



LNJN National Institute Of Criminology
And Forensic Science

NATIONAL FORENSICS SCIENCE UNIVERSITY



PYTHON AND SCRIPTING

BASH SHELL ASSIGNMENT

SUBMITTED BY

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LAB 02

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AIM: - Introduction to BASH Shell and installation of VirtualBox and Ubuntu.

Software Required: - VirtualBox and Ubuntu.

Theory:-

VirtualBox is a powerful x86 and AMD64/Intel64 virtualization product for enterprise as well as home use. Not only is VirtualBox an extremely feature rich, high performance product for enterprise customers, it is also the only professional solution that is freely available as OpenSource Software under the terms of the GNU General Public License (GPL) version 2.

Presently, VirtualBox runs on Windows, Linux, Macintosh, and Solaris hosts and supports a large number of guest operating systems including but not limited to Windows, DOS/Windows 3.x, Linux (2.4, 2.6, 3.x and 4.x).

Ubuntu is a Linux distribution based on Debian and composed mostly of free and open-source software. Ubuntu is officially released in three editions: Desktop, Server, and Core for Internet of things devices and robots. All the editions can run on the computer alone, or in a virtual machine.

Installation of Ubuntu on VirtualBox

Download VirtualBox (250 MB)

- Windows: <https://download.virtualbox.org/virtualbox/6.1.12/VirtualBox-6.1.12-139181-Win.exe>
- MacOS: <https://download.virtualbox.org/virtualbox/6.1.12/VirtualBox-6.1.12-139181-OSX.dmg>

Download Ubuntu Image File (2.6 GB)

- Option 1: <https://ubuntu.com/download/desktop>
- Option 2: <https://releases.ubuntu.com/20.04/ubuntu-20.04.1-desktop-amd64.iso.torrent>

System Requirements

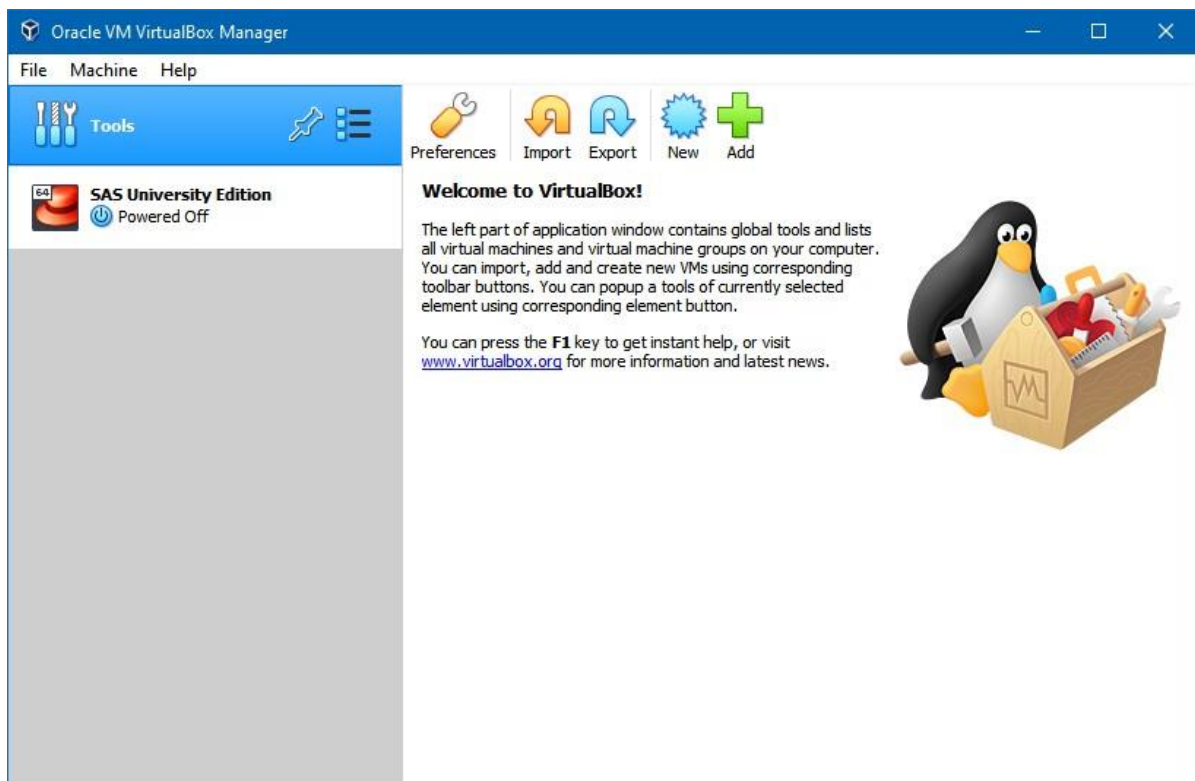
- >4GB RAM Recommended.
- CPU manufactured after 2010.
- Internet Connection.
- >20GB Disk Space.

