

CSE 484
Assignment 01
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Answer to the Question No - 1

There are several readily available applications available on the cloud by several vendors and Cloud Computational Service Providers. As I am working as a Cloud Solution Architect (Intern) at Huawei, I am familiar with the Cloud Services that are available in Huawei Cloud and will be orienting my discussion based on it.

Cloud Services Available at Huawei Cloud:

- 1) ECS - Elastic Computer Service is a readily available, flexible and scalable Cloud Computational Service that is available in Huawei, where users can easily deploy their workload. It is similar to the EC2 of AWS. Any user can configure an ECS based on his/her requirements and application load.
- 2) EIP - Elastic IP Address is a Public IP Address that users can bind to his/her existing ECS and access from any part of the globe.
- 3) BMS - For Single Tenant Architectures, where the user has a need for specified Data Centers, they can opt for Bare Metal Servers for heavy workloads.
- 4) EVS - Elastic Volume Service is the virtualized storage solution that comes with the ECS. Here users can store their data. This is similar to the SSD and HDD available on our local computers.
- 5) OBS - Object Storage Solution is the archiving solution that Huawei provides. This is similar to the S3 bucket of AWS. Users can avail of OBS based on their access requirements like Standard Access, Infrequent Access and Archiving Access.
- 6) CCE - When users use Microservices-based Applications instead of Monolithic Applications, they can opt for Cloud Container Engine. In this case, Kubernetes is used to orchestrate the pods.
- 7) AS - Auto Scaling is an excellent feature that E-Commerce sites opt for. When heavy traffic strikes the site, AS gets initiated automatically, and boosts the configuration so that users feel no lag.

- 8) IMS - Image Management Service is used to generate snapshots of an existing server (including OS) and later that image can be used to deploy other servers very easily, which makes the process of deployment very friendly.
- 9) CBR - Cloud Backup Recovery is used to generate backups on a regular basis so that precious data is not lost. These backups are generally kept in other available zones (AZs) or data centres.
- 10) CDN - Content Delivery Network is used to cache information in nearer locations so that users face no buffer or latency. This is mainly used in the case of Video Streaming Services.

Answer to Q no - 2

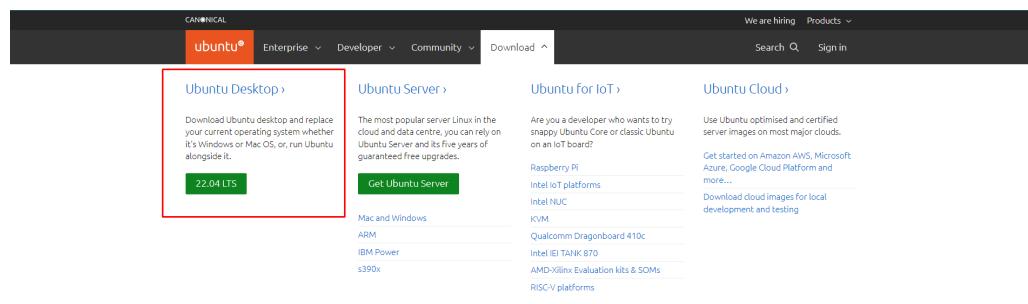
The step-by-step procedure for properly installing Ubuntu using Oracle VM VirtualBox is explained below -

Steps:

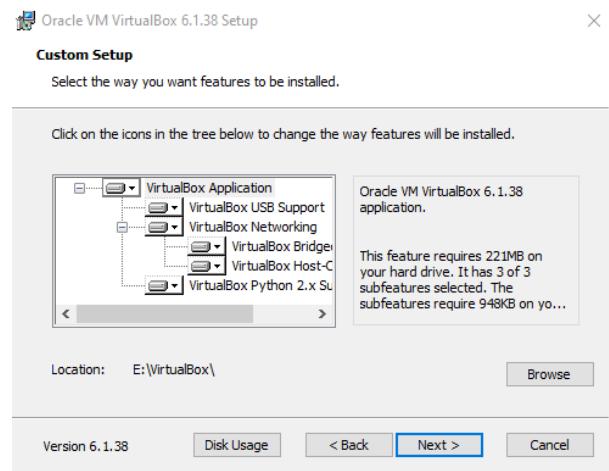
1. Download Oracle VM VirtualBox (Link - <https://www.virtualbox.org/>)



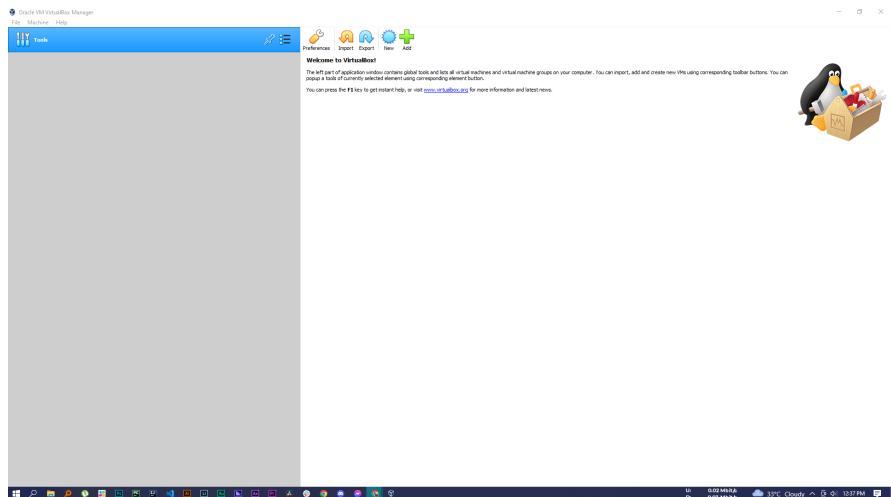
2. Download the Ubuntu 20.04 LTS Edition (Link - <https://ubuntu.com/#download>)



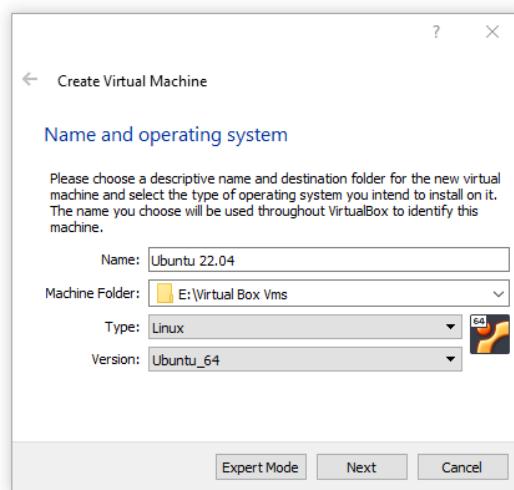
3. Install Oracle VM VirtualBox on the local machine



