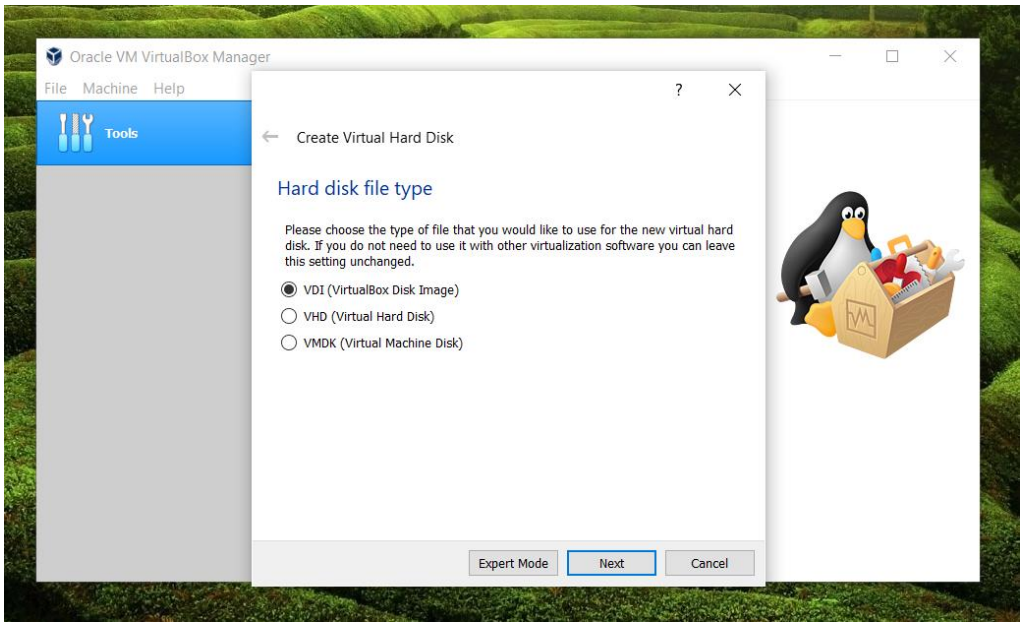

Figure 4: Choosing the type of hard disk

5. Select "Dynamically Allocated."

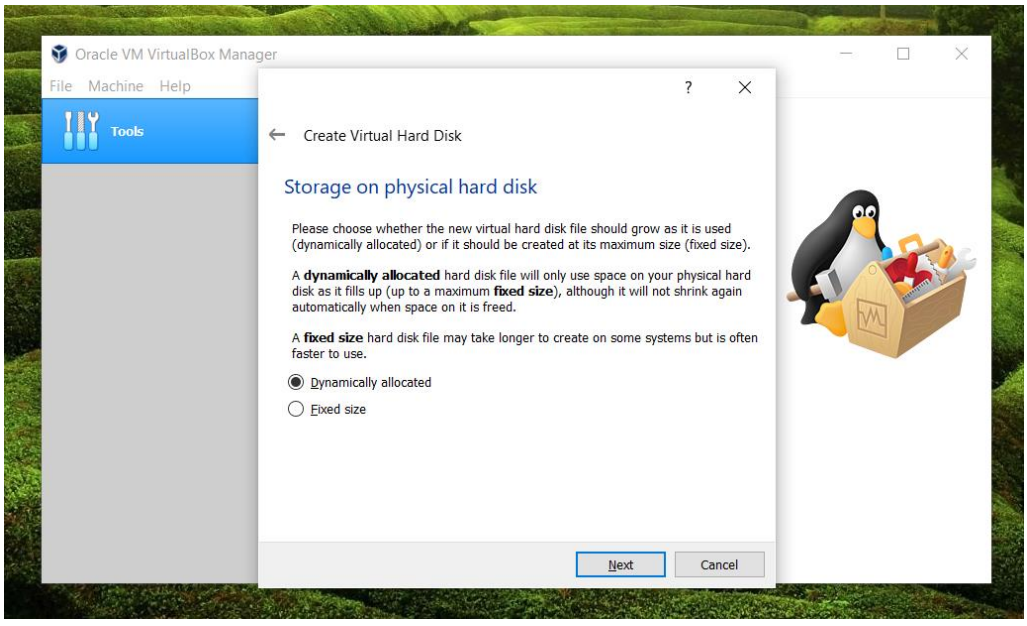

Figure 5: Choosing storage type.

6. Choose the default name and choose the size of the virtual disk. A minimum of 12GB is required for a full Mint install.

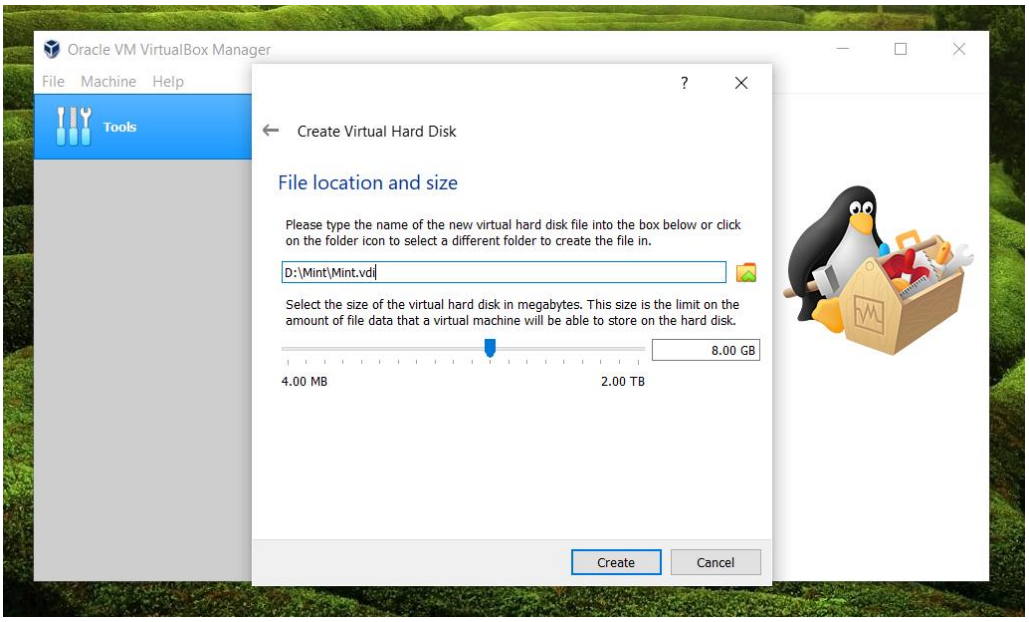

Figure 6: Default hard drive size

7. Right-click on "Optical Drive" and select "Choose/Create a Disk Image."

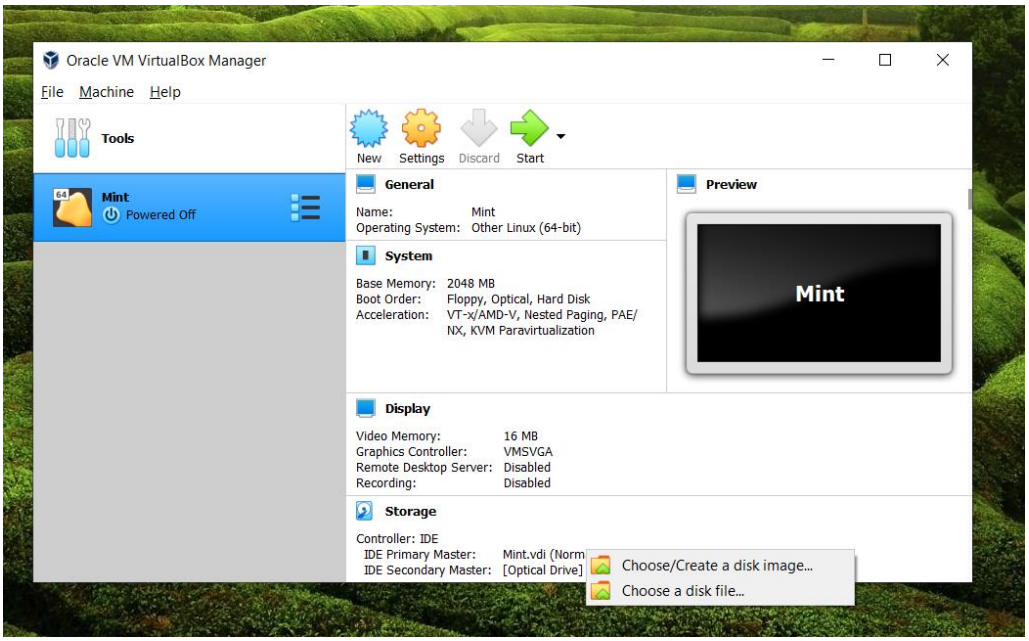

Figure 7: Mount the.iso file to the "Optical Drive."

