

## Datacenter-Virtualization

Creating Virtual Machine in Virtual Box by using Ubuntu & accessing SSH Server from putty

### Group Project:

### Group Members:

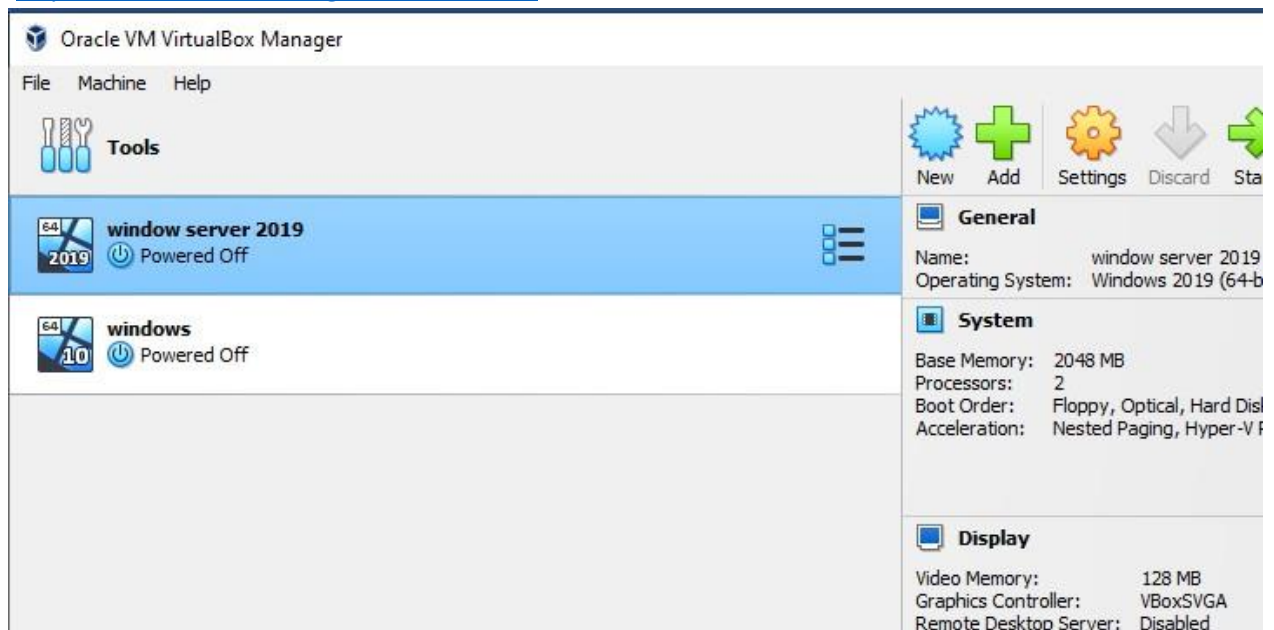