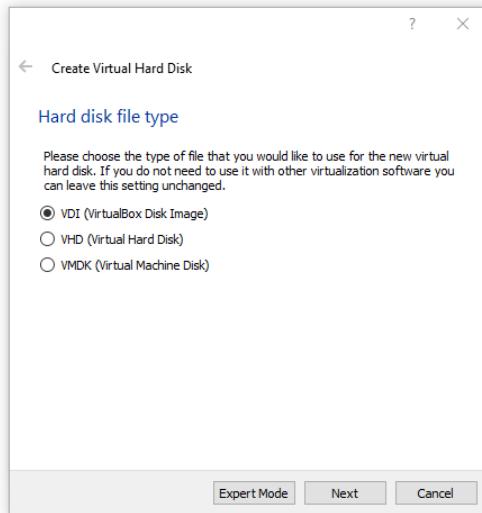
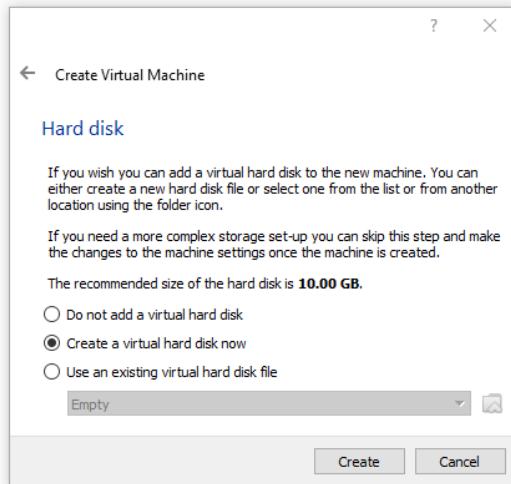
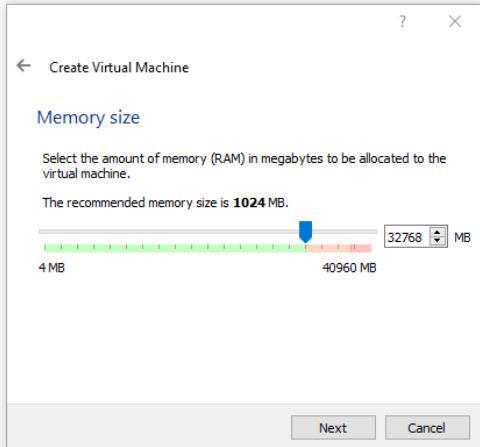
4. Start the application

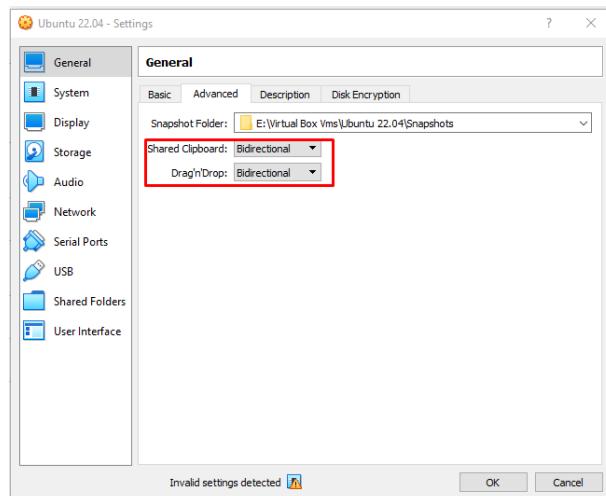
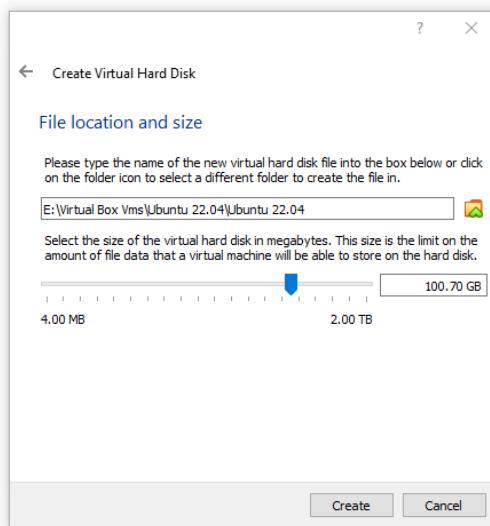
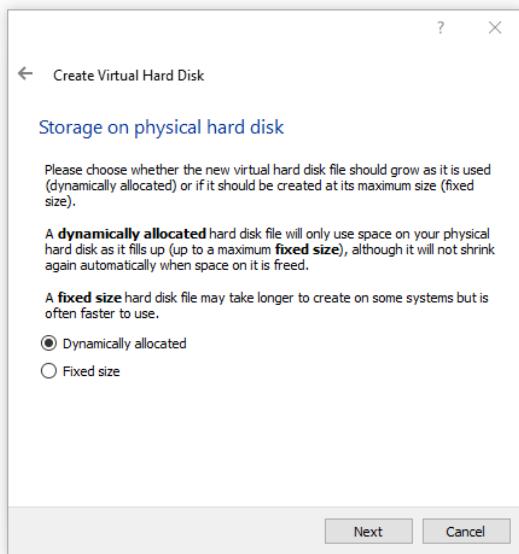