8. Click "Create."

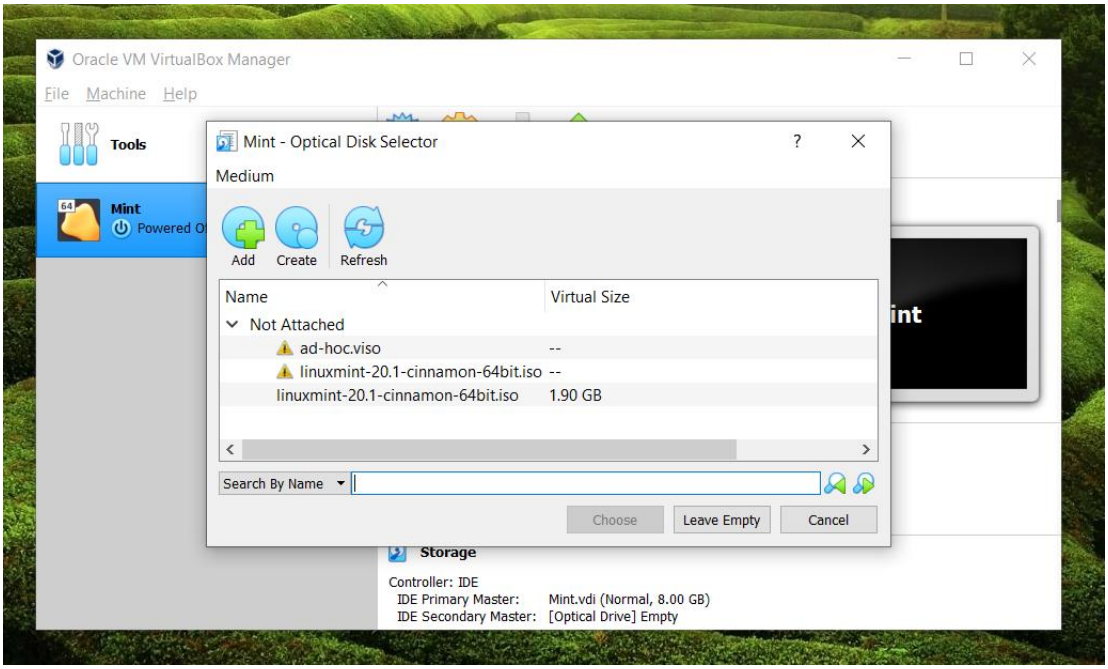

Figure 8: Mount the.iso file to the "Optical Drive."

9. Select the Mint disk image file.

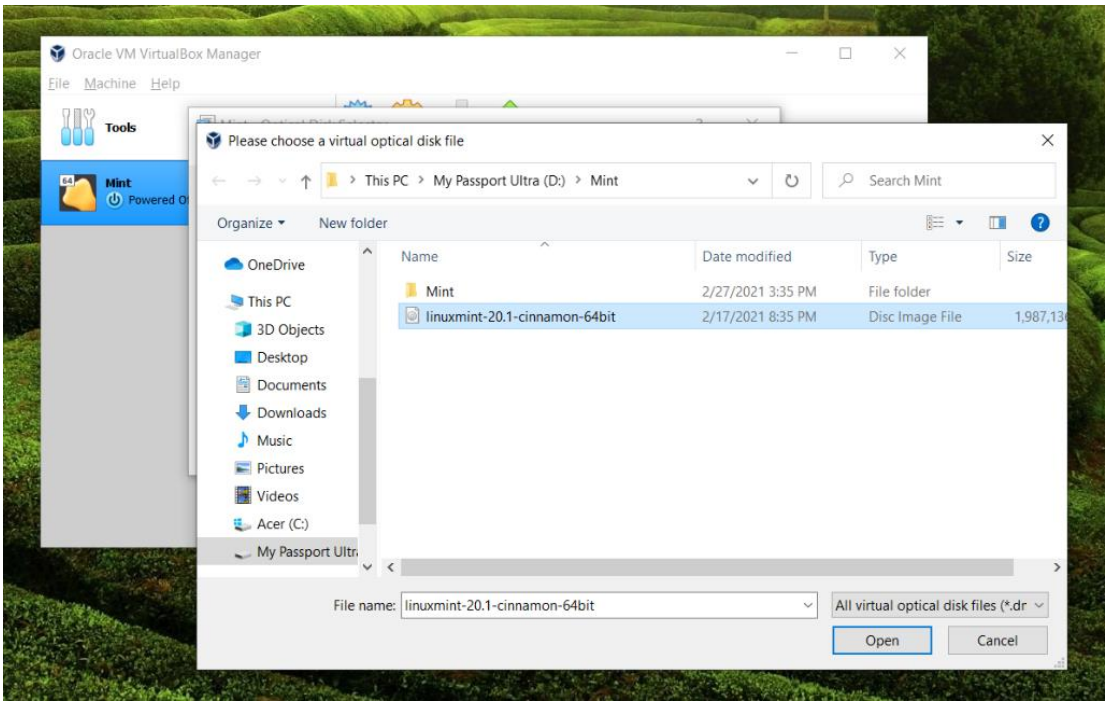

Figure 9: Select the Mint .iso file

10. Select the file again and press "Choose," this will mount it to the "optical drive."

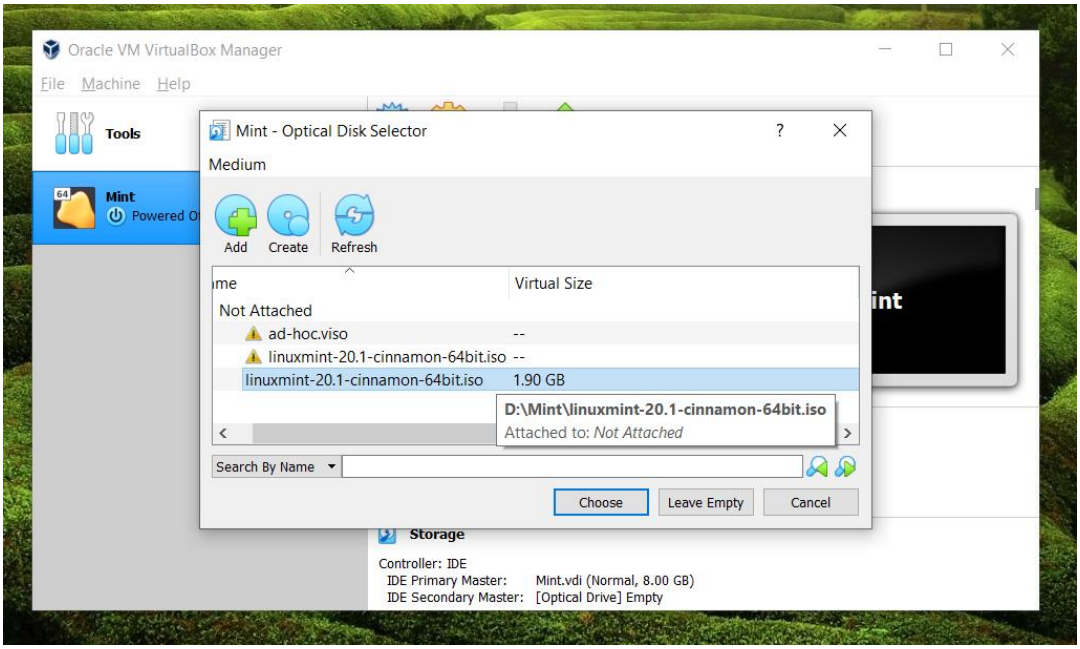

Figure 10: Mount the.iso file to the "Optical Drive."