**Muqqadas Maqbool 109.**

**Muhammad Hammad 211-102.**

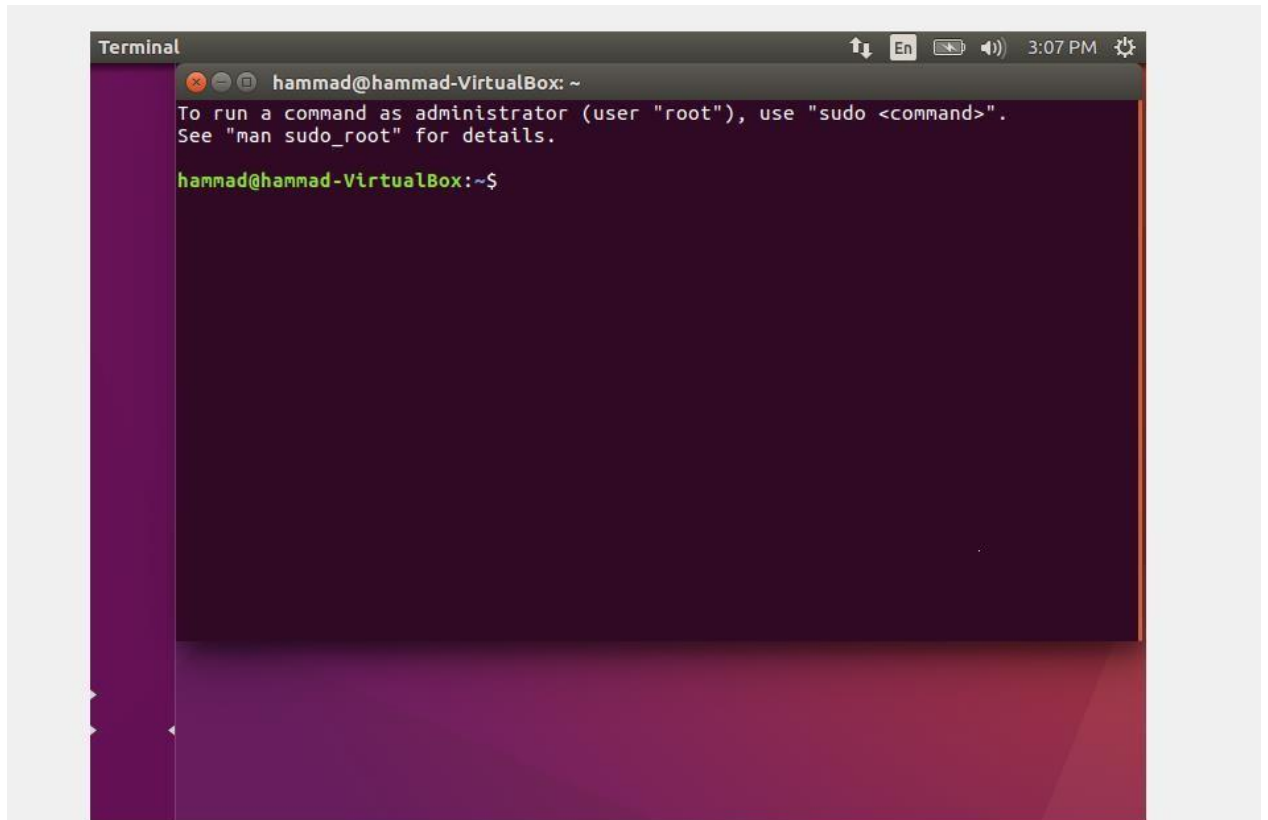
**Mahmood Mazhar 036.**

### Tasks:

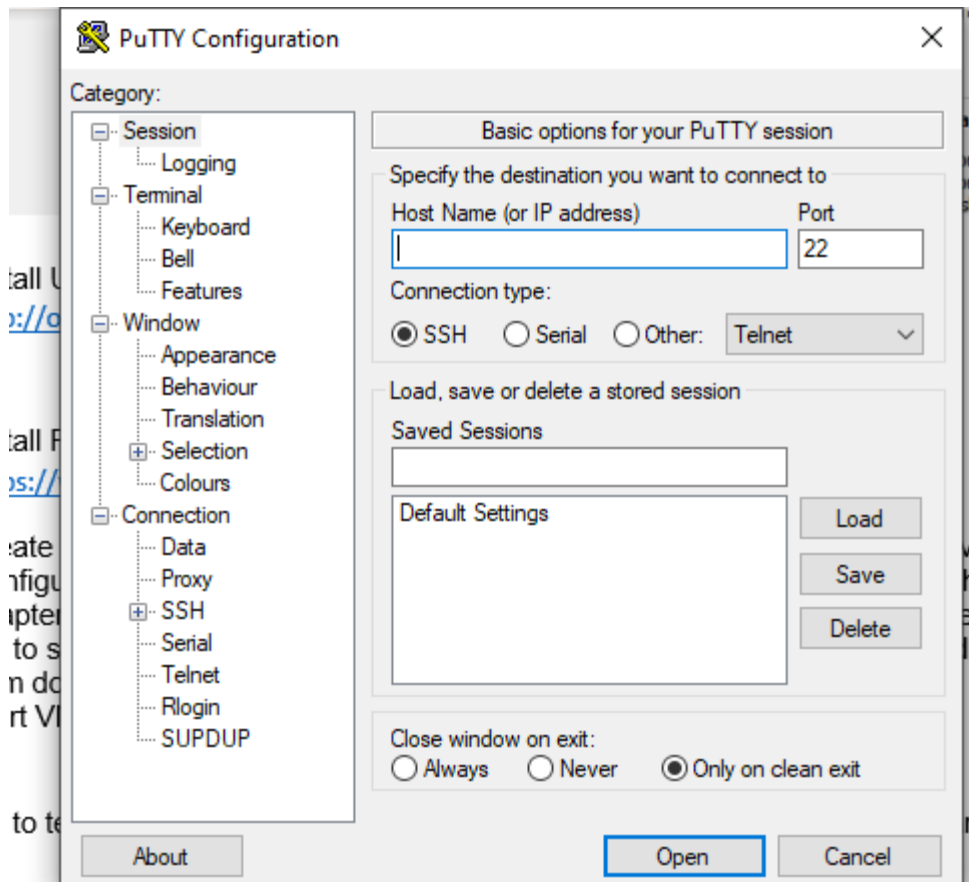
1. Install virtual box from the following link:  
<https://www.virtualbox.org/wiki/Downloads>