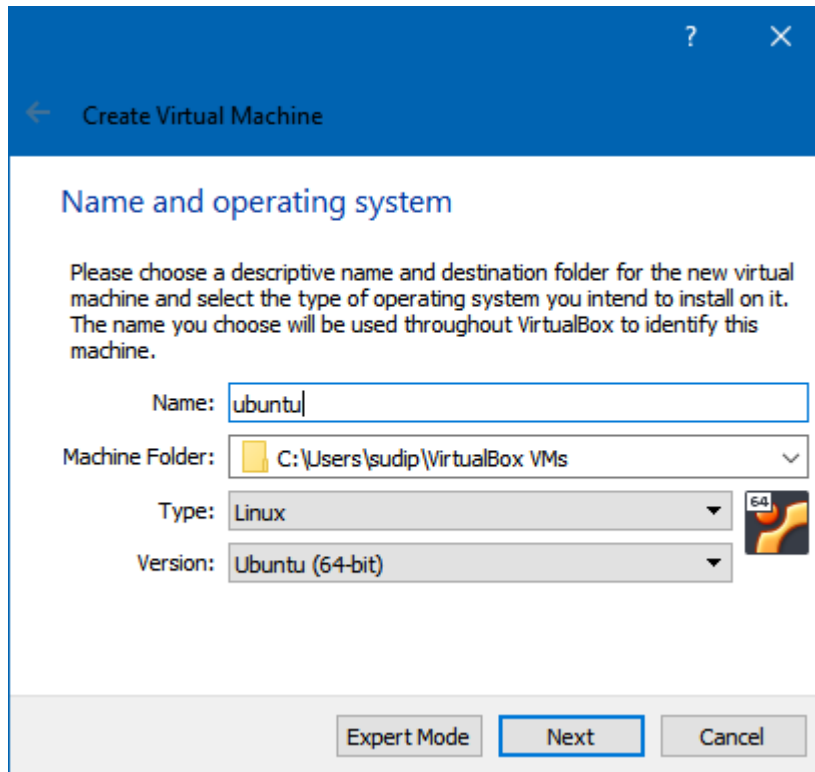
Install VirtualBox

Trivial. Click Next to accept defaults.

Create Virtual Machine

- Open VirtualBox and click on NEW.
- Give a name to the machine and select.





The screenshot shows the 'Create Virtual Machine' window with the 'Name and operating system' tab selected. The window has a blue header bar with a back arrow, a question mark, and a close button. The title bar says 'Create Virtual Machine'. Below the header, the title 'Name and operating system' is displayed. A paragraph of instructions follows: 'Please choose a descriptive name and destination folder for the new virtual machine and select the type of operating system you intend to install on it. The name you choose will be used throughout VirtualBox to identify this machine.' There are four input fields: 'Name' with the text 'ubuntu', 'Machine Folder' with the path 'C:\Users\sudip\VirtualBox VMs', 'Type' with 'Linux' selected, and 'Version' with 'Ubuntu (64-bit)' selected. To the right of the 'Type' and 'Version' dropdowns is a small icon of a Linux kernel with '64' in a box. At the bottom, there are three buttons: 'Expert Mode', 'Next' (highlighted with a blue border), and 'Cancel'.


Create Virtual Machine

Name and operating system

Please choose a descriptive name and destination folder for the new virtual machine and select the type of operating system you intend to install on it. The name you choose will be used throughout VirtualBox to identify this machine.

