

## Practical 4

### Step 1: Install VirtualBox

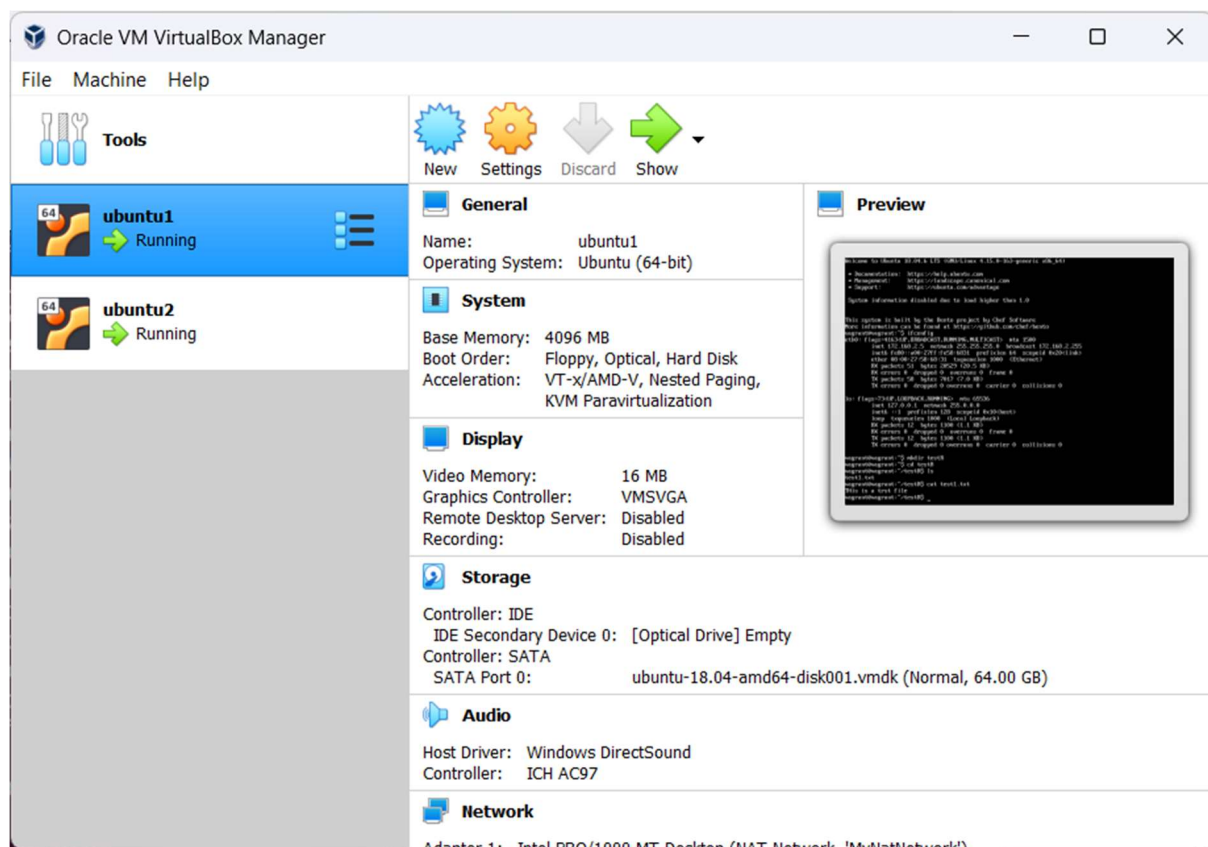
1. sudo apt-get update
2. sudo apt-get install virtualbox
3. sudo apt-get install virtualbox—ext-pack

### Step 2: Download Ubuntu 18 vagrant vmdk

[https://drive.google.com/drive/u/0/folders/1me\\_nJJh0fvdDOXX3ew2jzGQpoP7f\\_iFt](https://drive.google.com/drive/u/0/folders/1me_nJJh0fvdDOXX3ew2jzGQpoP7f_iFt)