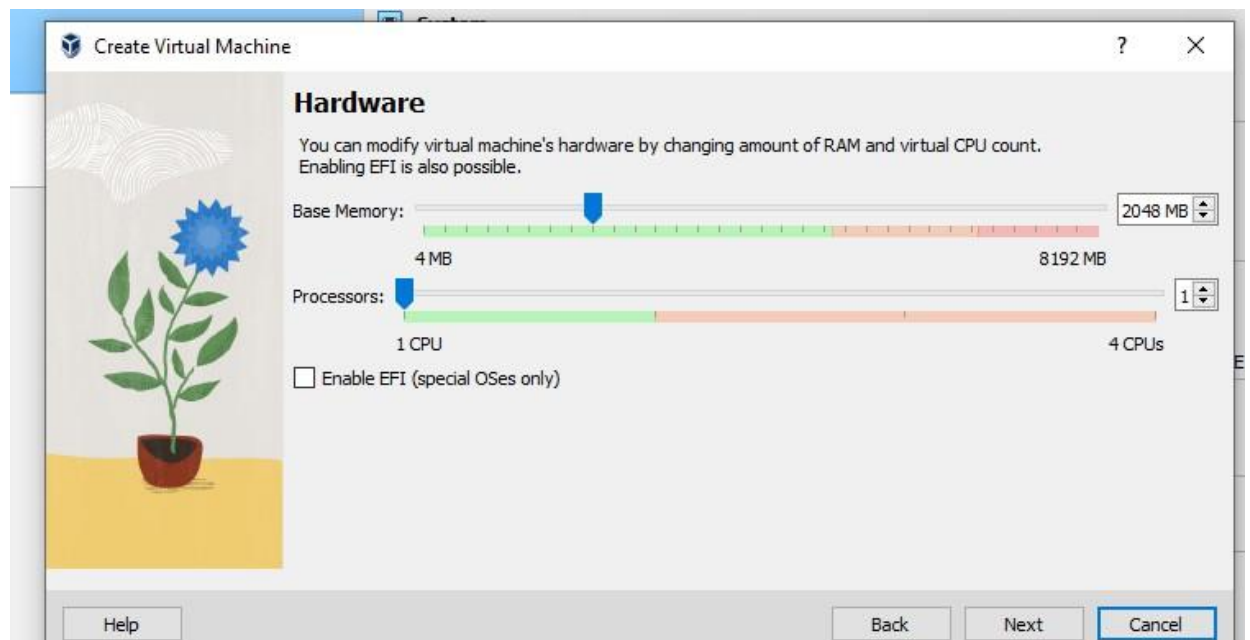
2. Install Ubuntu from the following link:  
<http://old-releases.ubuntu.com/releases/16.04.2/>



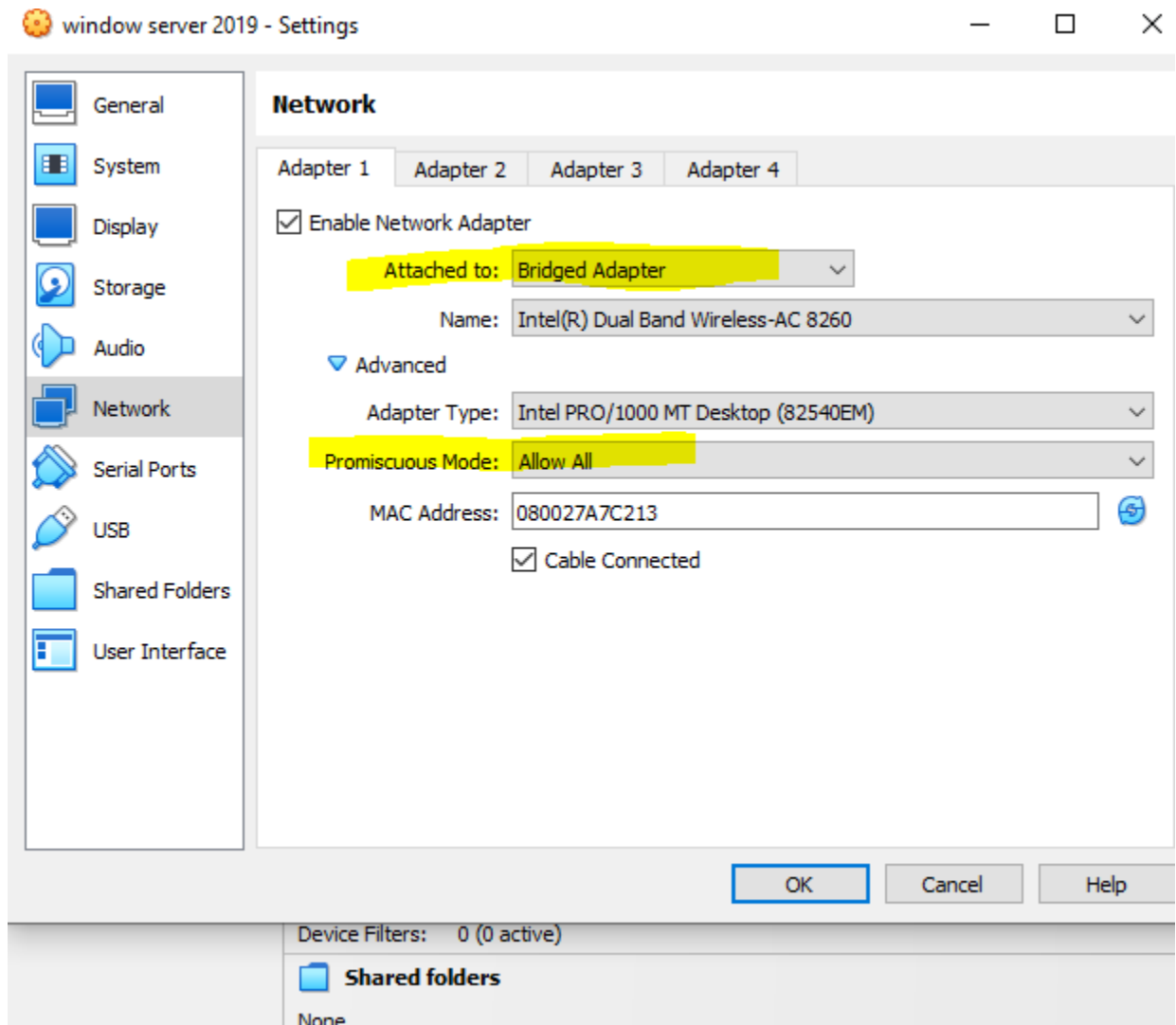
3. Install Putty from the following link:  
<https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>