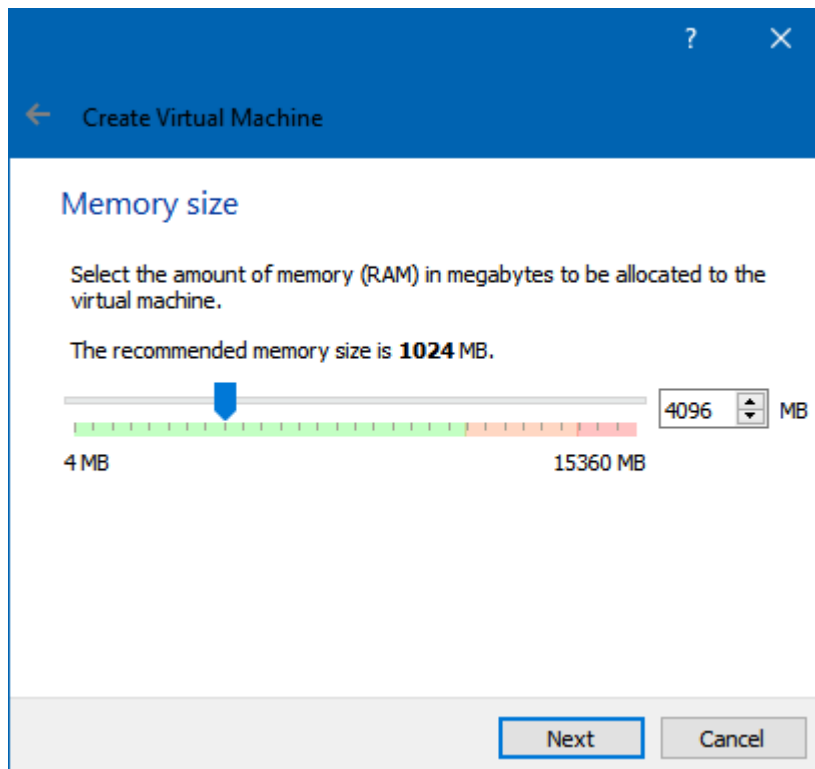
Name:

Machine Folder:

Type: 

Version:

- Allot at least 2GB of Memory to the VM. Do not go the red zone.



The screenshot shows the 'Create Virtual Machine' window with the 'Memory size' tab selected. The window has a blue header bar with a back arrow, a question mark, and a close button. The title bar says 'Create Virtual Machine'. Below the header, the title 'Memory size' is displayed. A paragraph of instructions follows: 'Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.' Below this, it says 'The recommended memory size is 1024 MB.' There is a horizontal slider bar with a blue handle. The slider has a green section on the left and a red section on the right. The left end is labeled '4 MB' and the right end is labeled '15360 MB'. To the right of the slider is a numeric input field with the value '4096' and a unit 'MB'. At the bottom, there are two buttons: 'Next' (highlighted with a blue border) and 'Cancel'.

Create Virtual Machine

Memory size

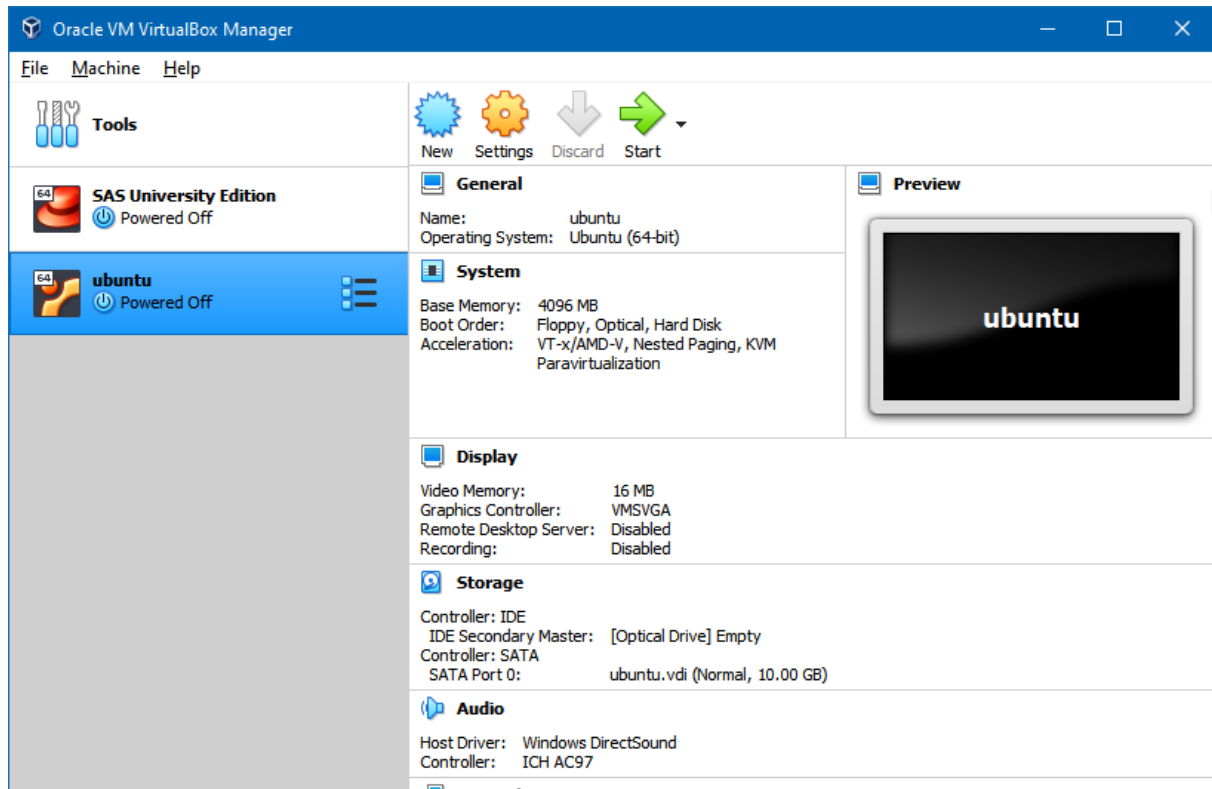
Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.