11. Click "Start."

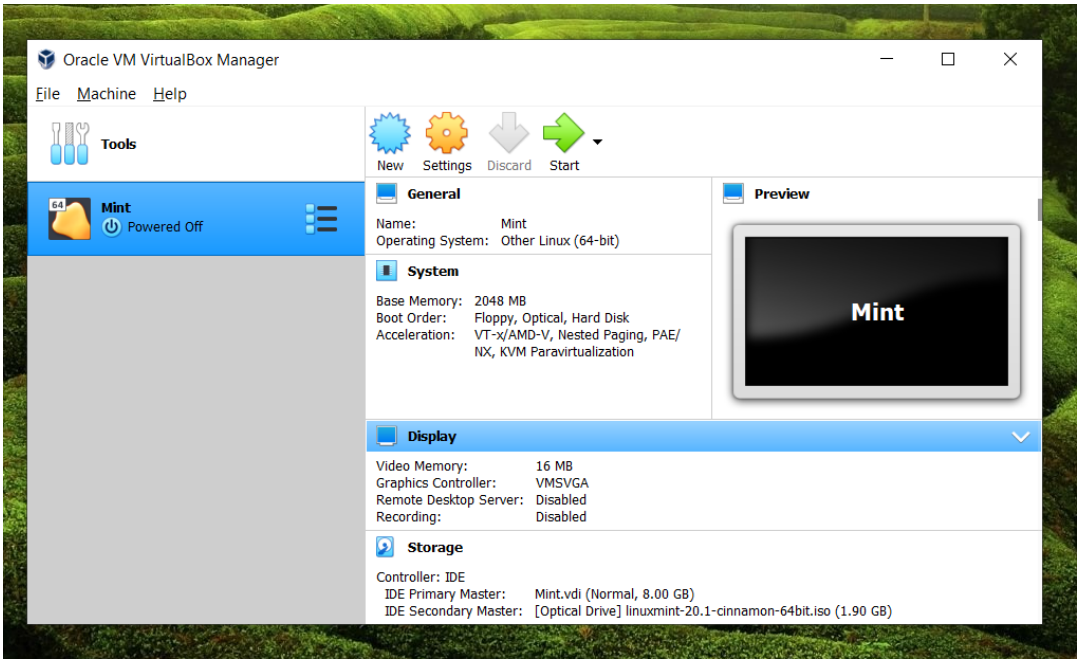

Figure 11: Initial boot

12. You can press "Enter" to boot instantly, or you can wait 10 seconds for Mint to boot automatically.

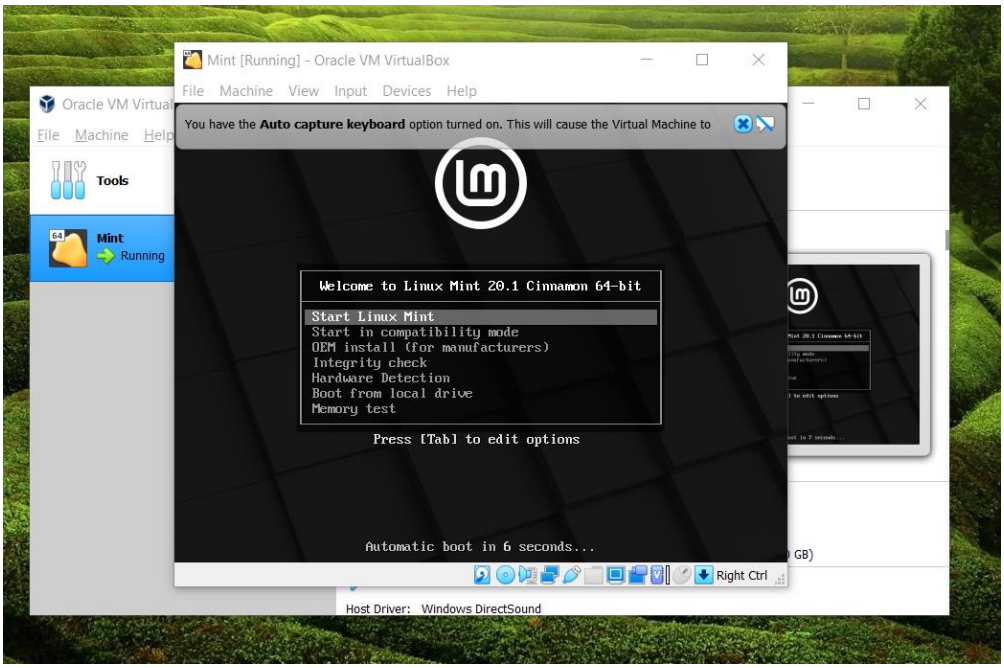

Figure 12: Initial boot

13. Double click "Install Linux Mint."

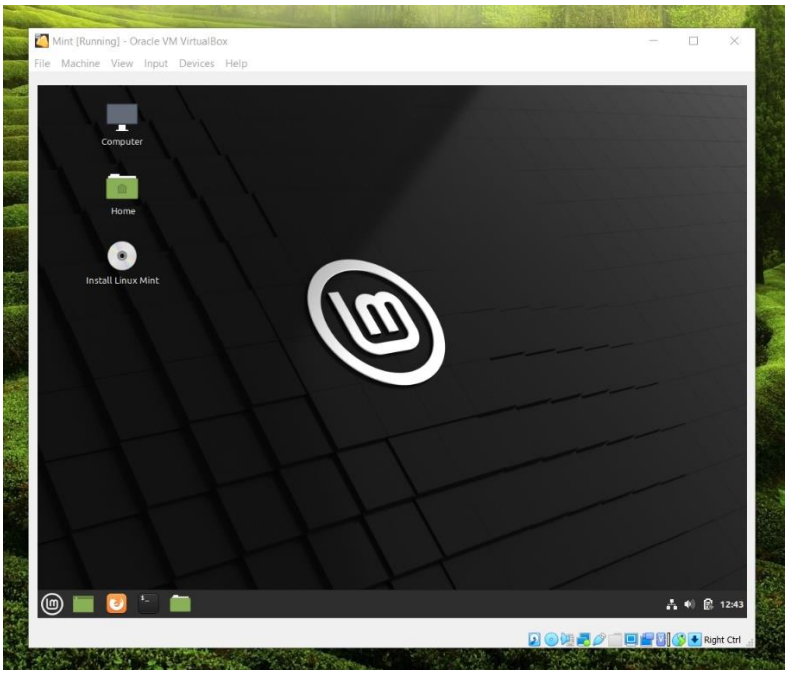

Figure 13: Permanent Install

14. Choose your Language.

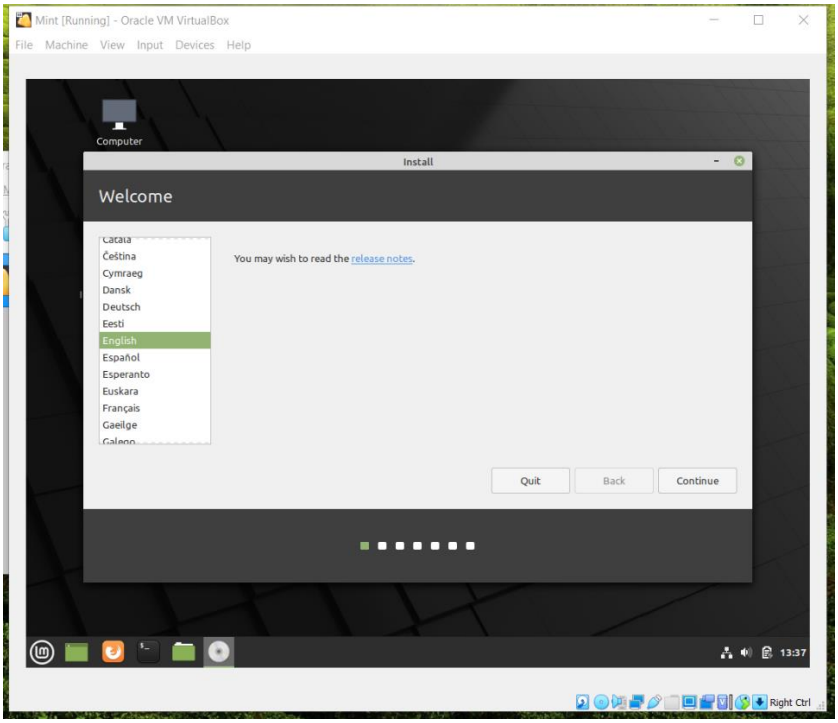

Figure 14: Language Selection

15. Choose your Keyboard Layout.

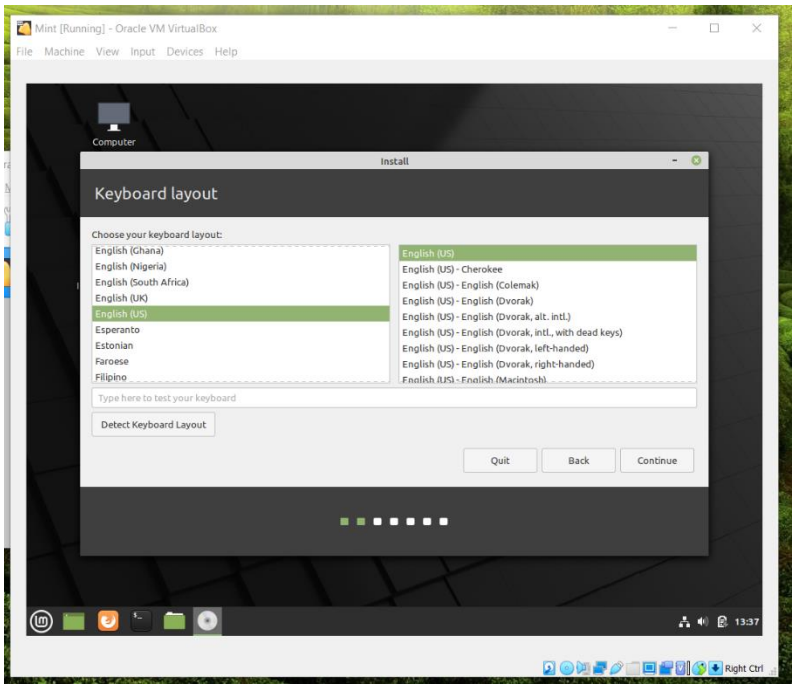

Figure 15: Keyboard Layout

16. Choose to install or not install Multimedia Codecs. Codecs allow for the play of different video formats and proper webpage loading.