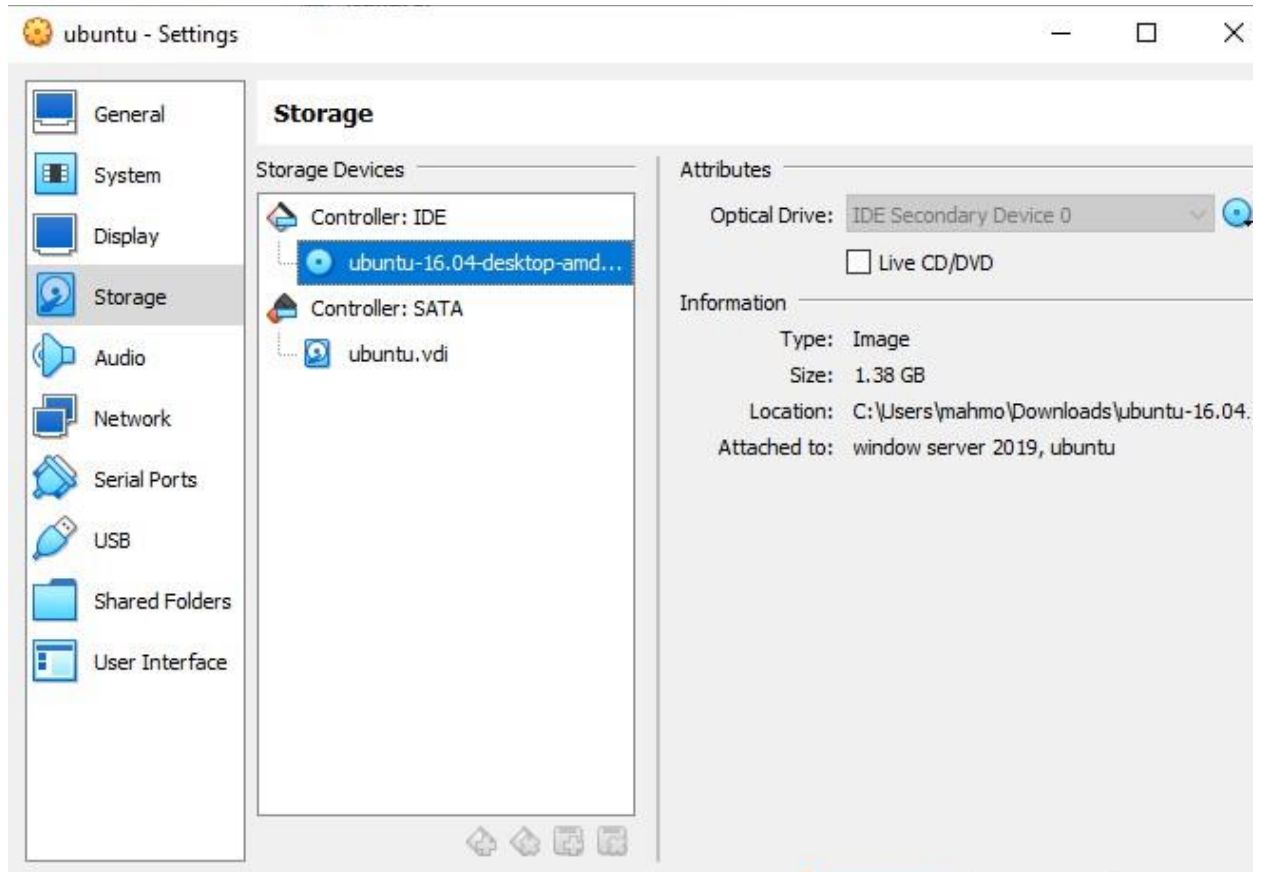
4. ...
5. Create new virtual machine in virtual box. Reserve space for virtual ram and virtual disk.