The recommended memory size is **1024** MB.

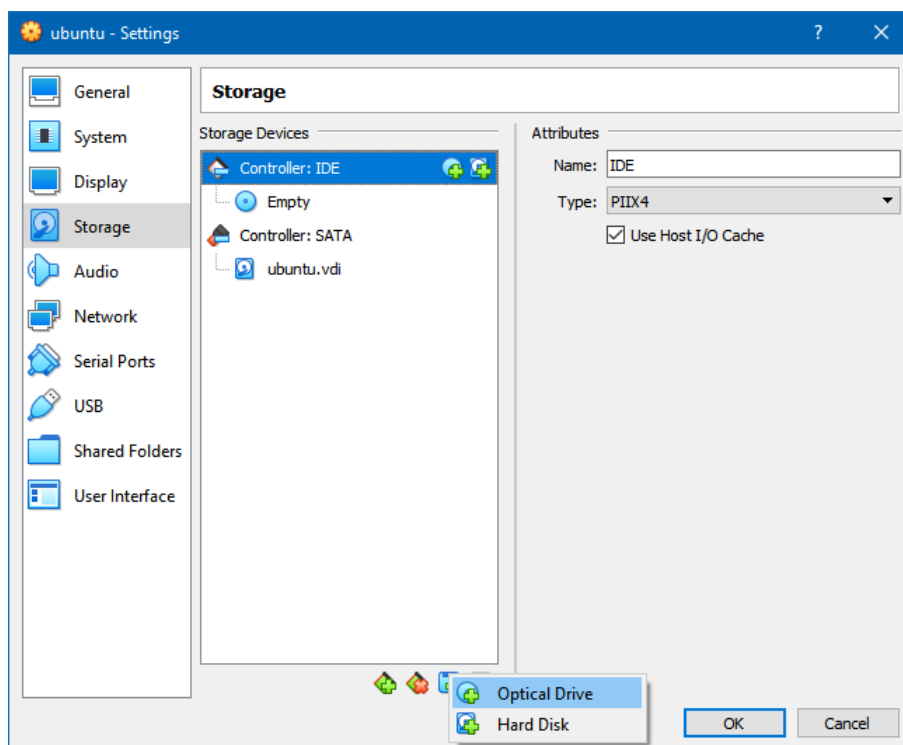
4096 MB

4 MB 15360 MB

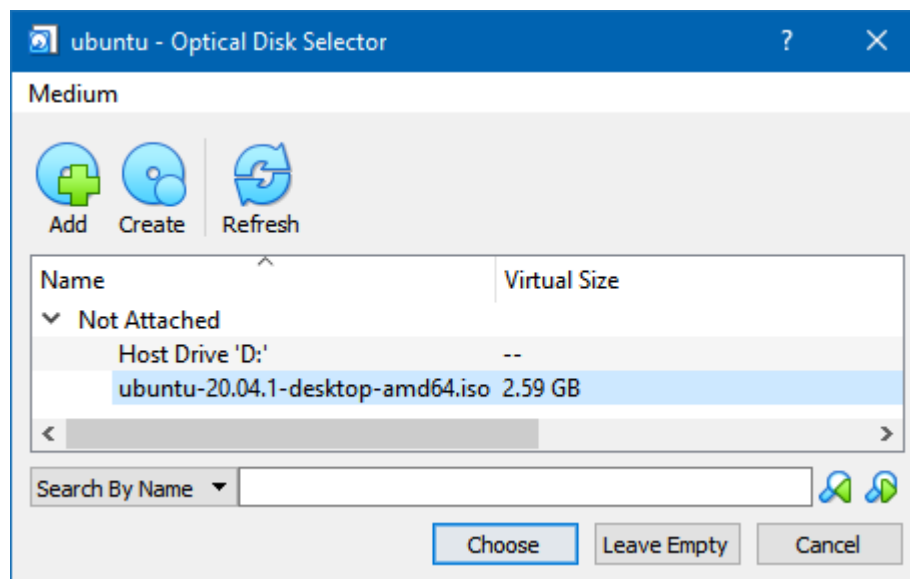
- You will be greeted with the screen. Click on Settings.