17. Double click the virtual hard drive you want to use to install Mint and press continue. There should only be one.

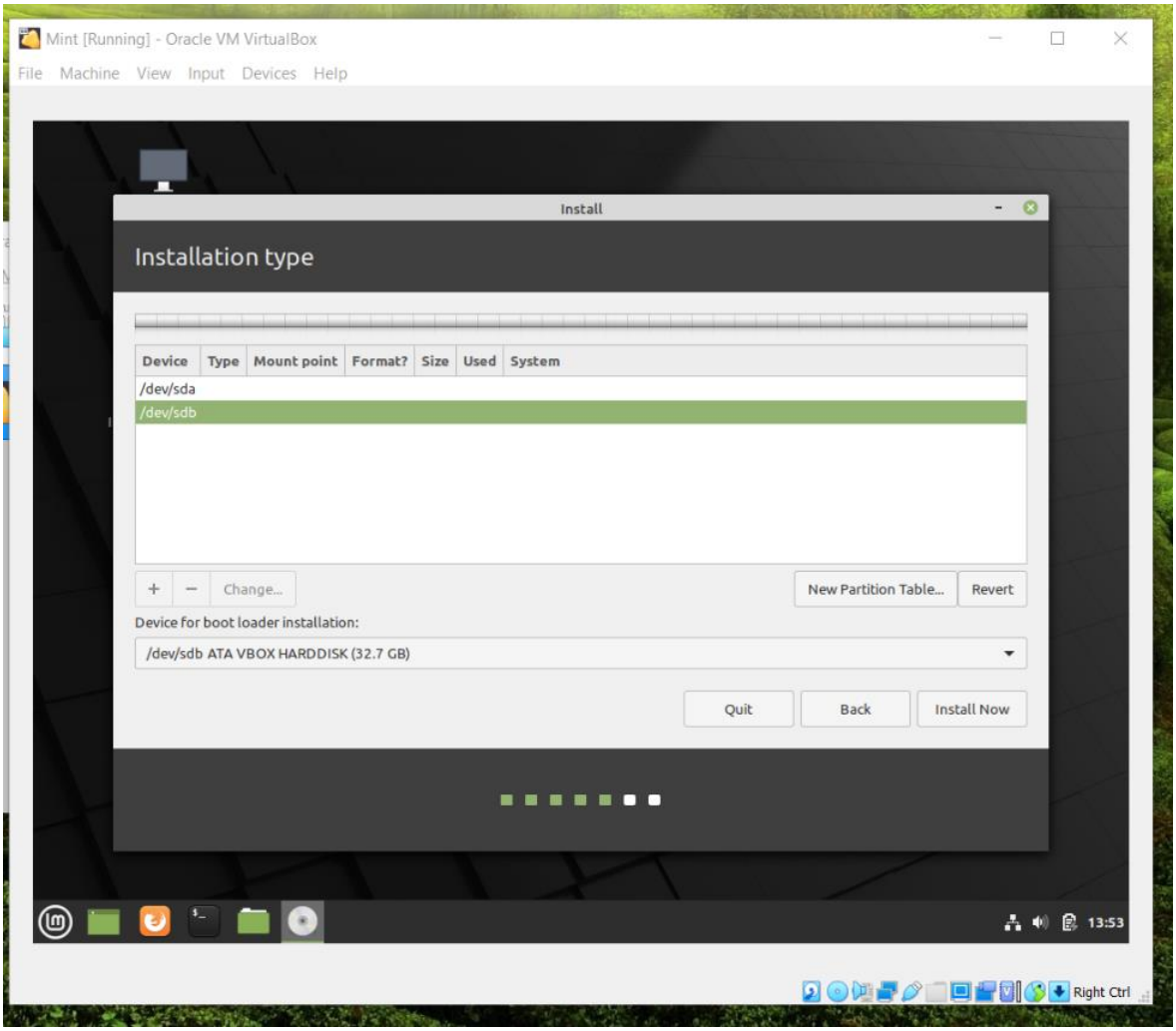

Figure 16: Select hard drive to partition

18. Select the available space and press the plus sign.

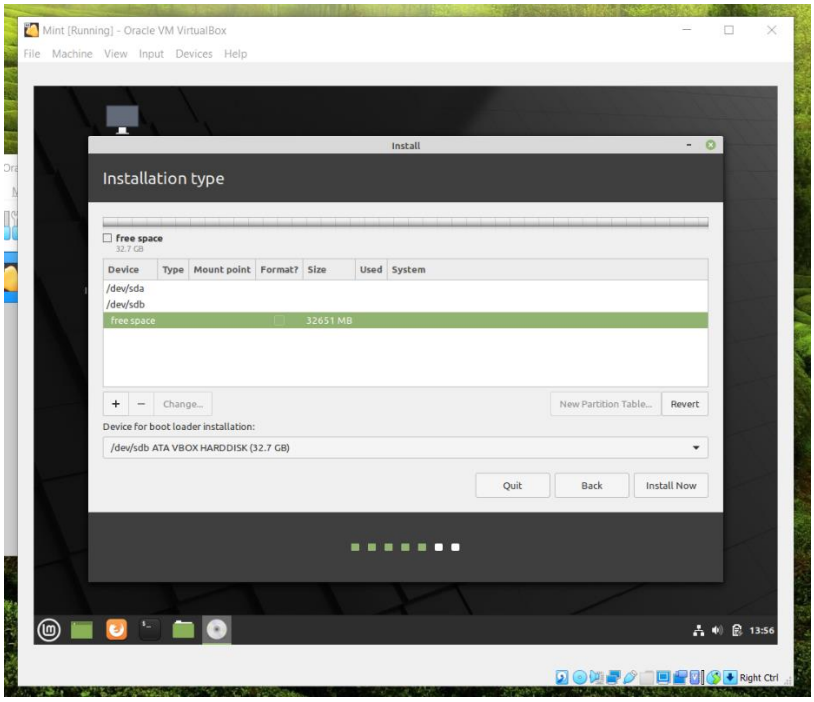

Figure 17: Select hard drive to partition

19. On the "Create Partition" screen. Select "/" as the Mount Point and click "Ok."

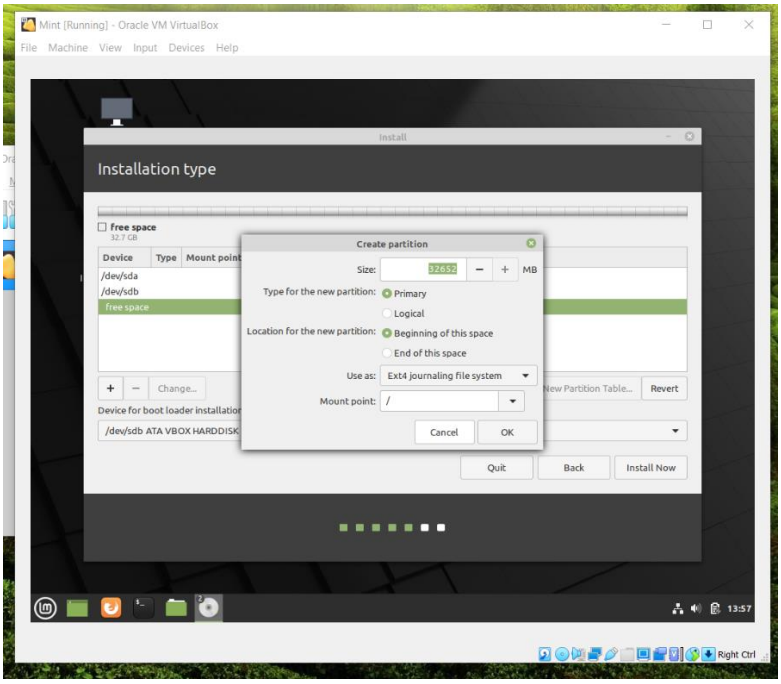

Figure 18: Partitioning the hard drive

20. Click "Install Now" and "Continue."
21. Select your Location and click "Continue."

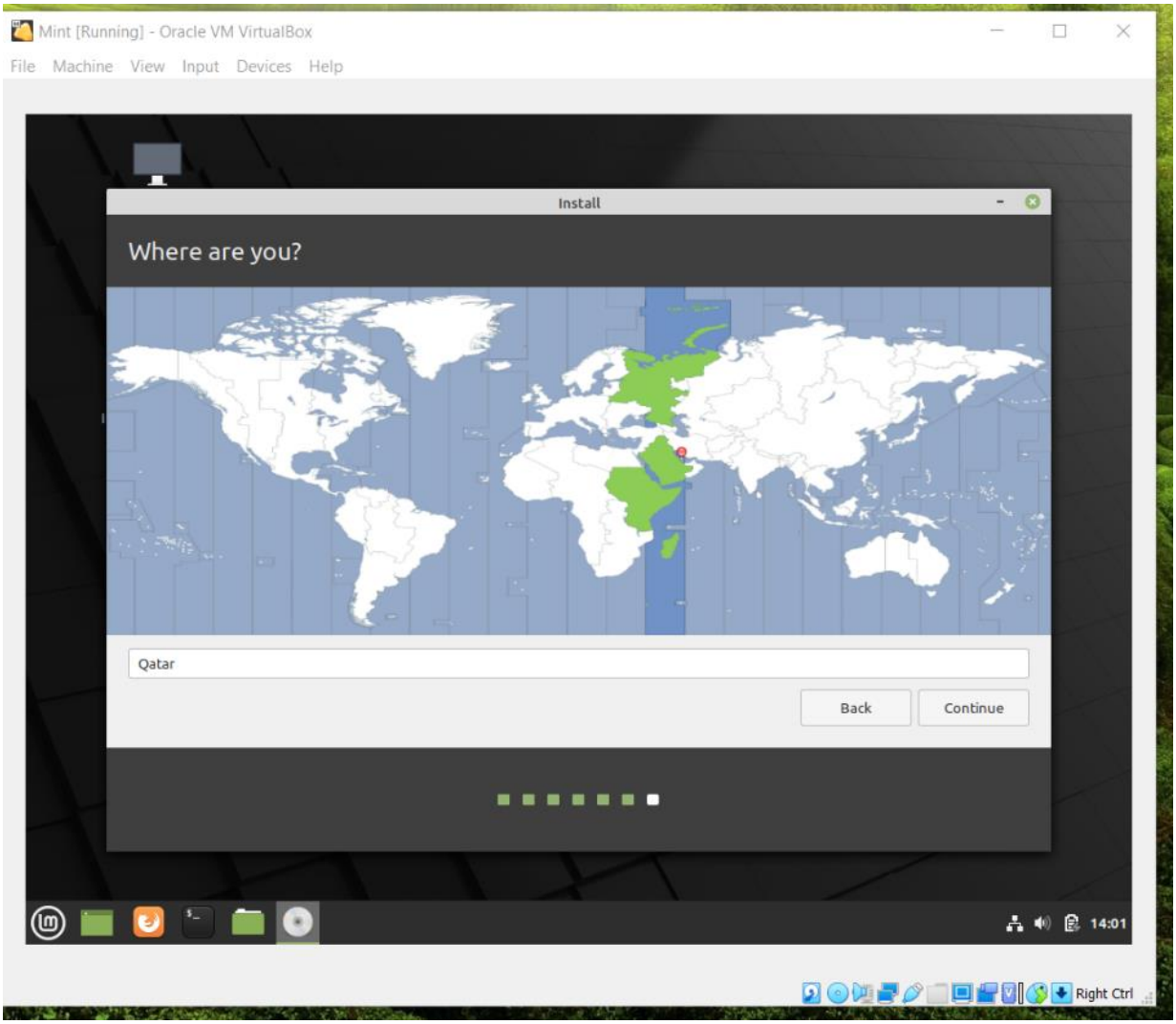

Figure 19: Choose Time Zone and Location

22. Fill in your information to create your user account and password. Click continue to install.

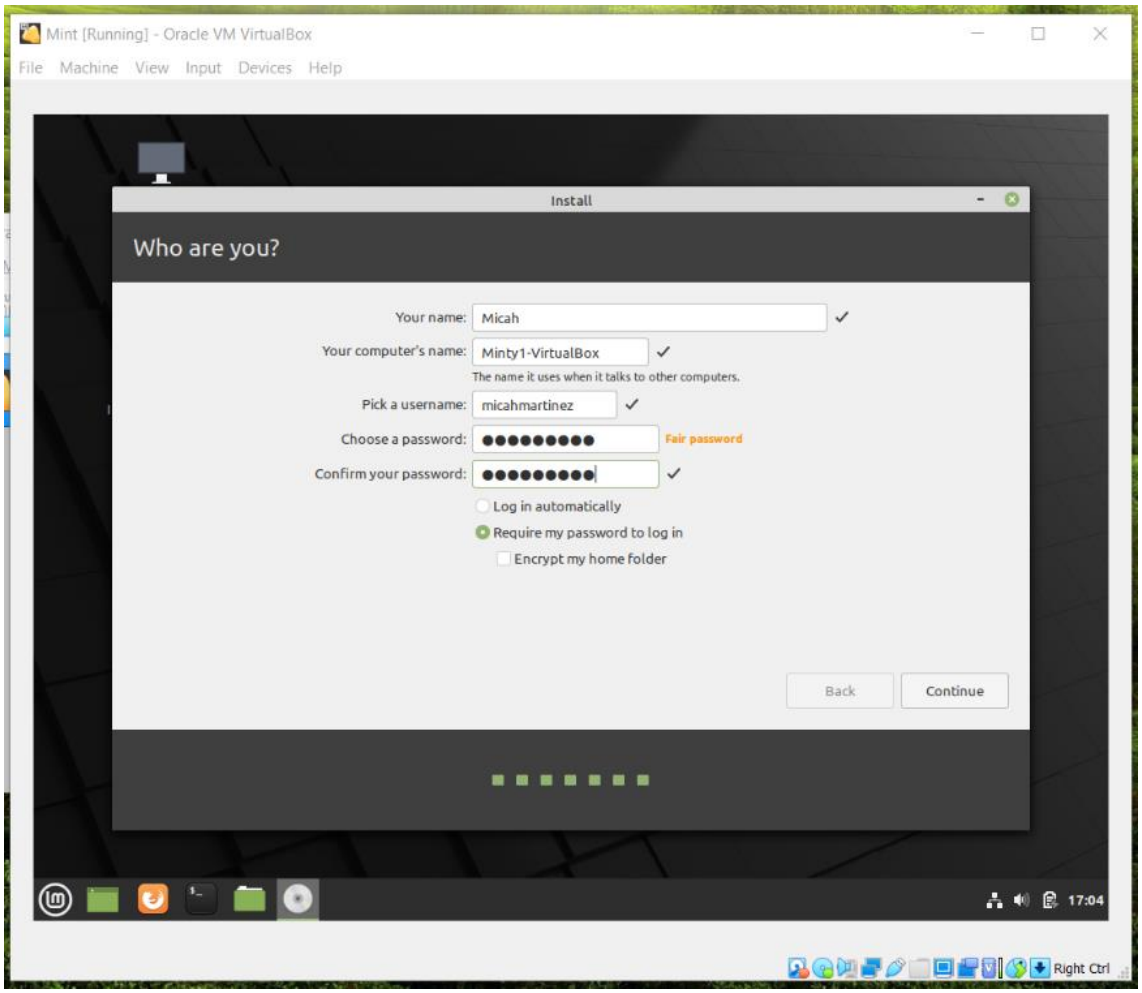

Figure 20: User name and password creation

23. Click "Restart Now."

Part 2

Common Linux Commands

Although Mint has a graphical user interface, it is good to know common Command Line Interface (CLI) commands. This next section will go over commonly used commands [1].

- To see the manual for any command, type `man [command]` in the CLI. The manual gives you a brief description of the command and any parameters that you can add to the command. You can scroll through the manual by pressing the down key. For example, `man ls` will bring up the manual page for `ls`. If you want a shortened version of the manual, you can type the command and add `--help | less` and use the down key to read line by line. Press `q` at any time to leave the manual.