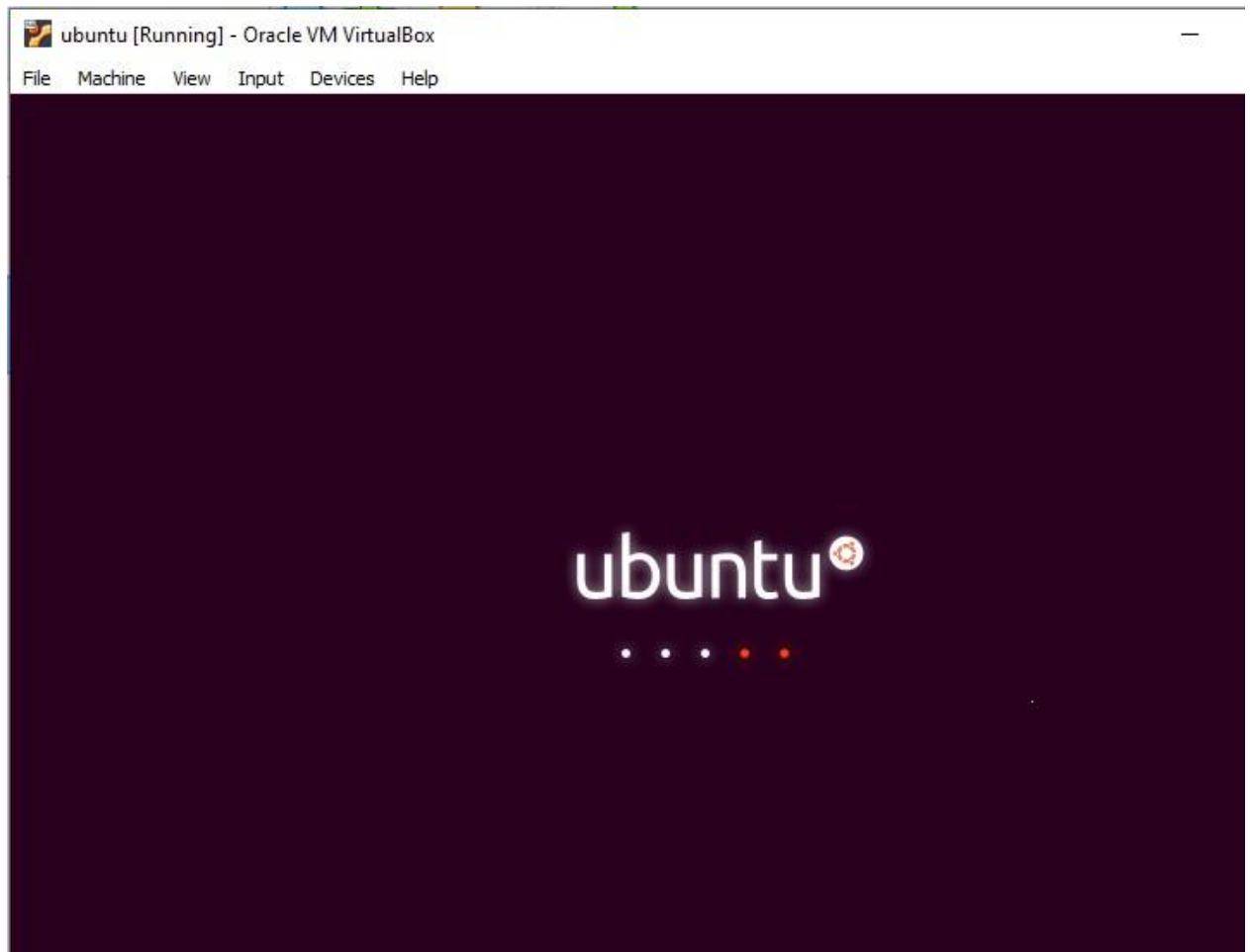


6. Configure settings of virtual box. Go into network tab, select adapter 1 and then bridged adapter. Go to advanced tab of network, select allow all in promiscuous mode.



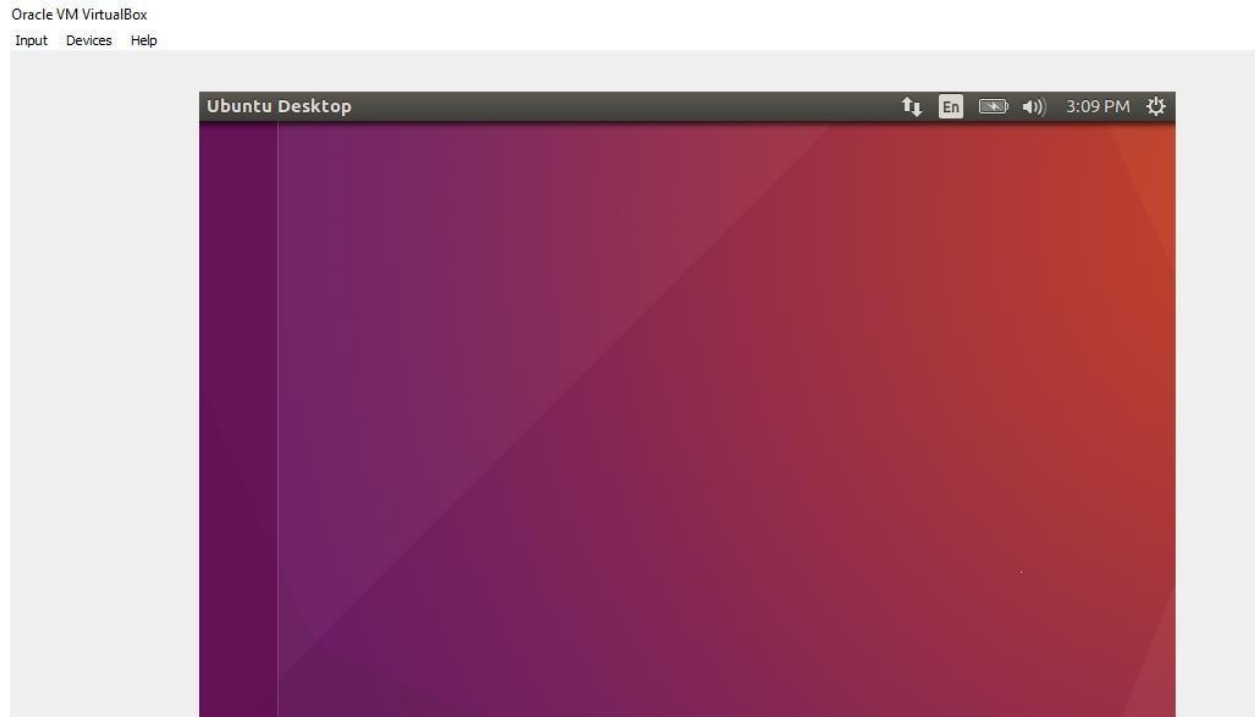
7. Go to storage tab, select add new optical disk drive, click on the downloaded Ubuntu iso from downloads