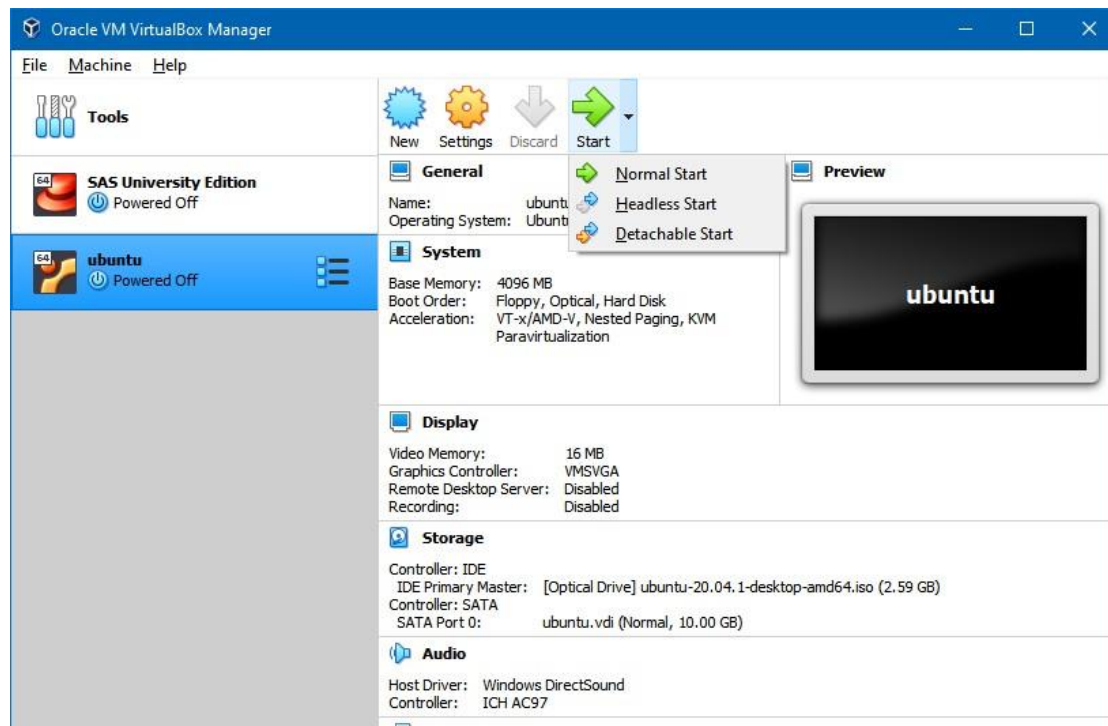
- Click on the Storage Tab and Click on the Blue Floppy button to add a new optical drive.



- Click on Choose and make sure you have the screen. Click OK.

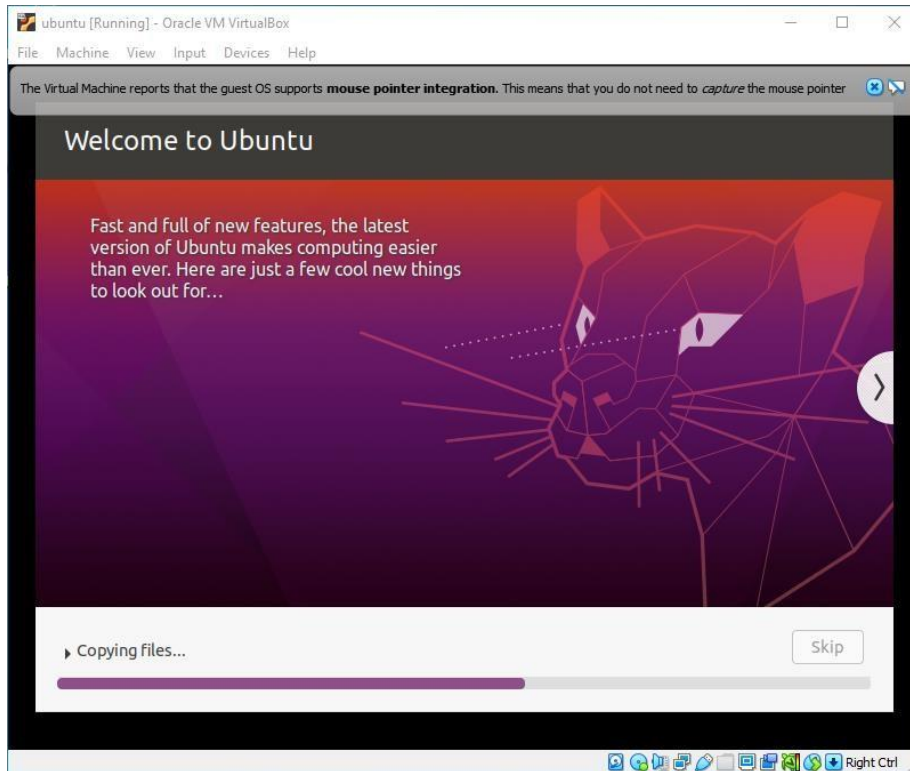


- Click on the Start Button (Normal Start). The VM will start up in a few minutes.