5. Create a new instance of OS

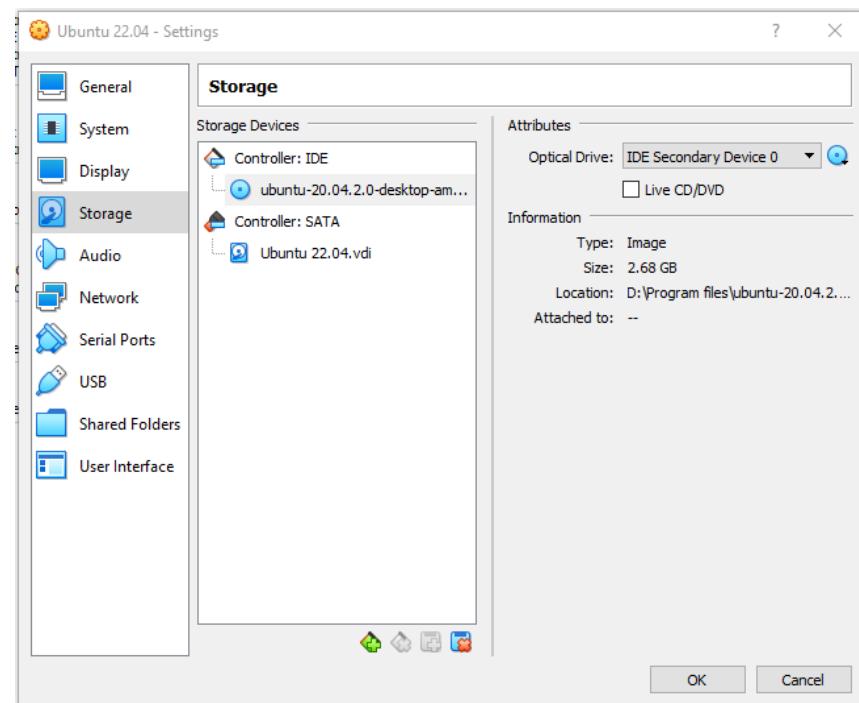
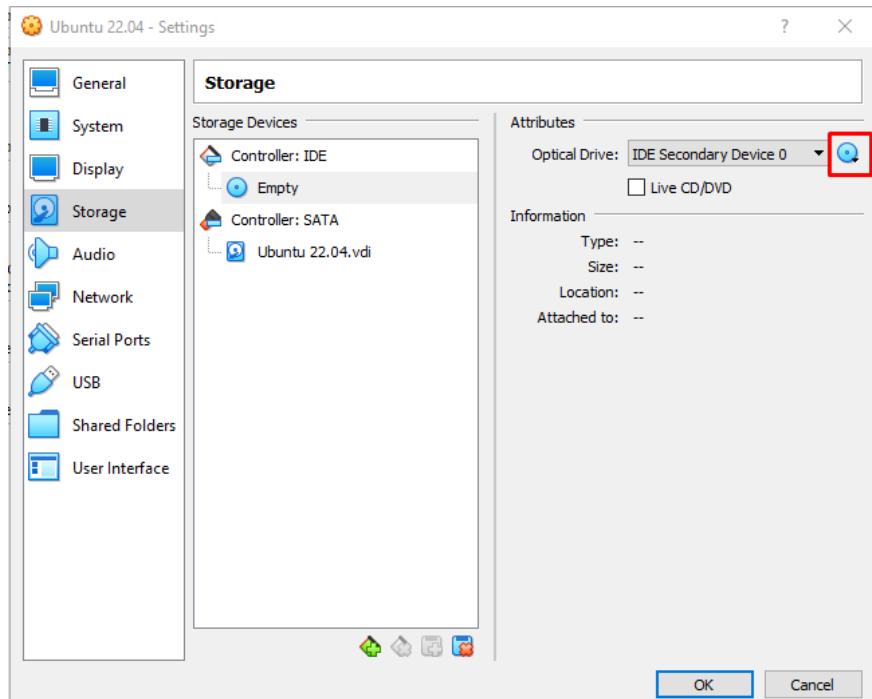


6. Specify Settings like Ram, Storage and Processing Cores

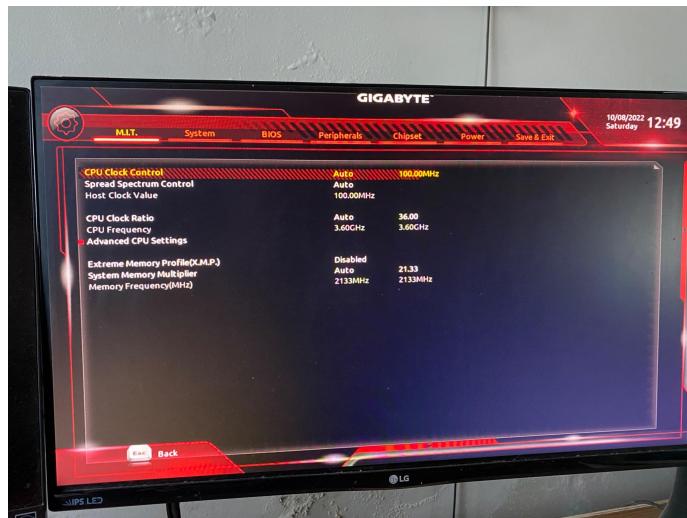




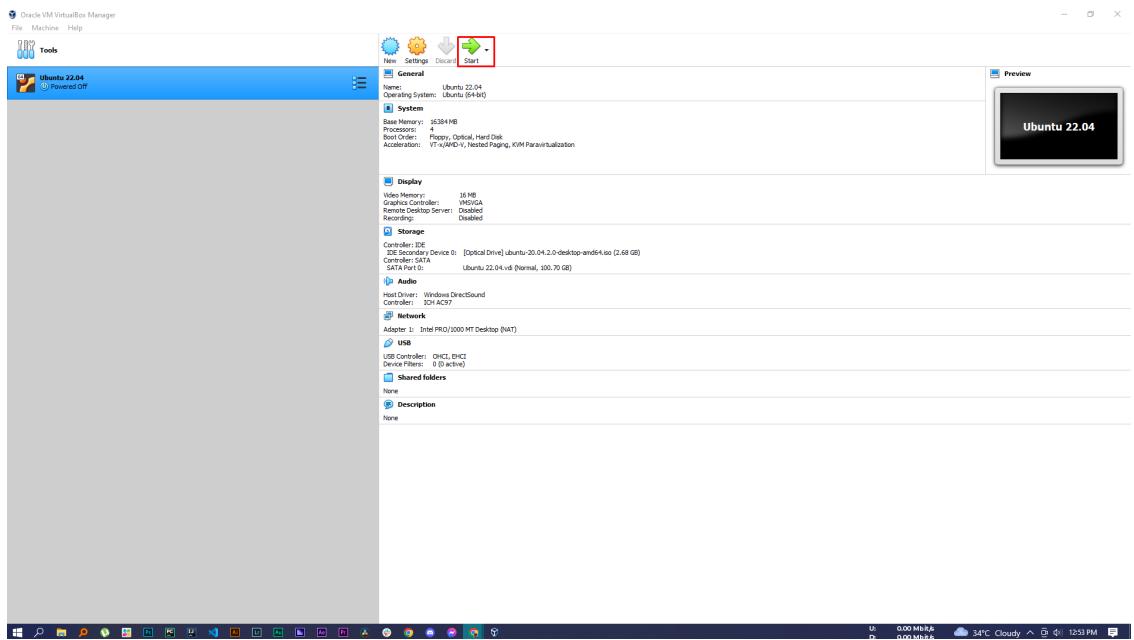
7. Specify the iso file where the VM will boot from.