Figure 21: man ls

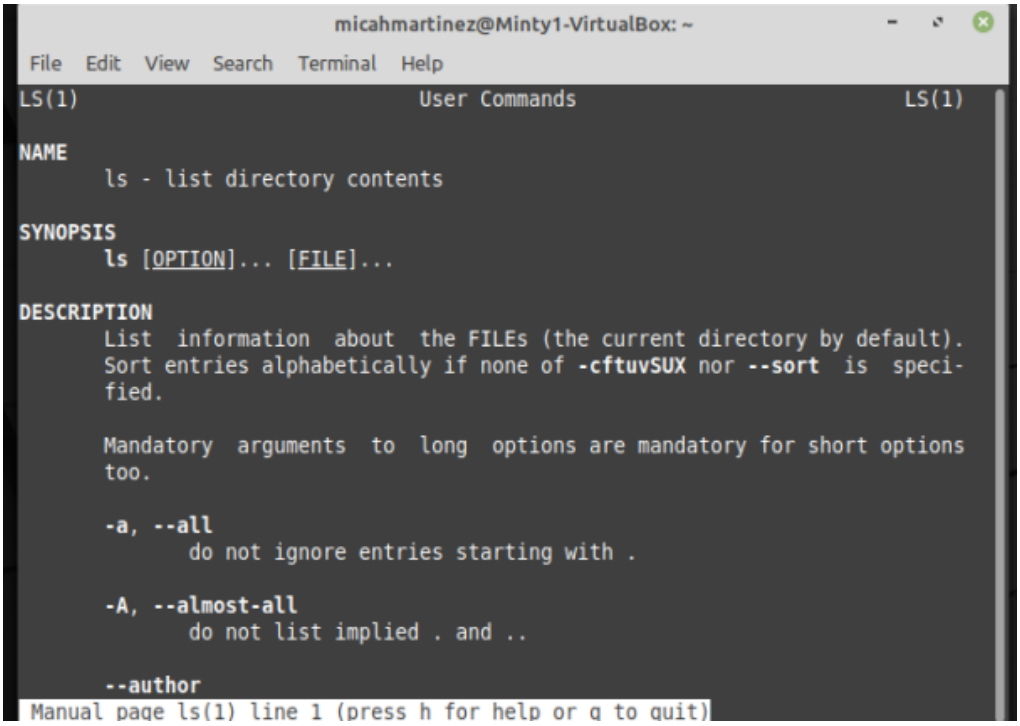

Figure 22: man ls output

- To show a list of files in a directory, type `ls` in the command line. If you want to see their attributes, you can type `ls -l`.

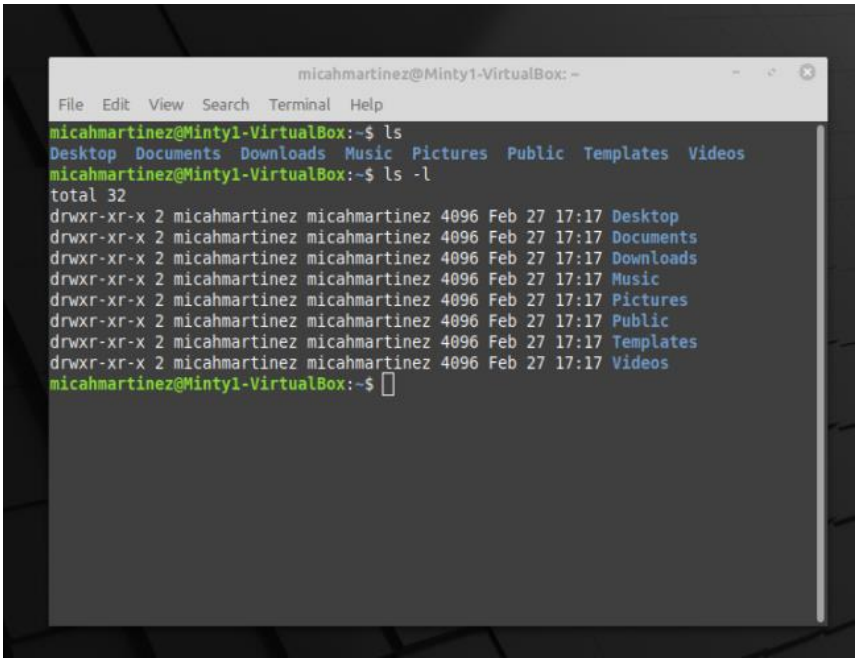

Figure 23: ls and ls -l output

- Type `pwd` if you want to see the directory that you are in currently.

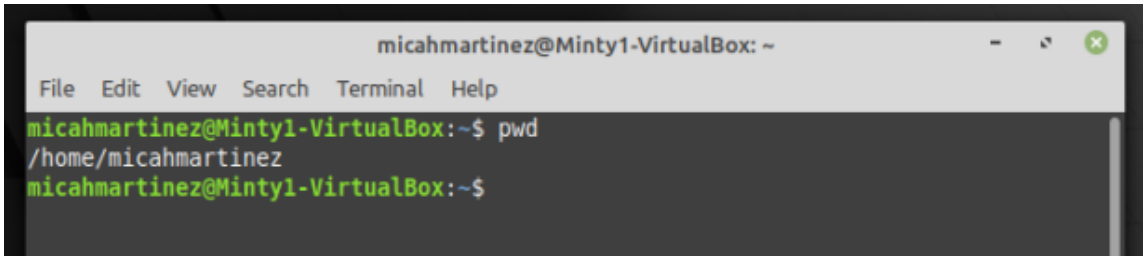

Figure 24: pwd output

- To create a file, use the command touch. For example, `touch beef` and `touch chicken`. Two files will be made if you separate the words; `touch barbeque pork` will create a barbeque file and a file called beef. If you want a space in the name, you must include single quotes around the filename, `touch barbeque\ pork`. Most special characters can be used in file names, but a few require special formatting [2].

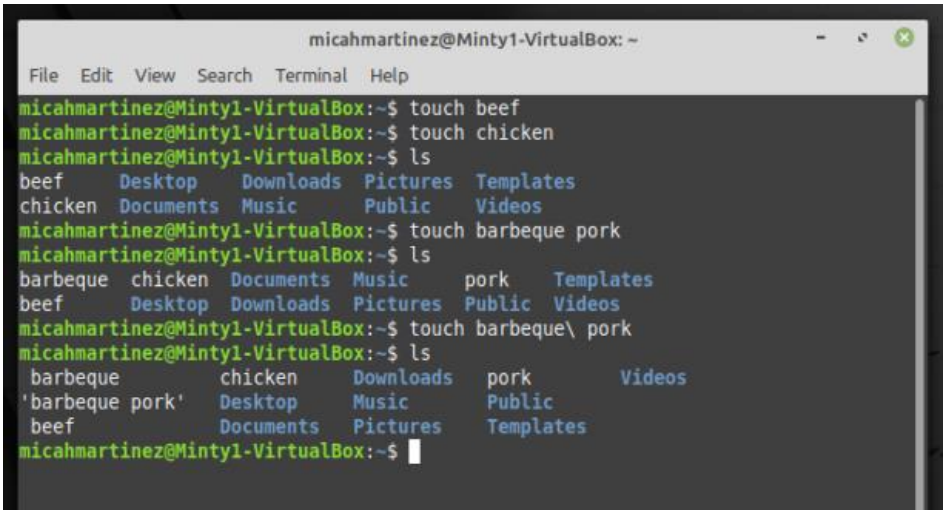

Figure 25: File Creation

- To copy a file using the CLI, enter `cp [filepath] [destination]`. Moving the file uses the same format, but the command is `mv` instead of `cp`. For example, `cp beef \recipes` will copy the beef file to the recipes directory, and `mv pork \recipes` will move the file to the recipes directory.