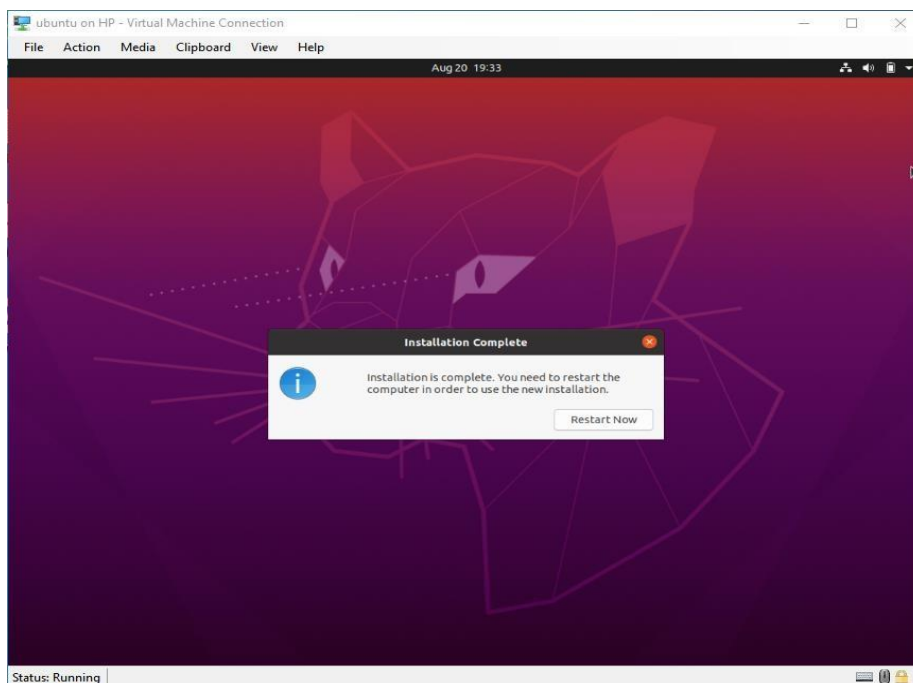


Install Ubuntu

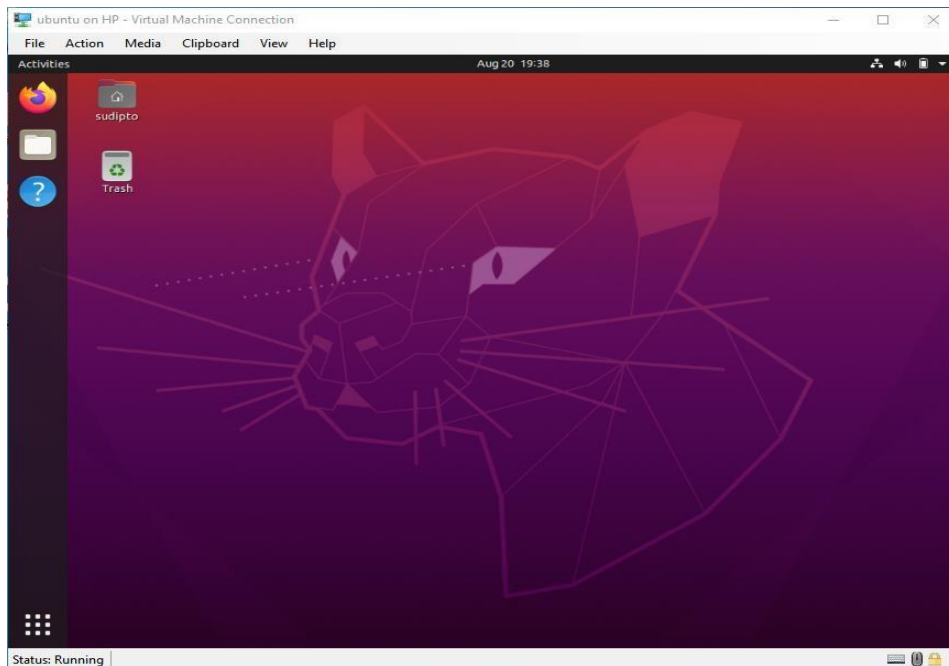
- Wait for the installation to complete. It can take up to 1 hour depending upon the system resources.