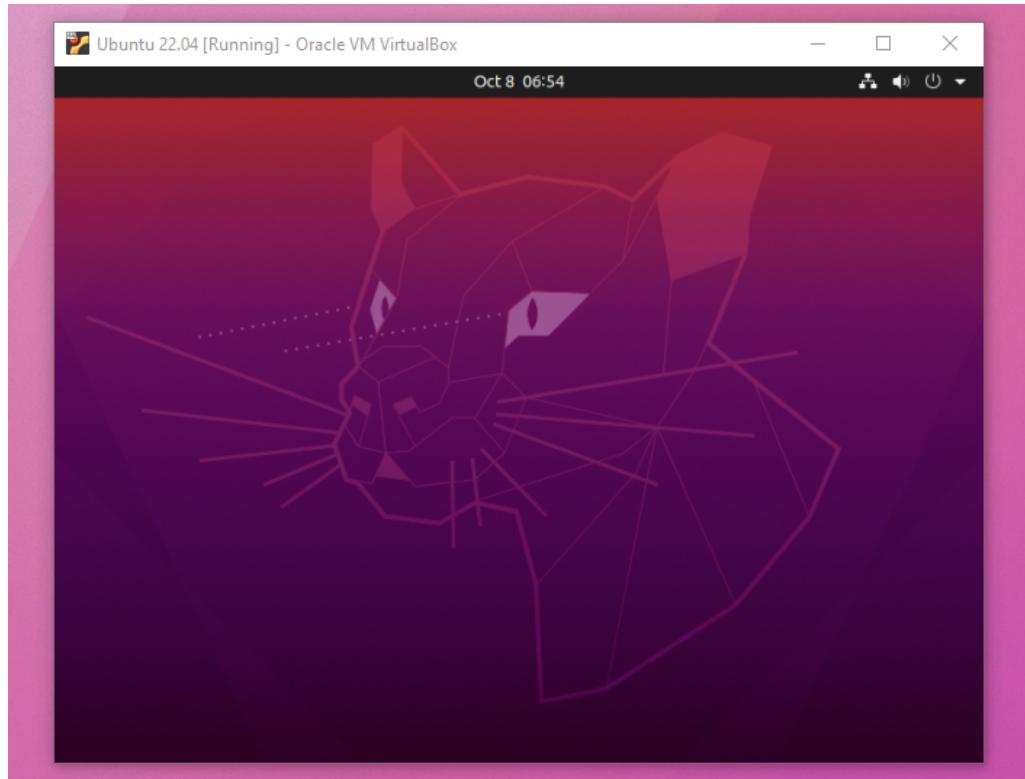
8. In order to avail more cores, Virtualization needs to be enabled from System Bios