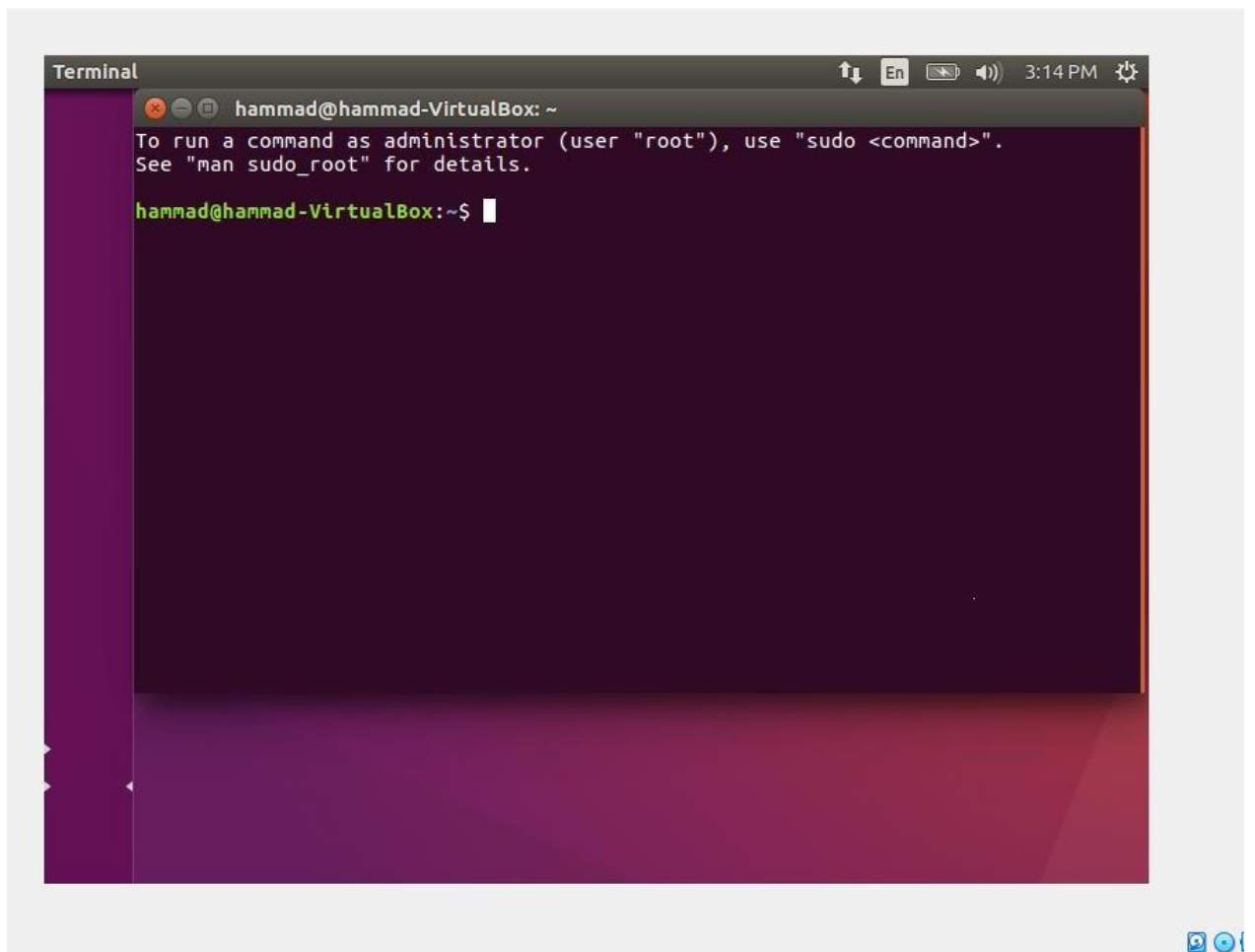


8. Start VM. Select try Ubuntu option.

Ans) We have installed the ubuntu. But the app is not showing due to some errors.