- The VM will request you to reboot the system. Click Restart Now. (This will Reboot the VM).

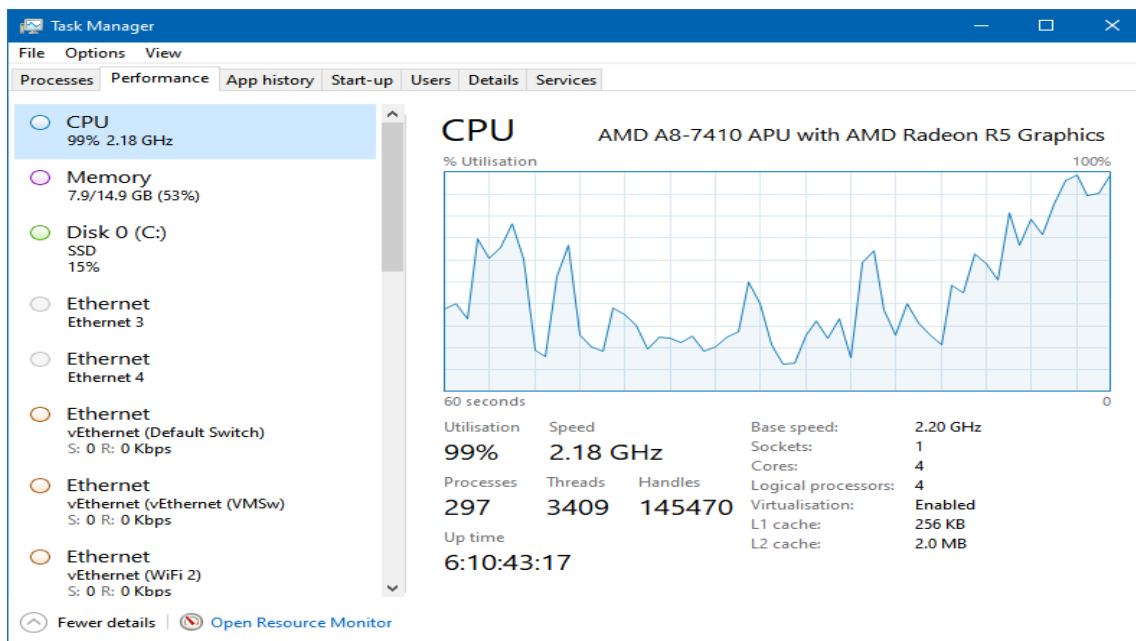


- You have now installed Ubuntu.



Problems?

- Watch this video once: <https://www.youtube.com/watch?v=x5MhydiWmc>
- Make sure Hardware Virtualisation is supported on your system. If it is manufactured after 2010, go to BIOS settings and turn Hardware Virtualisation on. To do this, shutdown the system, keep pressing F10 or F2 or F6 depending to your system manual and then go to the CPU settings and enable Virtualization (AMD-V or Intel Virtualization Technology).



BASH SHELL COMMANDS

1. 'ls' command – The command is used to list all the files and folder in the current directory.

```
root@kali:~# ls
config-downloaded.txt  Documents      Fatrat_Generated  Music    Public    Veil
CSRF.html             Downloads     isecurityorgGraph.mtg1  output  Templates  Videos
Desktop              dvwa-data.txt  knock            Pictures  test.txt
```

2. 'cp' command – The command is used to copy a file from one location to another location. We have to provide full path of the files.

```
root@kali:~# cp test.txt test1.txt
root@kali:~# ls
config-downloaded.txt  Documents      Fatrat_Generated  Music    Public    test.txt
CSRF.html             Downloads     isecurityorgGraph.mtg1  output  Templates  Veil
Desktop              dvwa-data.txt  knock            Pictures  test1.txt  Videos
```

3. 'mv' command – The command is used to move a file from one location to another location. Provided the location of the file.

```
root@kali:~# mv test.txt test2.txt
root@kali:~# ls
config-downloaded.txt  Documents      Fatrat_Generated  Music    Public    test2.txt
CSRF.html             Downloads     isecurityorgGraph.mtg1  output  Templates  Veil
Desktop              dvwa-data.txt  knock            Pictures  test1.txt  Videos
```