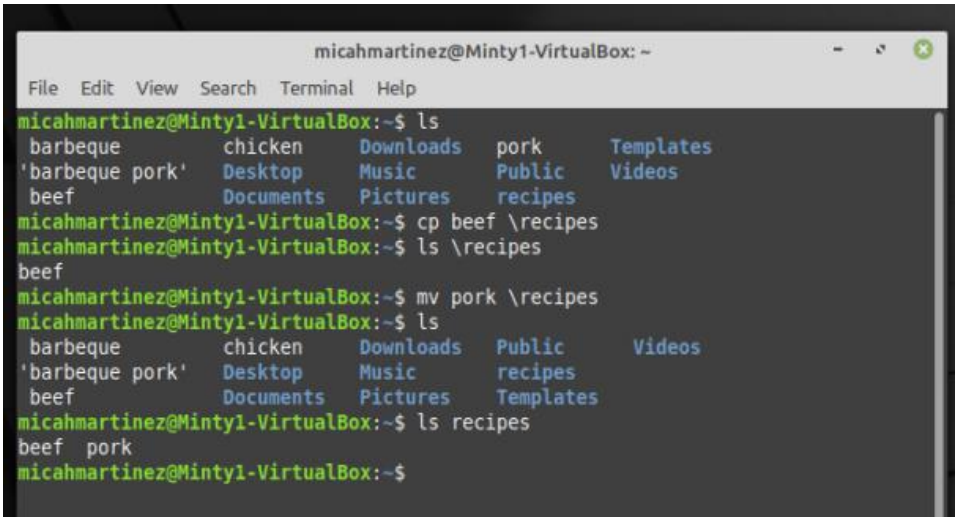

Figure 26: Copy and move files

- If you want to remove a file, the command is `rm [filepath]`. If you want to remove multiple files, separate the file names with a space. For example, `rm beef` removes the beef file from your current directory, and `rm recipes/beef` removes the beef file from the recipe directory.

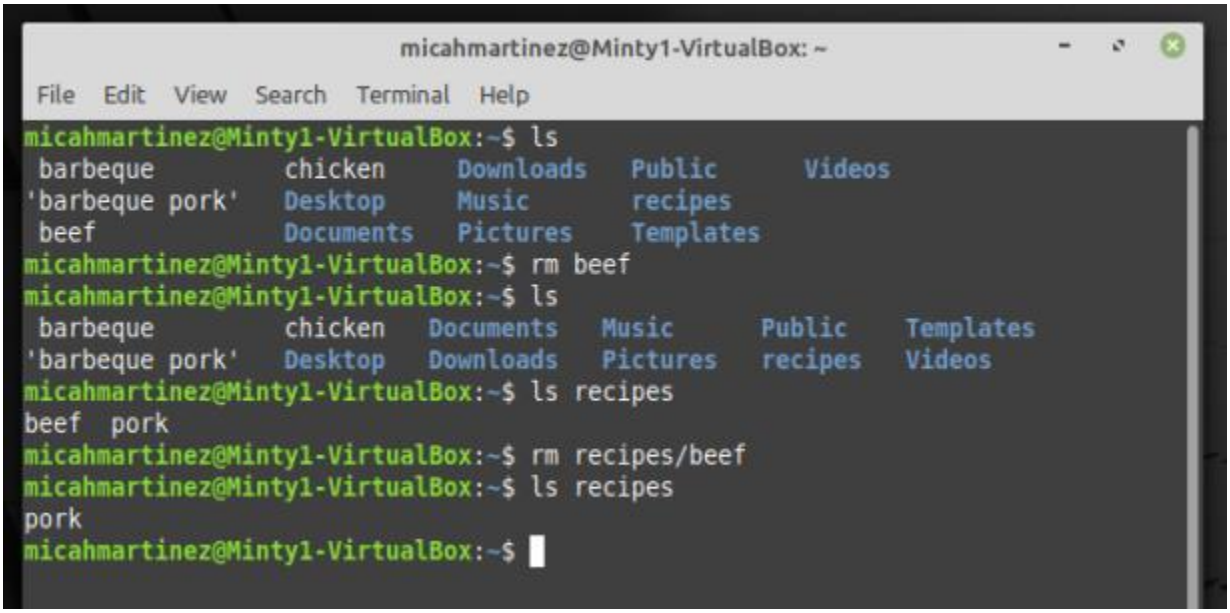

Figure 27: File deletion

- Making a text file is simple. Type `nano [filename]` to open the nano editor. Type in the text. When you want to exit, press `CTRL + X`, then press `y`, then `ENTER` to save and exit or `n` then `ENTER` to exit without saving. To display the contents of the text file, type `cat Filename]. nano Fondue` creates a text file named Fondue. The current directory is "Desktop," so the text file will show up on the desktop. Using `cat [filename]` will display the contents of a text file in the command line