### Step 3: open virtualbox

Type in terminal : virtualbox



## 2. Create new VM

Give any name to vm

? ×


← 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:  ▼

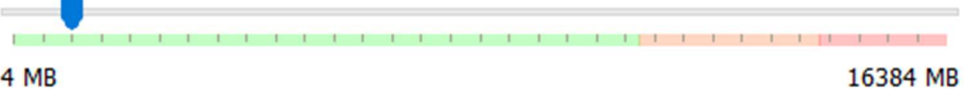
? ×

← Create Virtual Machine

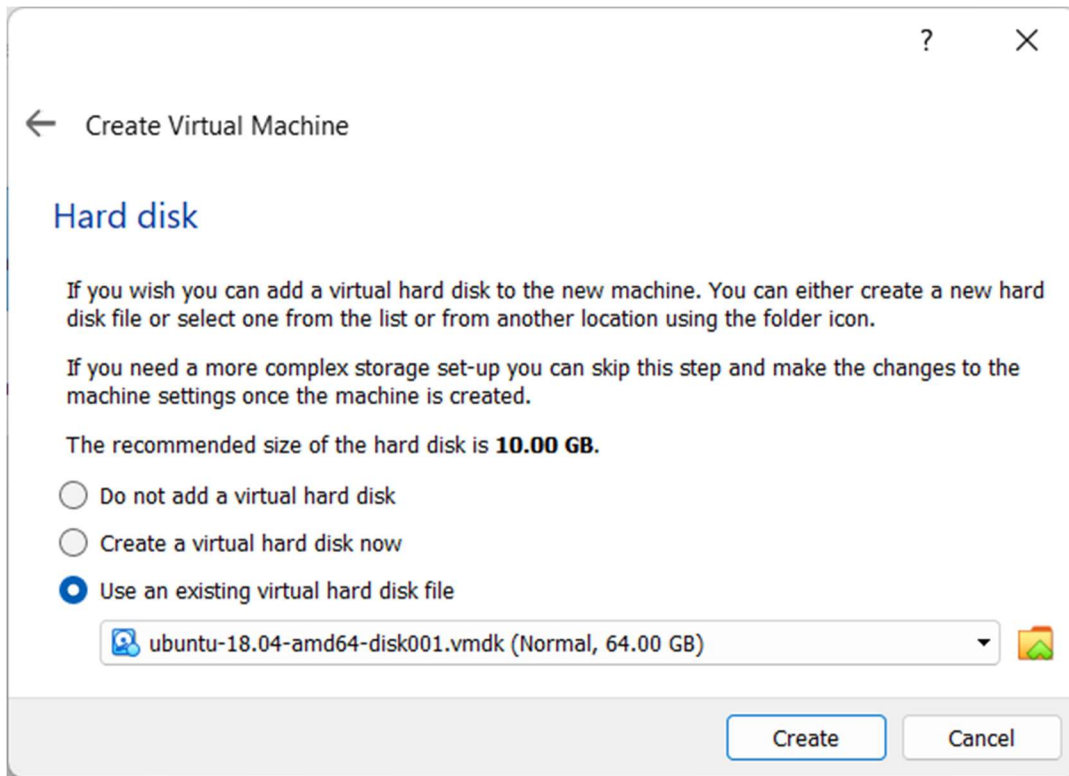