4. 'chmod' command - The command is used to change the access mode of a file. The name is an abbreviation of change mode.

```

root@kali:~# ls -l
total 232
-rw-r--r-- 1 root root 576 Aug 17 14:04 config-downloaded.txt
-rw-r--r-- 1 root root 490 Aug 15 12:09 CSRF.html
drwxr-xr-x 2 root root 4096 Aug 14 09:11 Desktop
drwxr-xr-x 3 root root 4096 Jun 10 14:20 Documents
drwxr-xr-x 3 root root 4096 Aug 8 07:15 Downloads
-rw-r--r-- 1 root root 3312 Aug 17 15:10 dvwa-data.txt
drwxr-xr-x 2 root root 4096 Aug 15 14:36 Fatrat_Generated
-rw-r--r-- 1 root root 158807 Jul 9 12:48 isecurityorgGraph.mtgl
drwxr-xr-x 4 root root 4096 Jul 8 09:07 knock
drwxr-xr-x 2 root root 4096 Jun 10 14:15 Music
drwxr-xr-x 2 root root 4096 Aug 5 09:26 output
drwxr-xr-x 2 root root 4096 Aug 1 06:31 Pictures
drwxr-xr-x 2 root root 4096 Jun 10 14:15 Public
drwxr-xr-x 2 root root 4096 Jun 10 14:15 Templates
-rwxrwxrwx 1 root root 4385 Aug 26 01:02 test1.txt
-rw-r--r-- 1 root root 4385 Aug 15 13:49 test2.txt
drwxr-xr-x 7 root root 4096 Jul 29 12:10 Veil
drwxr-xr-x 2 root root 4096 Jun 10 14:15 Videos
root@kali:~# chmod 777 test2.txt
root@kali:~# ls -l
total 232
-rw-r--r-- 1 root root 576 Aug 17 14:04 config-downloaded.txt
-rw-r--r-- 1 root root 490 Aug 15 12:09 CSRF.html
drwxr-xr-x 2 root root 4096 Aug 14 09:11 Desktop
drwxr-xr-x 3 root root 4096 Jun 10 14:20 Documents
drwxr-xr-x 3 root root 4096 Aug 8 07:15 Downloads
-rw-r--r-- 1 root root 3312 Aug 17 15:10 dvwa-data.txt
drwxr-xr-x 2 root root 4096 Aug 15 14:36 Fatrat_Generated
-rw-r--r-- 1 root root 158807 Jul 9 12:48 isecurityorgGraph.mtgl
drwxr-xr-x 4 root root 4096 Jul 8 09:07 knock
drwxr-xr-x 2 root root 4096 Jun 10 14:15 Music
drwxr-xr-x 2 root root 4096 Aug 5 09:26 output
drwxr-xr-x 2 root root 4096 Aug 1 06:31 Pictures
drwxr-xr-x 2 root root 4096 Jun 10 14:15 Public
drwxr-xr-x 2 root root 4096 Jun 10 14:15 Templates
-rwxrwxrwx 1 root root 4385 Aug 26 01:02 test1.txt
-rwxrwxrwx 1 root root 4385 Aug 15 13:49 test2.txt
drwxr-xr-x 7 root root 4096 Jul 29 12:10 Veil
drwxr-xr-x 2 root root 4096 Jun 10 14:15 Videos

```

5. 'mkdir' command – The command is used to create a new blank directory in the current directory.

```

root@kali:~# mkdir newDirectory
root@kali:~# ls
config-downloaded.txt  Documents      Fatrat_Generated  Music      Pictures  test1.txt  Videos
CSRF.html             Downloads     isecurityorgGraph.mtgl  newDirectory  Public    test2.txt
Desktop               dvwa-data.txt knock          output      Templates  Veil

```

6. 'rmdir' command – The command is used to remove the empty directories in the current directory.

```

root@kali:~# rmdir newDirectory
root@kali:~# ls
config-downloaded.txt  Documents      Fatrat_Generated  Music      Public    test2.txt
CSRF.html             Downloads     isecurityorgGraph.mtgl  output      Templates  Veil
Desktop               dvwa-data.txt knock          Pictures    test1.txt  Videos

```

7. 'rm' command – The command is used to remove or delete any file in the current directory.

```
root@kali:~# rm test2.txt
root@kali:~# ls
config-downloaded.txt  Documents      Fatrat_Generated  Music      Public      Veil
CSRF.html              Downloads     isecurityorgGraph.mtg  output    Templates  Videos
Desktop                dvwa-data.txt knock           Pictures  test1.txt
```

8. 'cd' command – The command is used to change to another directory.

```
root@kali:~# cd Pictures/
root@kali:~/Pictures#
```

9. 'pwd' command – The command is used to get or know the path or location of the current directory.

```
root@kali:~/Pictures# pwd
/root/Pictures
```

10. 'cat' command – The command is used to view the contents of the file in the terminal.

```
root@kali:~/Pictures# cat > xyz.txt
unix is great os. unix is opensource. unix is free os.
learn operating system.
Unix linux which one you choose.
uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
```

THE END