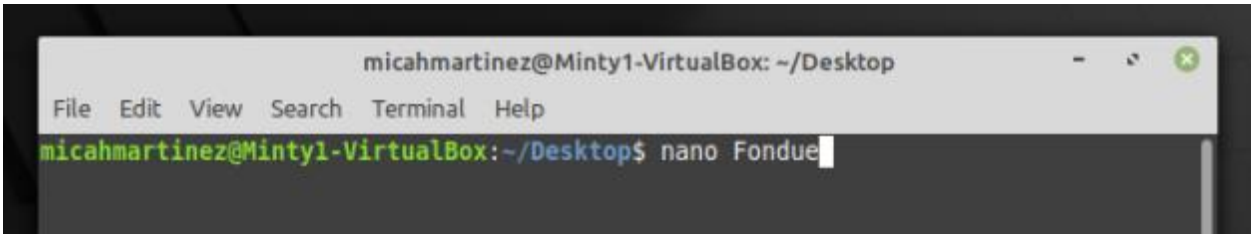

Figure 28: nano command

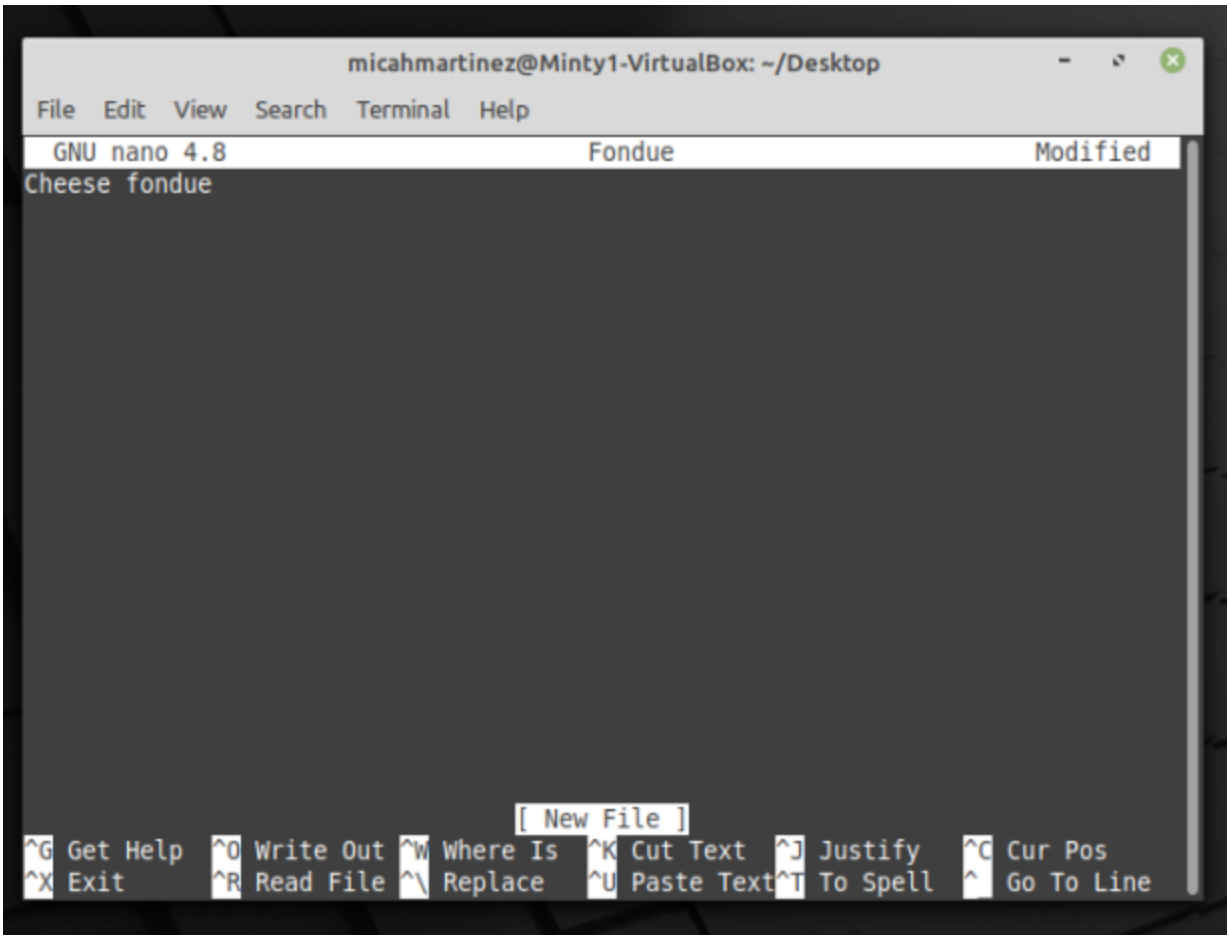

Figure 29: nano output and text editor

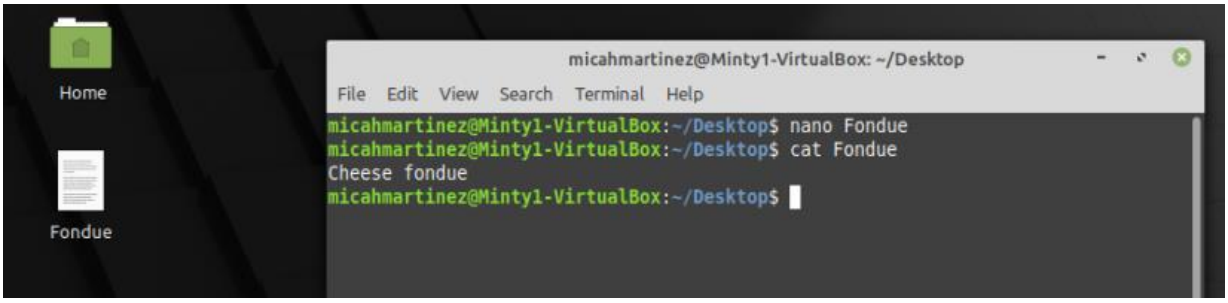

Figure 30: cat command output for the file "Fondue," text file on the desktop

- To see all processes, type `top`. To find a specific process, type `pgrep [process name]` or `pidof [process name]`. `pidof` finds all processes associated with Firefox, while `pgrep` will find the main process [3]. For example, `pgrep firefox` and `pidof firefox`.

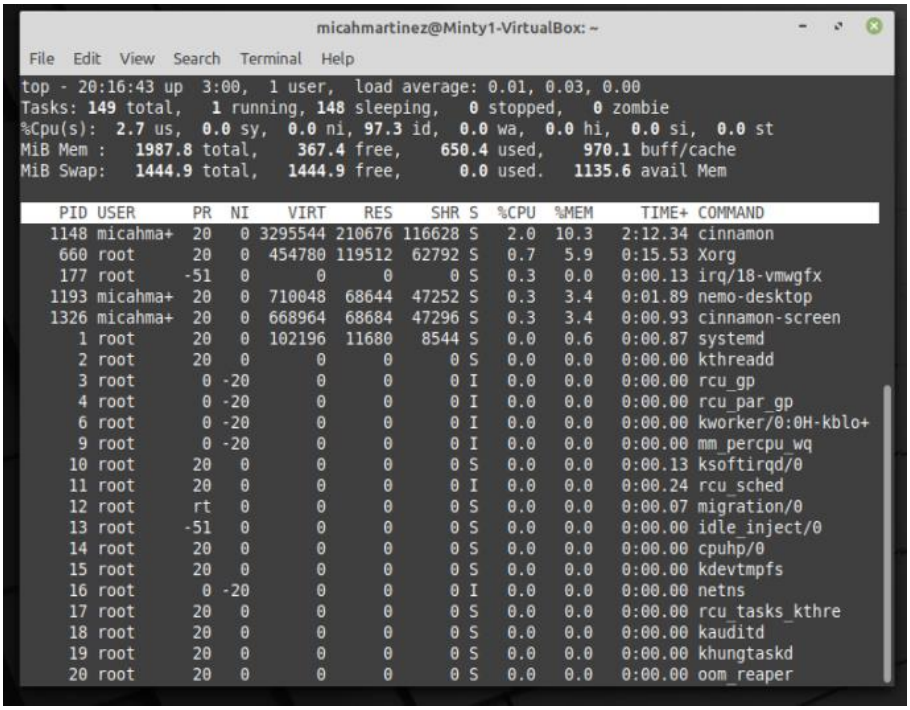

Figure 31: top output

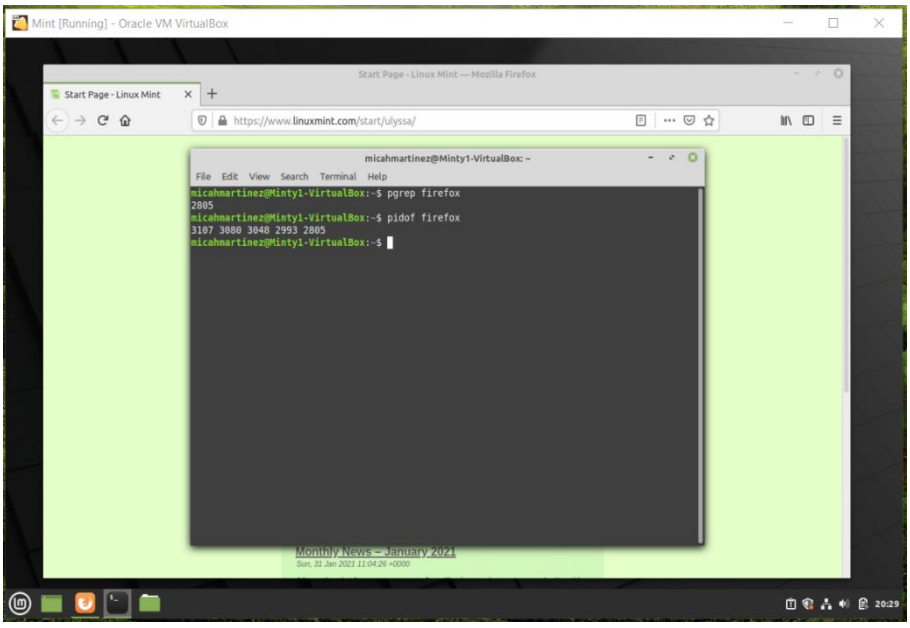

Figure 32: pgrep firefox and pidof firefox output with firefox in the background

- To forcibly stop a process type `kill [process name]` In the picture below, we forcibly stop Firefox.

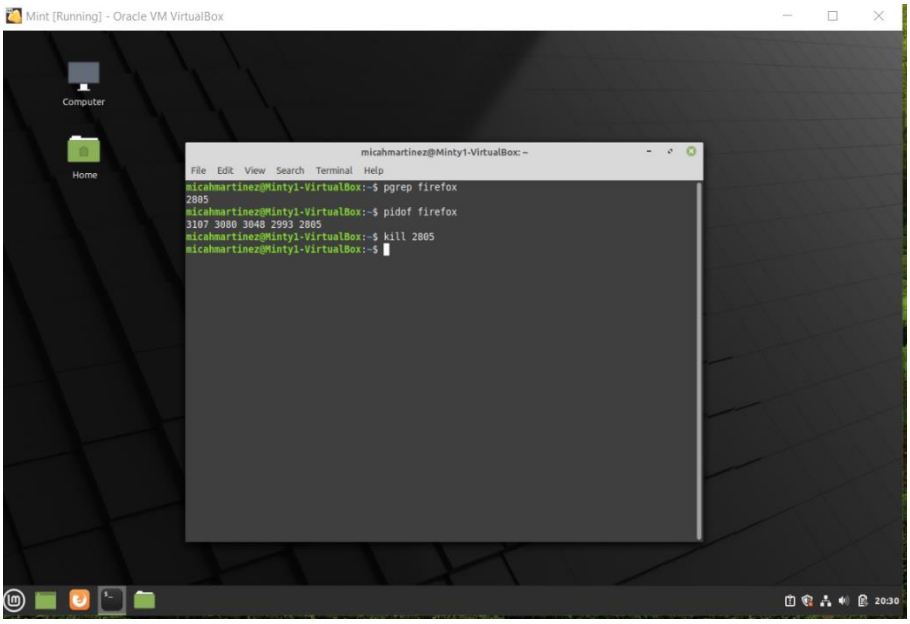

Figure 33: kill command to close Firefox forcibly

- I know there were concerns about automatic updates. To enable automatic updates click on the Start Menu > Administration > Update Manager > Edit > Preferences > Automation.