### Memory size

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

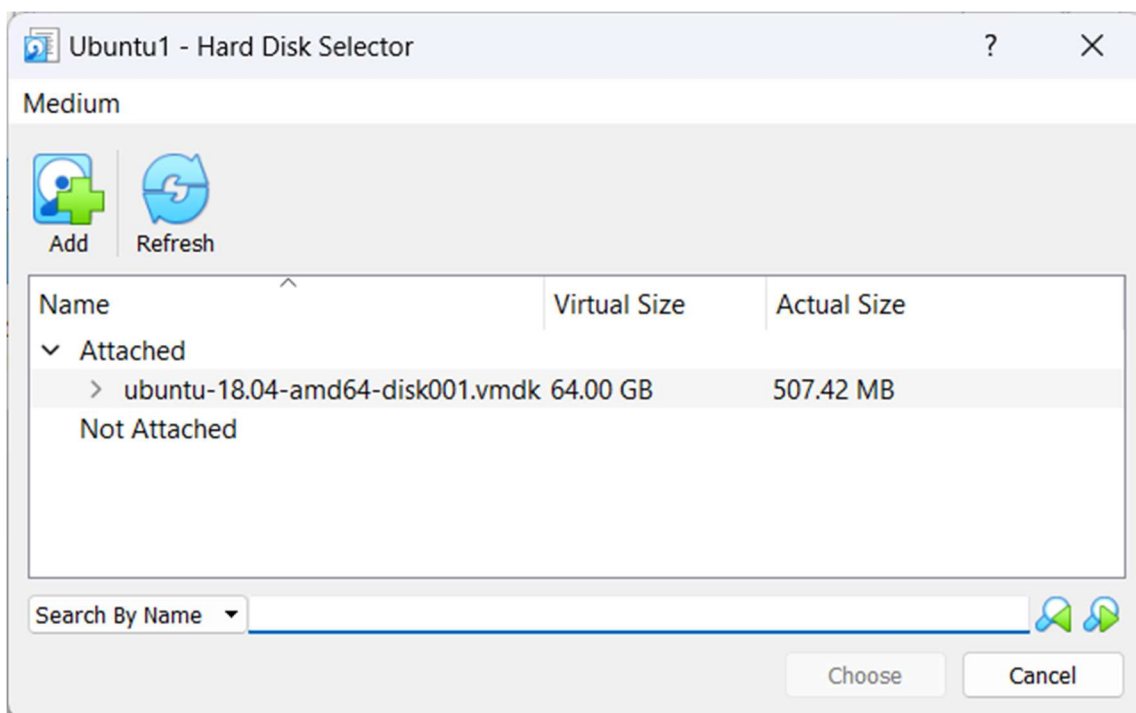
The recommended memory size is **1024** MB.

  MB

4 MB 16384 MB



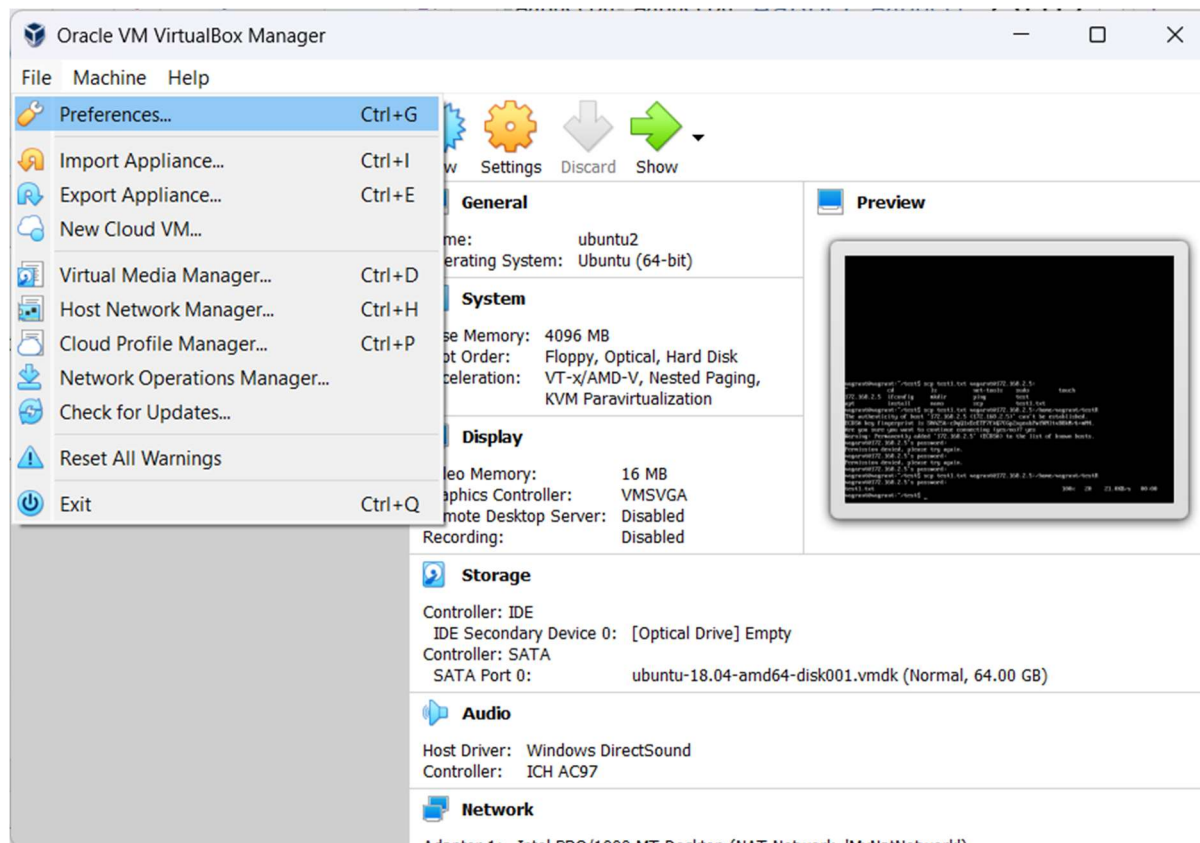
Click on Add and select ubuntu-18.04-amd64-disk001.vmdk and Choose that and press Create.