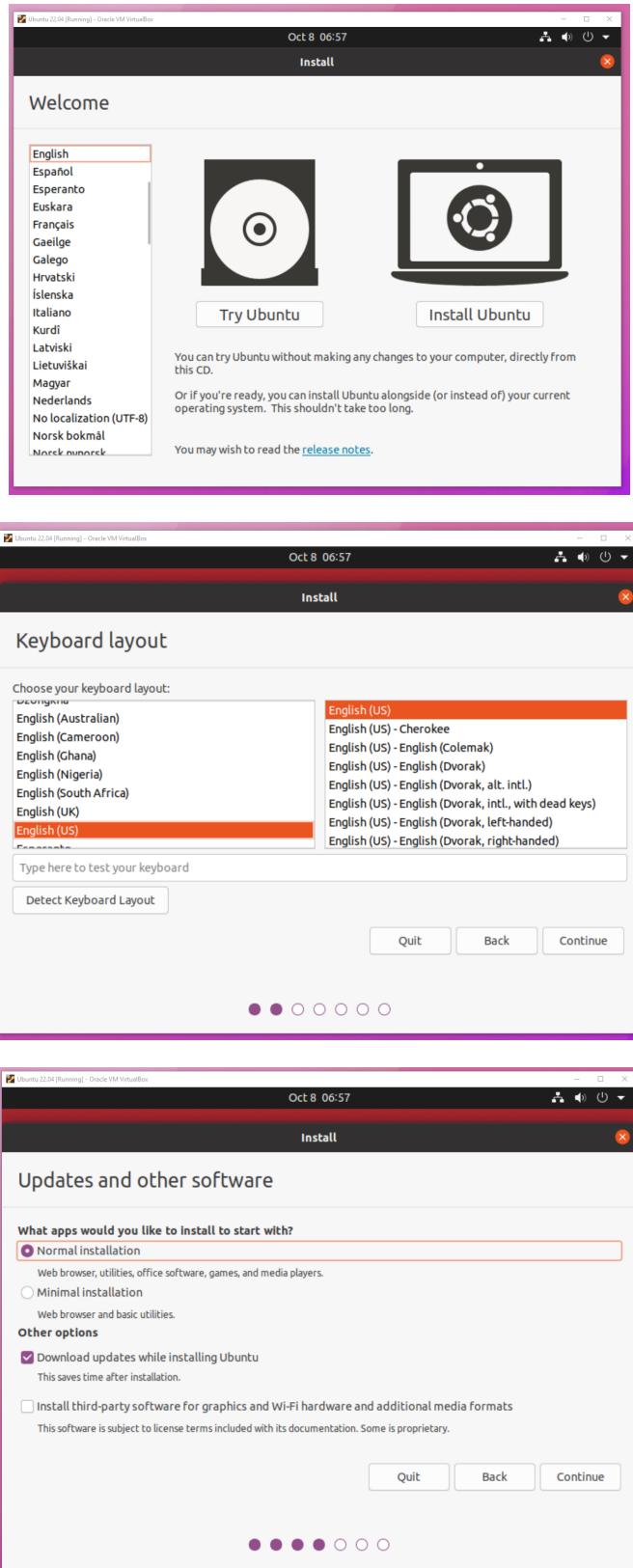
9. Now we will start VM

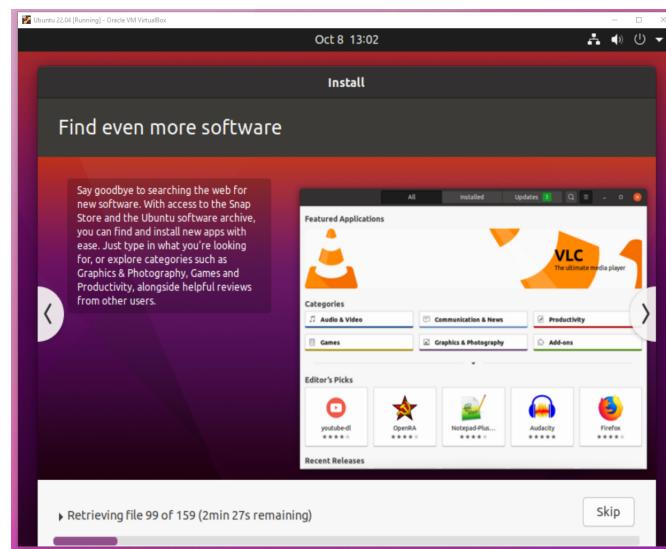
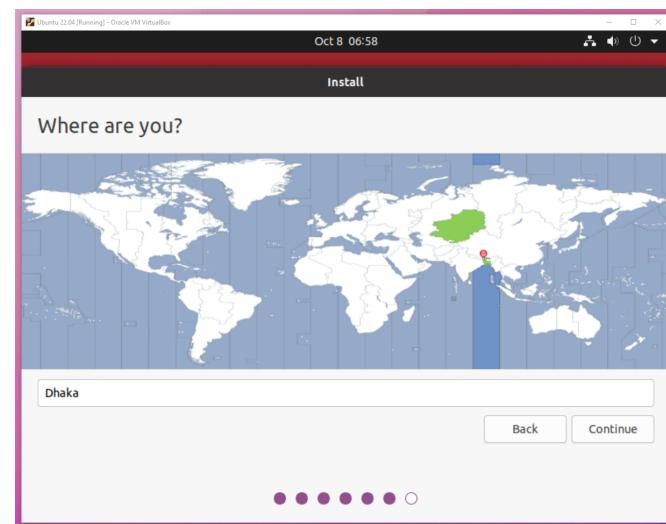
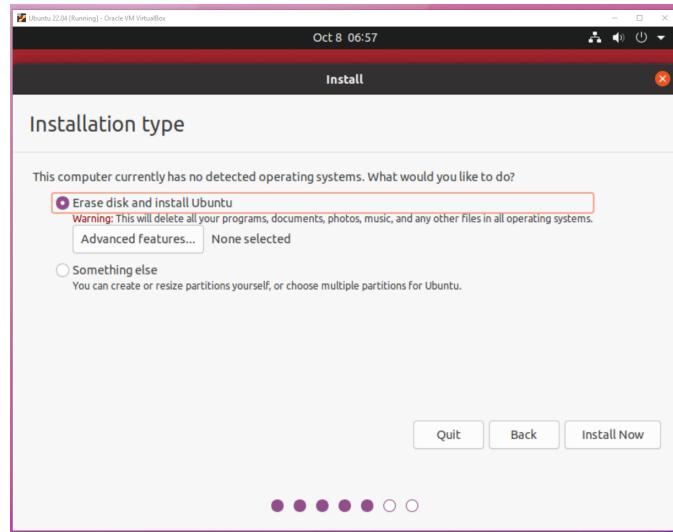


10. The VM -

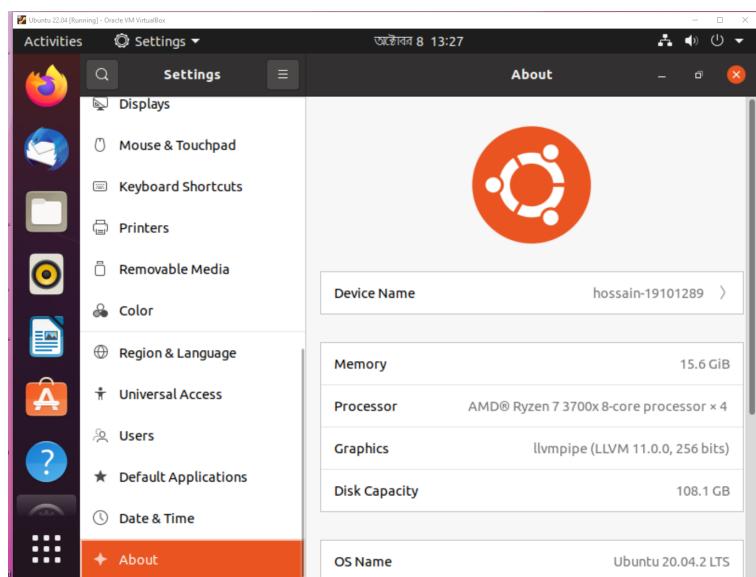
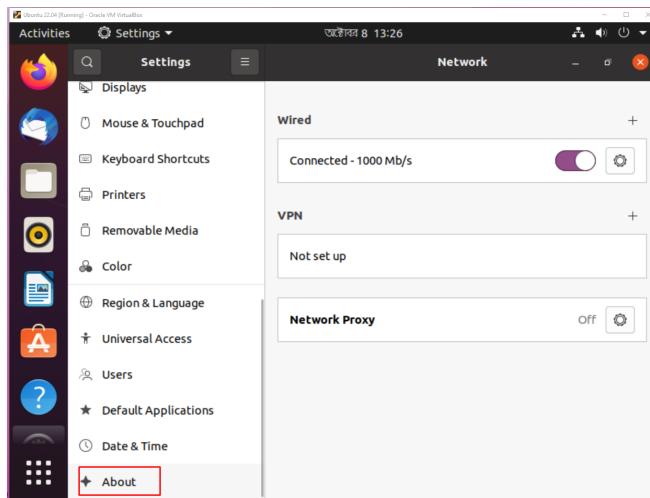
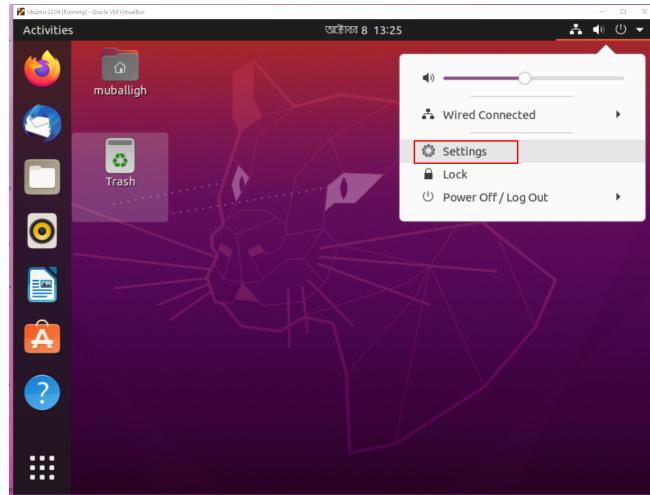