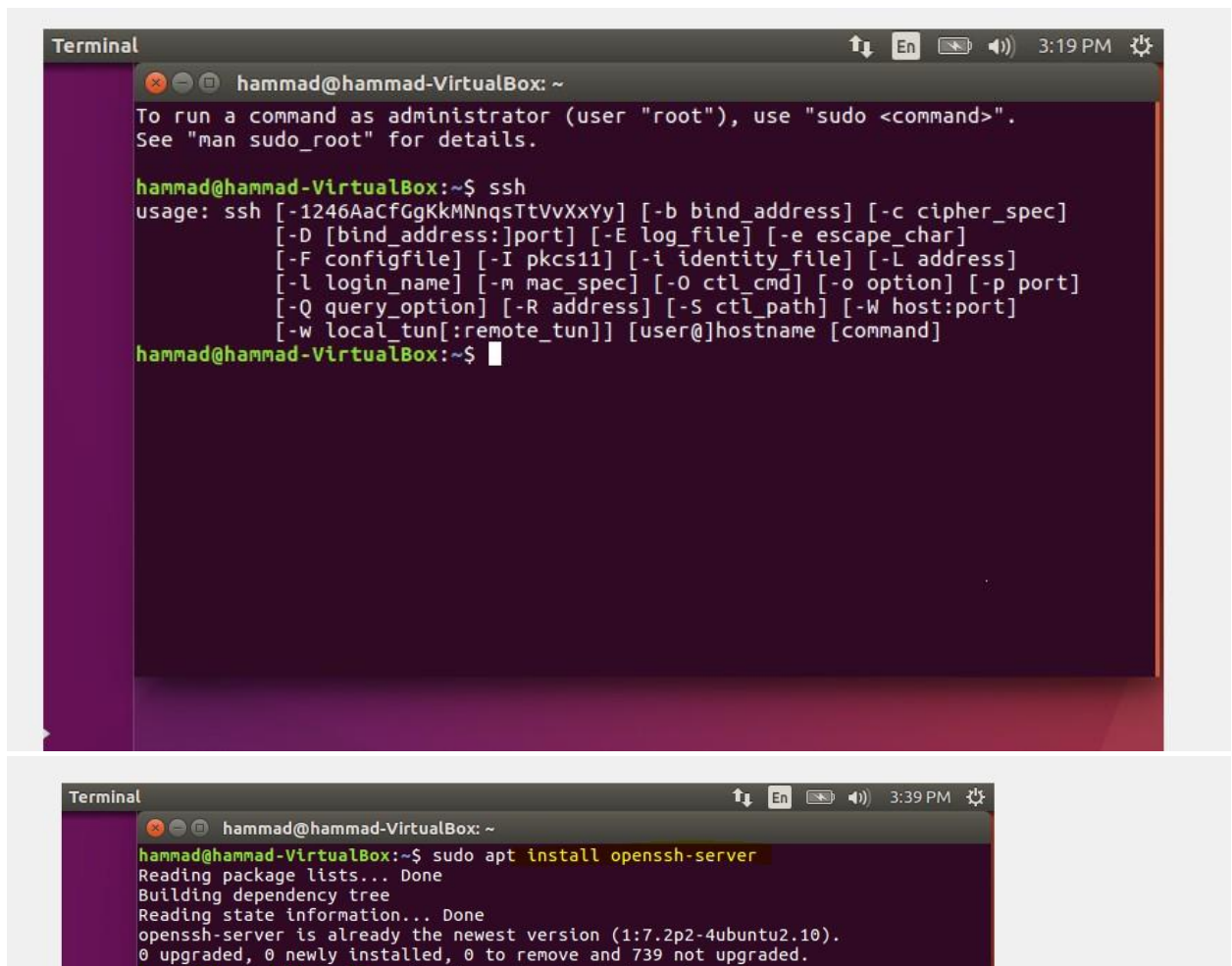


9. Go to terminal. Use login Ubuntu. Keep the password empty and move forward.



10. Install open ssh server in the terminal.





The image contains two terminal window screenshots. The top screenshot shows the SSH command usage with various options like -b, -c, -D, -E, -F, -I, -i, -L, -l, -m, -O, -o, -p, -Q, -R, -S, -W, and -w. The bottom screenshot shows the command 'sudo apt install openssh-server' being executed, with output indicating the package is already installed.

```
Terminal
hammad@hammad-VirtualBox: ~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

hammad@hammad-VirtualBox:~$ ssh
usage: ssh [-1246AaCfGgKkMMNnqsTtVvXxYy] [-b bind_address] [-c cipher_spec]
          [-D [bind_address:]port] [-E log_file] [-e escape_char]
          [-F configfile] [-I pkcs11] [-i identity_file] [-L address]
          [-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port]
          [-Q query_option] [-R address] [-S ctl_path] [-W host:port]
          [-w local_tun[:remote_tun]] [user@]hostname [command]

hammad@hammad-VirtualBox:~$

Terminal
hammad@hammad-VirtualBox: ~
hammad@hammad-VirtualBox:~$ sudo apt install openssh-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
openssh-server is already the newest version (1:7.2p2-4ubuntu2.10).
0 upgraded, 0 newly installed, 0 to remove and 739 not upgraded.
```

```
Terminal Terminal File Edit View Search Terminal Help
hammad@hammad-VirtualBox: ~
hammad@hammad-VirtualBox:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enab
   Active: active (running) since Sat 2023-12-09 15:25:54 EST; 2min 41s ago
     Main PID: 3885 (sshd)
        CGroup: /system.slice/ssh.service
                └─3885 /usr/sbin/sshd -D

Dec 09 15:25:54 hammad-VirtualBox systemd[1]: Starting OpenBSD Secure Shell serv
Dec 09 15:25:54 hammad-VirtualBox sshd[3885]: Server listening on 0.0.0.0 port 2
Dec 09 15:25:54 hammad-VirtualBox sshd[3885]: Server listening on :: port 22.
Dec 09 15:25:54 hammad-VirtualBox systemd[1]: Started OpenBSD Secure Shell serve
lines 1-11/11 (END)
```