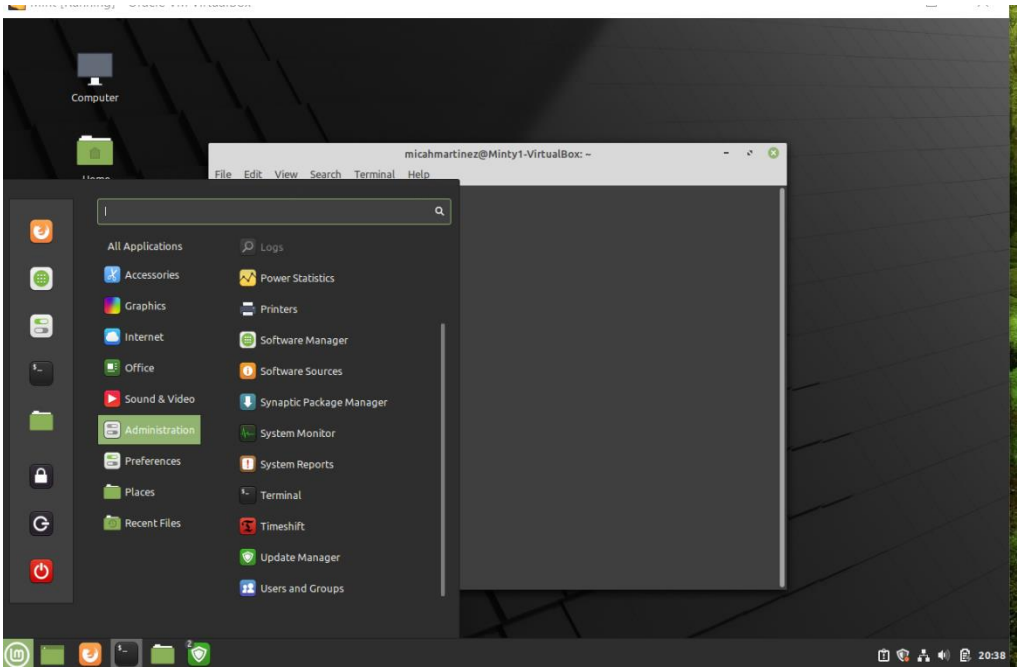

Figure 34: Start menu

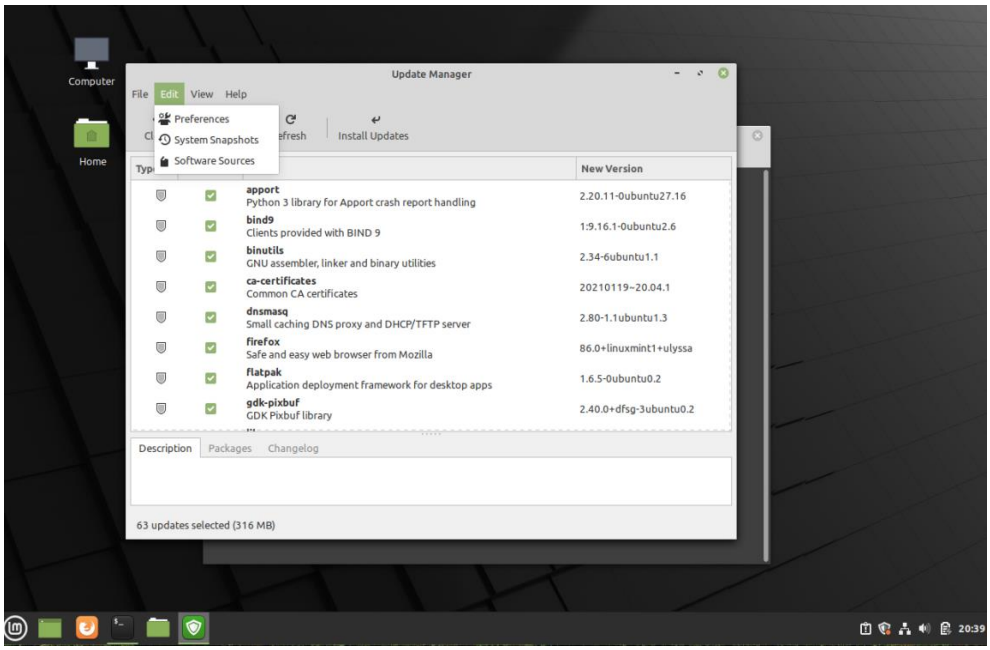

Figure 35: Update Manager

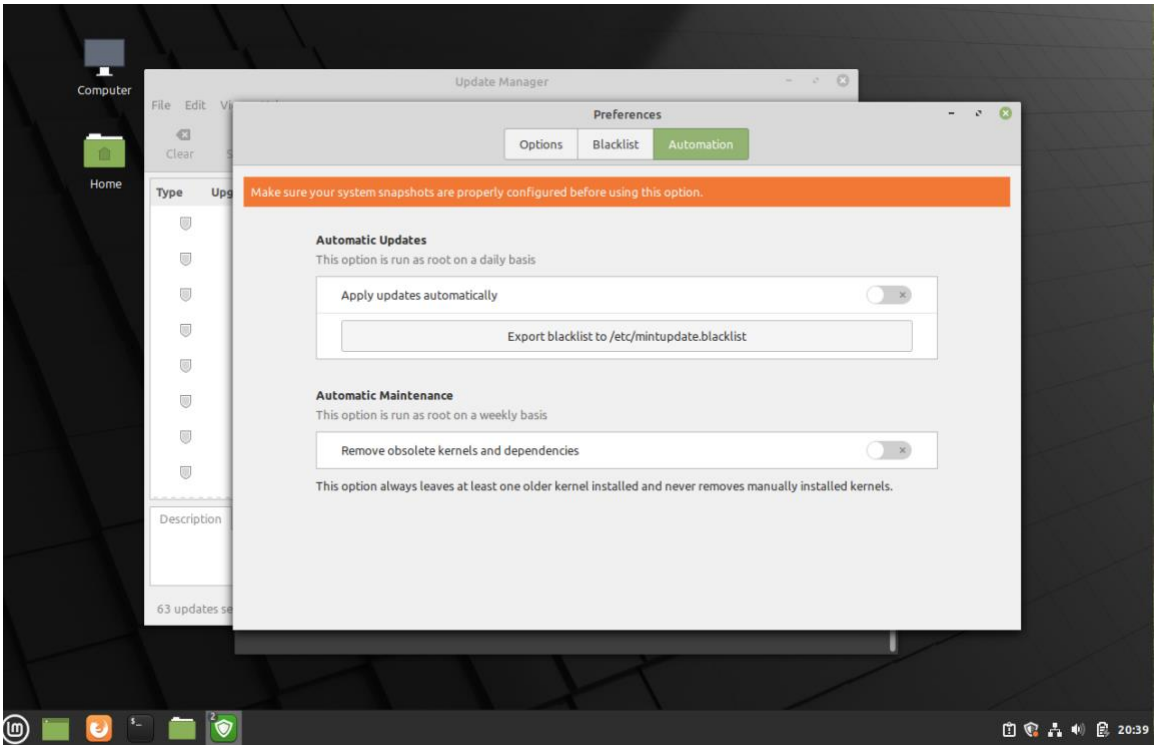

Figure 36: Automatic update manager

Part 3

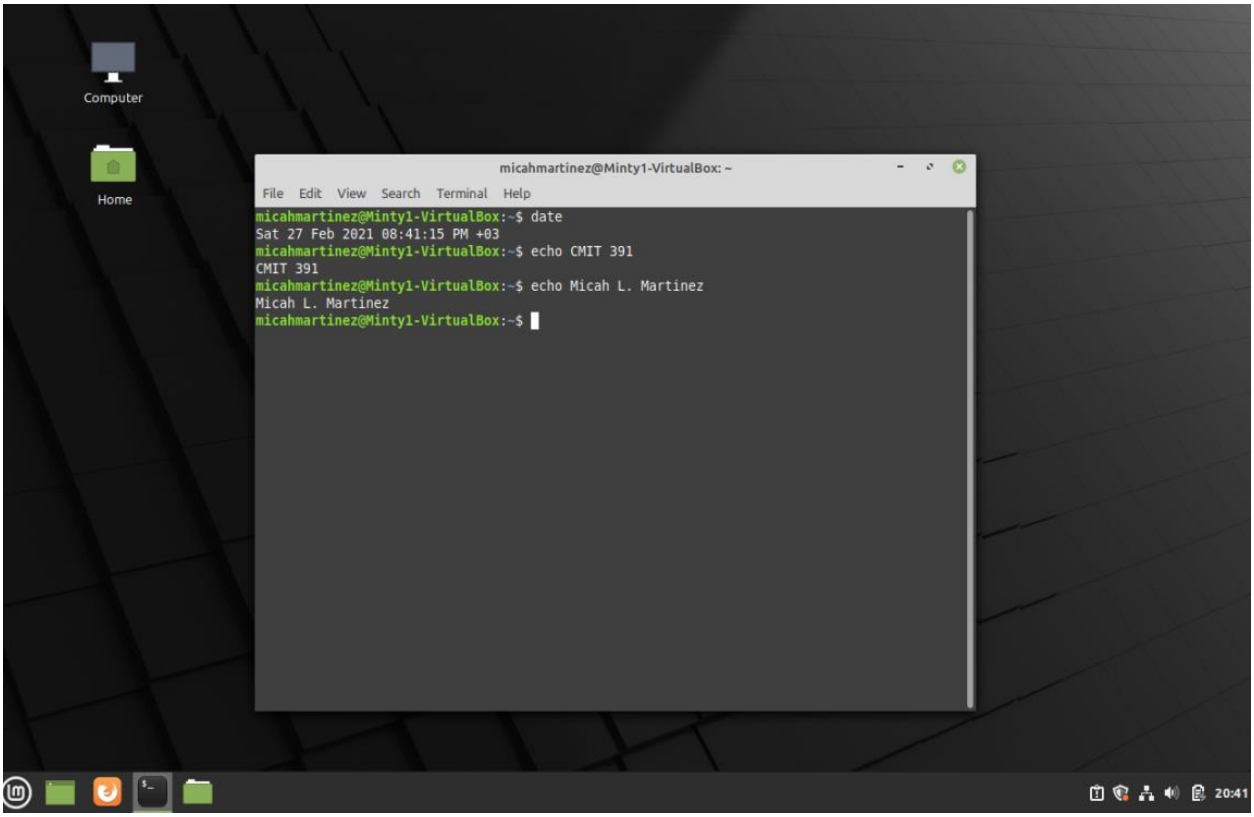

Figure 37: Final Screenshot

Conclusion

As you can see, virtualization is a powerful tool. Virtualization allows for troubleshooting and training on multiple operating systems with a single computer without the worry of causing irreparable damage to the system. Allowing you to keep business running while your employees get used to Linux before the migration. Once again, thank you for choosing Go2Linux, and please feel free to contact Go2Linux for any of your Linux needs.

References

[1] S. Simic, "Linux Commands Cheat Sheet: With Examples," phoenixNAP, 21 February 2020. [Online]. Available: https://phoenixnap.com/kb/linux-commands-cheat-sheet#htoc-process-related. [Accessed 27 February 2021].

[2] TecMint, "How to Manipulate Filenames Having Spaces and Special Characters in Linux," TecMint, 27 January 2017. [Online]. Available: https://www.tecmint.com/manage-linux-filenames-with-special-characters/. [Accessed 27 February 2021].

[3] V. Gite, "Linux find process by name," NixCraft, 8 January 2018. [Online]. Available: https://www.cyberciti.biz/faq/linux-find-process-name/. [Accessed 27 February 2021].