11. Installing Ubuntu

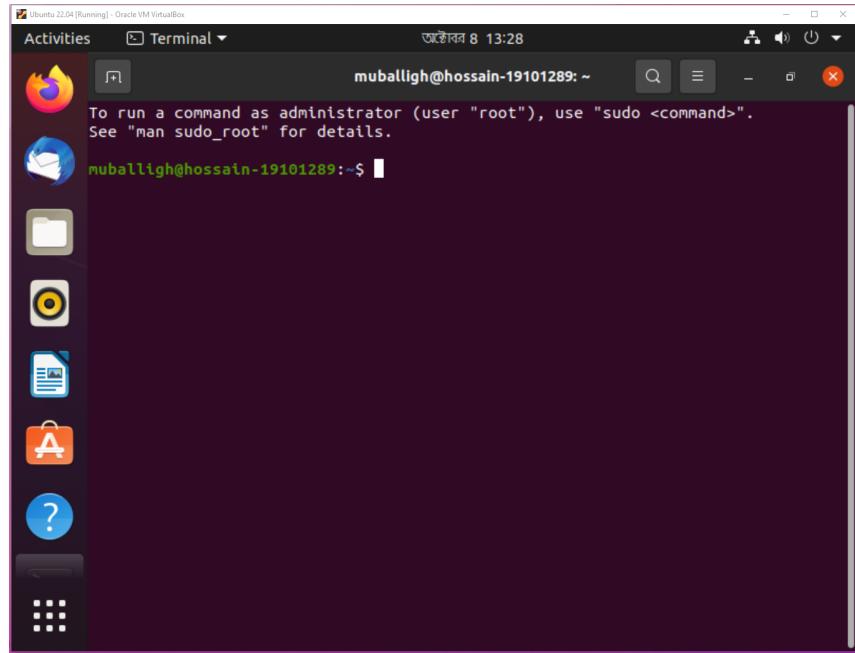




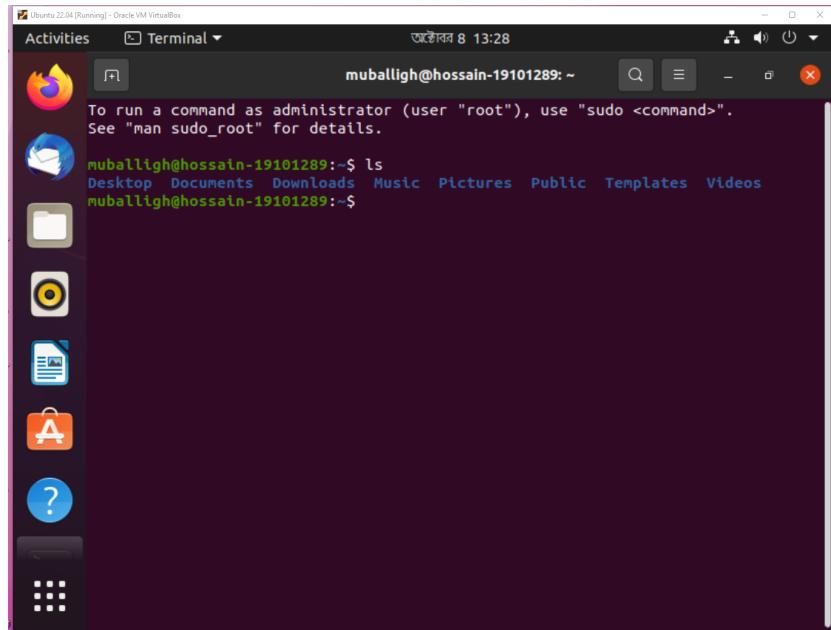
12. Changing Hostname and Username -

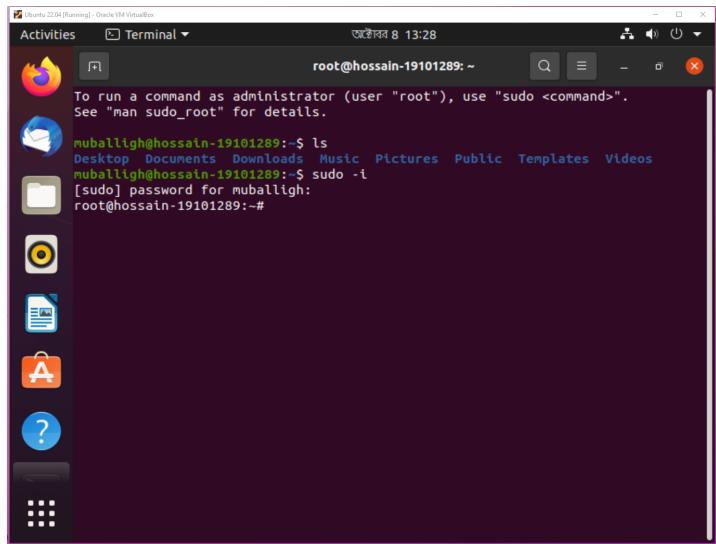


13. Checking Terminal



14. Running Commands on Terminal

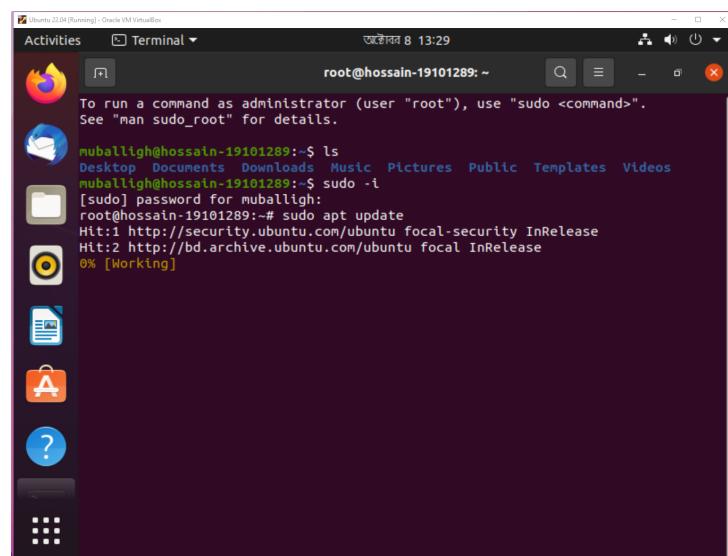




Ubuntu 22.04 [Running] - Oracle VM VirtualBox

Activities Terminal root@hossain-19101289: ~

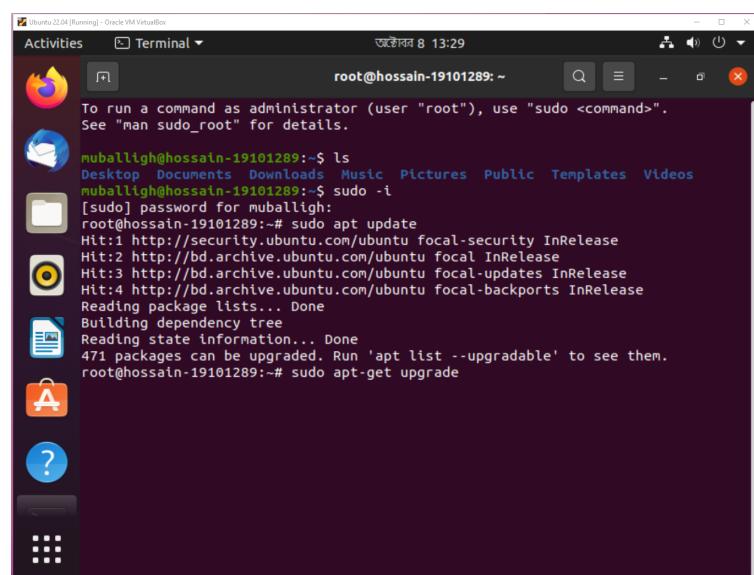
```
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
muballigh@hossain-19101289:~$ ls  
Desktop Documents Downloads Music Pictures Public Templates Videos  
muballigh@hossain-19101289:~$ sudo -i  
[sudo] password for muballigh:  