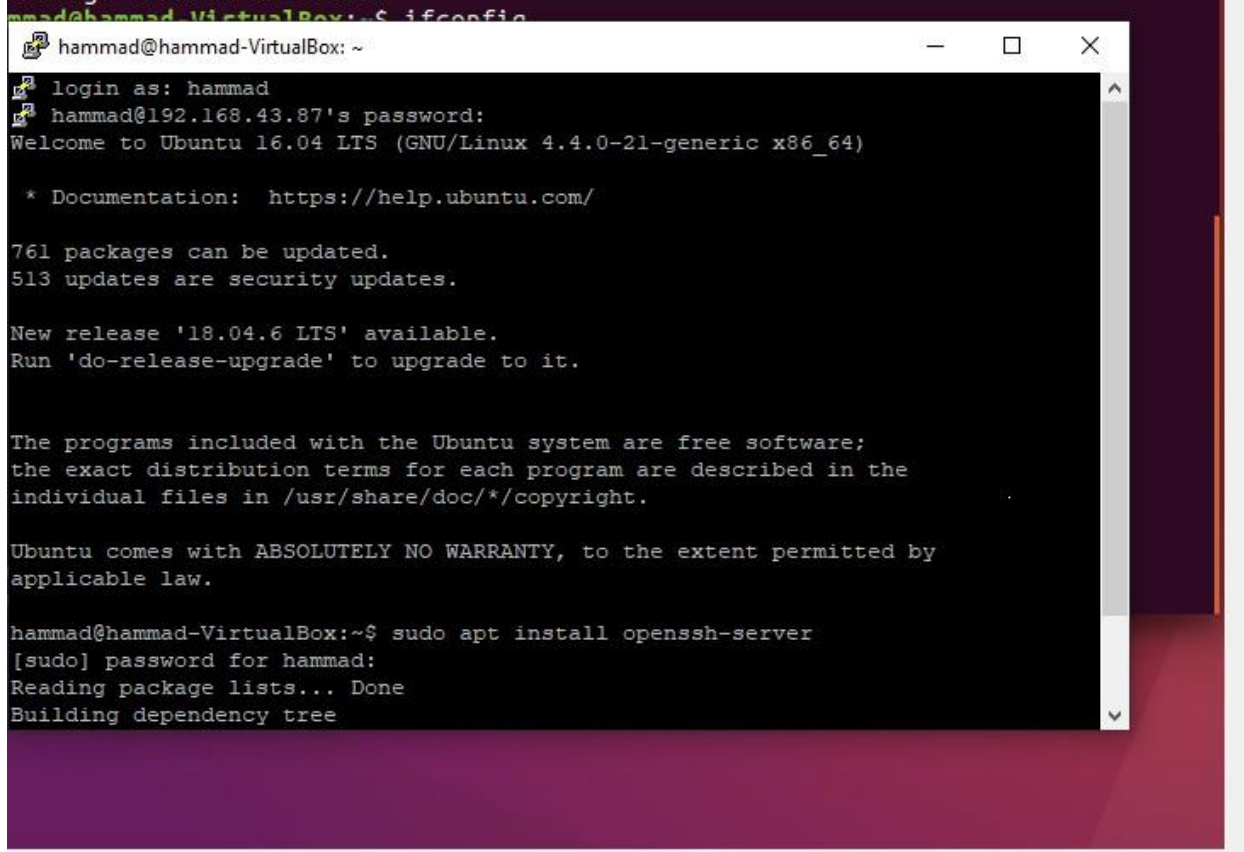
Openssh-Server is active it is running successfully.

11. Type command in the terminal to know the IP Address.

```
Terminal
hammad@hammad-VirtualBox: ~
Command 'ifconfig' from package 'ipmiutil' (universe)
Command 'iwconfig' from package 'wireless-tools' (main)
ipconfig: command not found
hammad@hammad-VirtualBox:~$ ifconfig
enp0s3  Link encap:Ethernet HWaddr 08:00:27:47:04:9d
        inet addr:192.168.43.87 Bcast:192.168.43.255 Mask:255.255.255.0
        inet6 addr: fe80::e70f:1862:7372:89d2/64 Scope:Link
        UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
        RX packets:85 errors:0 dropped:0 overruns:0 frame:0
        TX packets:89 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:18624 (18.6 KB) TX bytes:10734 (10.7 KB)

lo      Link encap:Local Loopback
        inet addr:127.0.0.1 Mask:255.0.0.0
        inet6 addr: ::1/128 Scope:Host
        UP LOOPBACK RUNNING MTU:65536 Metric:1
        RX packets:225 errors:0 dropped:0 overruns:0 frame:0
        TX packets:225 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1
        RX bytes:16792 (16.7 KB) TX bytes:16792 (16.7 KB)
```

12. Open putty software and connect to the ssh server's IP found in the terminal. Specify the valid reason, if the login is not successful or access is denied. Make a successful login.



```
hammad@hammad-VirtualBox: ~  
login as: hammad  
hammad@192.168.43.87's password:  
Welcome to Ubuntu 16.04 LTS (GNU/Linux 4.4.0-21-generic x86_64)  
  
 * Documentation:  https://help.ubuntu.com/  
  
761 packages can be updated.  
513 updates are security updates.  
  
New release '18.04.6 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
  
hammad@hammad-VirtualBox:~$ sudo apt install openssh-server  
[sudo] password for hammad:  
Reading package lists... Done  
Building dependency tree
```

### Note:

Make a word file. Convert it into PDF. Attach relevant screen shots and upload on LMS.

**It's a group assignment. Three persons at maximum allowed in one group.**