root@hossain-19101289:~#
```



Ubuntu 22.04 [Running] - Oracle VM VirtualBox

Activities Terminal root@hossain-19101289: ~

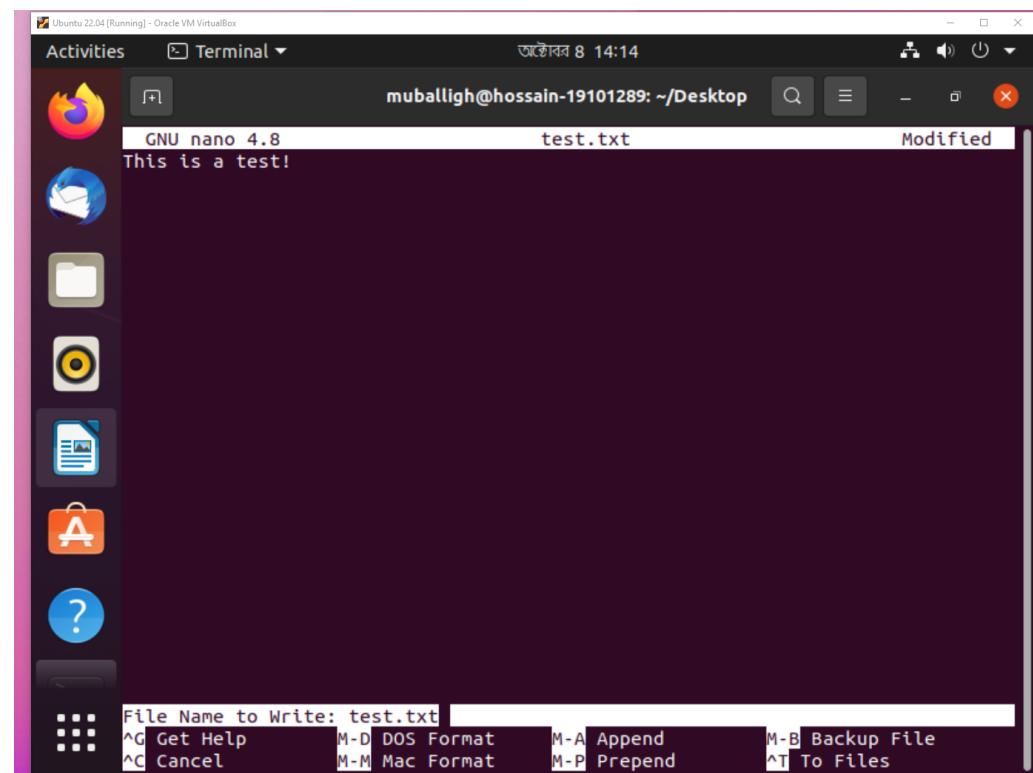
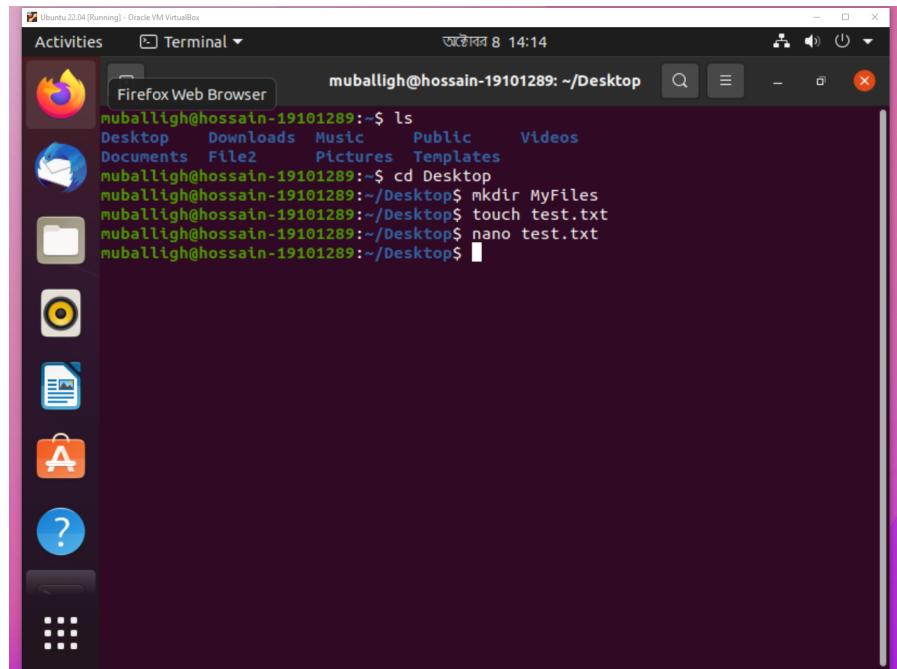
```
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
muballigh@hossain-19101289:~$ ls  
Desktop Documents Downloads Music Pictures Public Templates Videos  
muballigh@hossain-19101289:~$ sudo -i  
[sudo] password for muballigh:  
root@hossain-19101289:~# sudo apt update  
Hit:1 http://security.ubuntu.com/ubuntu focal-security InRelease  
Hit:2 http://bd.archive.ubuntu.com/ubuntu focal InRelease  
0% [Working]
```



Ubuntu 22.04 [Running] - Oracle VM VirtualBox

Activities Terminal root@hossain-19101289: ~

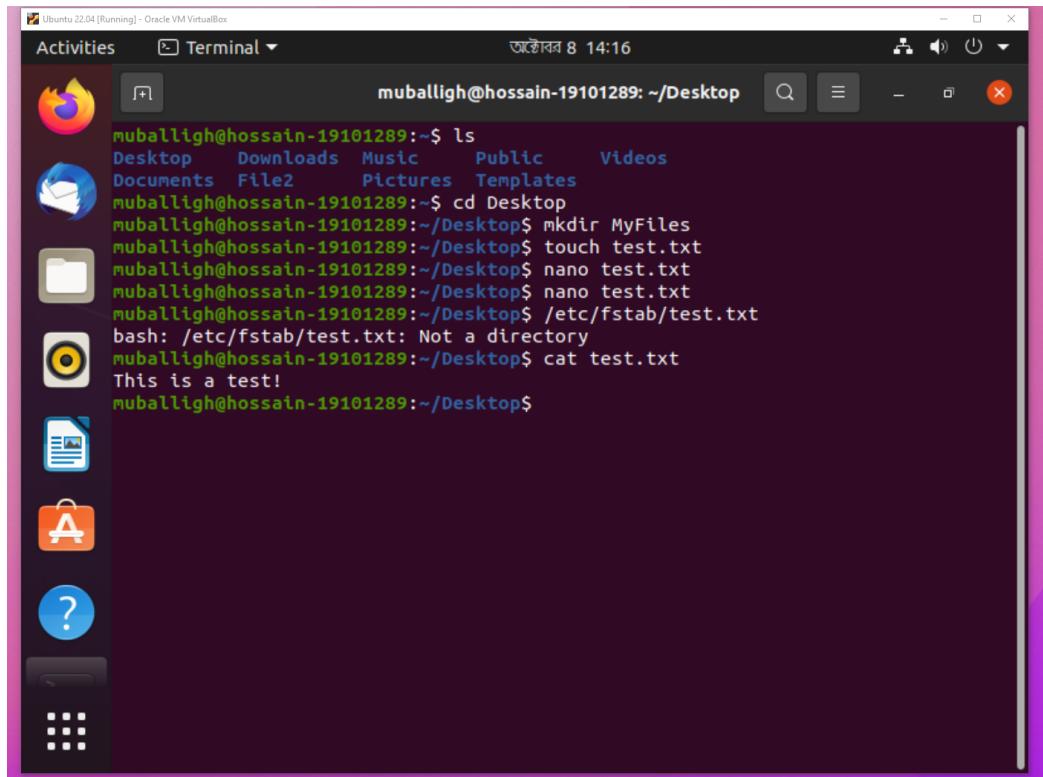
```
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
muballigh@hossain-19101289:~$ ls  
Desktop Documents Downloads Music Pictures Public Templates Videos  
muballigh@hossain-19101289:~$ sudo -i  
[sudo] password for muballigh:  
root@hossain-19101289:~# sudo apt update  
Hit:1 http://security.ubuntu.com/ubuntu focal-security InRelease  
Hit:2 http://bd.archive.ubuntu.com/ubuntu focal InRelease  
Hit:3 http://bd.archive.ubuntu.com/ubuntu focal-updates InRelease  
Hit:4 http://bd.archive.ubuntu.com/ubuntu focal-backports InRelease  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
471 packages can be upgraded. Run 'apt list --upgradable' to see them.  
root@hossain-19101289:~# sudo apt-get upgrade
```



Ubuntu 22.04 [Running] - Oracle VM VirtualBox

Activities Terminal আজোবৰ ৮ ১৪:১৬

```
muballigh@hossain-19101289:~/Desktop$ ls
Desktop Downloads Music Public Videos
Documents File2 Pictures Templates
muballigh@hossain-19101289:~/Desktop$ mkdir MyFiles
muballigh@hossain-19101289:~/Desktop$ touch test.txt
muballigh@hossain-19101289:~/Desktop$ nano test.txt
muballigh@hossain-19101289:~/Desktop$ nano test.txt
muballigh@hossain-19101289:~/Desktop$ /etc/fstab/test.txt
bash: /etc/fstab/test.txt: Not a directory
muballigh@hossain-19101289:~/Desktop$ cat test.txt
This is a test!
muballigh@hossain-19101289:~/Desktop$
```



Ubuntu 22.04 [Running] - Oracle VM VirtualBox

Activities Terminal আজোবৰ ৮ ১৪:১৮

```
muballigh@hossain-19101289:~/Desktop$ ls
Desktop Downloads Music Public Videos
Documents File2 Pictures Templates
muballigh@hossain-19101289:~/Desktop$ cd Desktop
muballigh@hossain-19101289:~/Desktop$ mkdir MyFiles
muballigh@hossain-19101289:~/Desktop$ touch test.txt
muballigh@hossain-19101289:~/Desktop$ nano test.txt
muballigh@hossain-19101289:~/Desktop$ nano test.txt
muballigh@hossain-19101289:~/Desktop$ /etc/fstab/test.txt
bash: /etc/fstab/test.txt: Not a directory
muballigh@hossain-19101289:~/Desktop$ cat test.txt
This is a test!
muballigh@hossain-19101289:~/Desktop$ pwd
/home/muballigh/Desktop
muballigh@hossain-19101289:~/Desktop$ cp test.txt /home/muballigh/Desktop/MyFiles
muballigh@hossain-19101289:~/Desktop$ cd MyFiles
muballigh@hossain-19101289:~/Desktop/MyFiles$ ls
test.txt
muballigh@hossain-19101289:~/Desktop/MyFiles$ cat test.txt
This is a test!
muballigh@hossain-19101289:~/Desktop/MyFiles$ cd ..
muballigh@hossain-19101289:~/Desktop$ rm MyFiles
rm: cannot remove 'MyFiles': Is a directory
muballigh@hossain-19101289:~/Desktop$ rm -r MyFiles
muballigh@hossain-19101289:~/Desktop$ ls
test.txt
muballigh@hossain-19101289:~/Desktop$
```