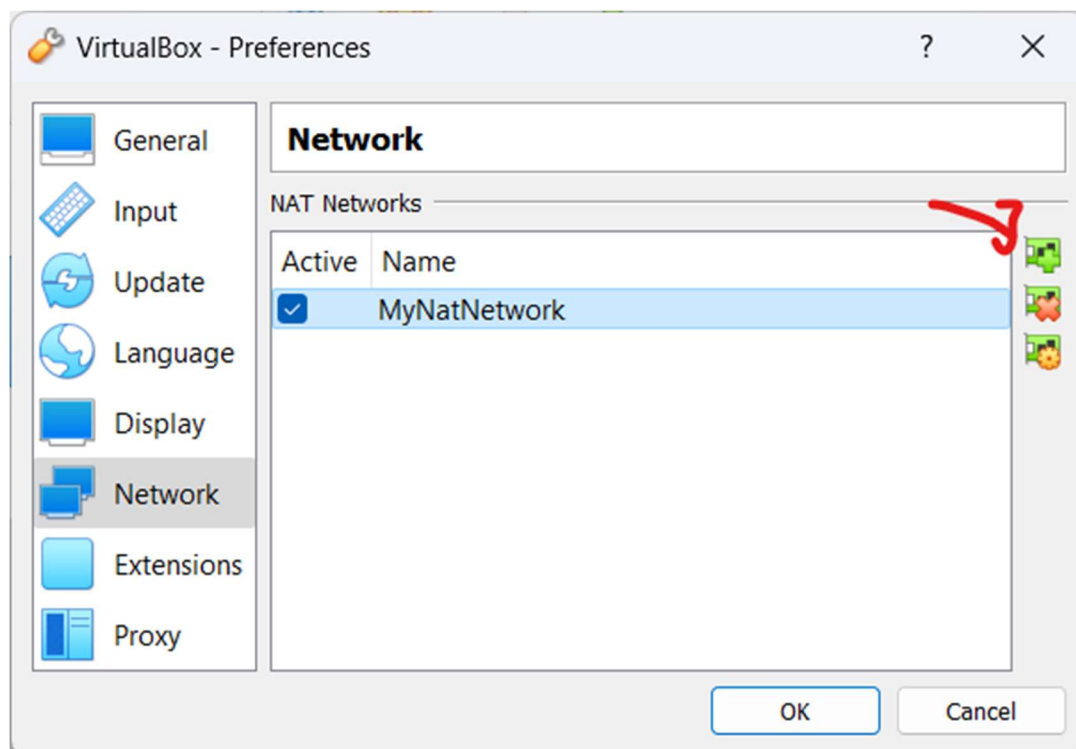
**Repeat this step and create another VM.**

## Step 4:

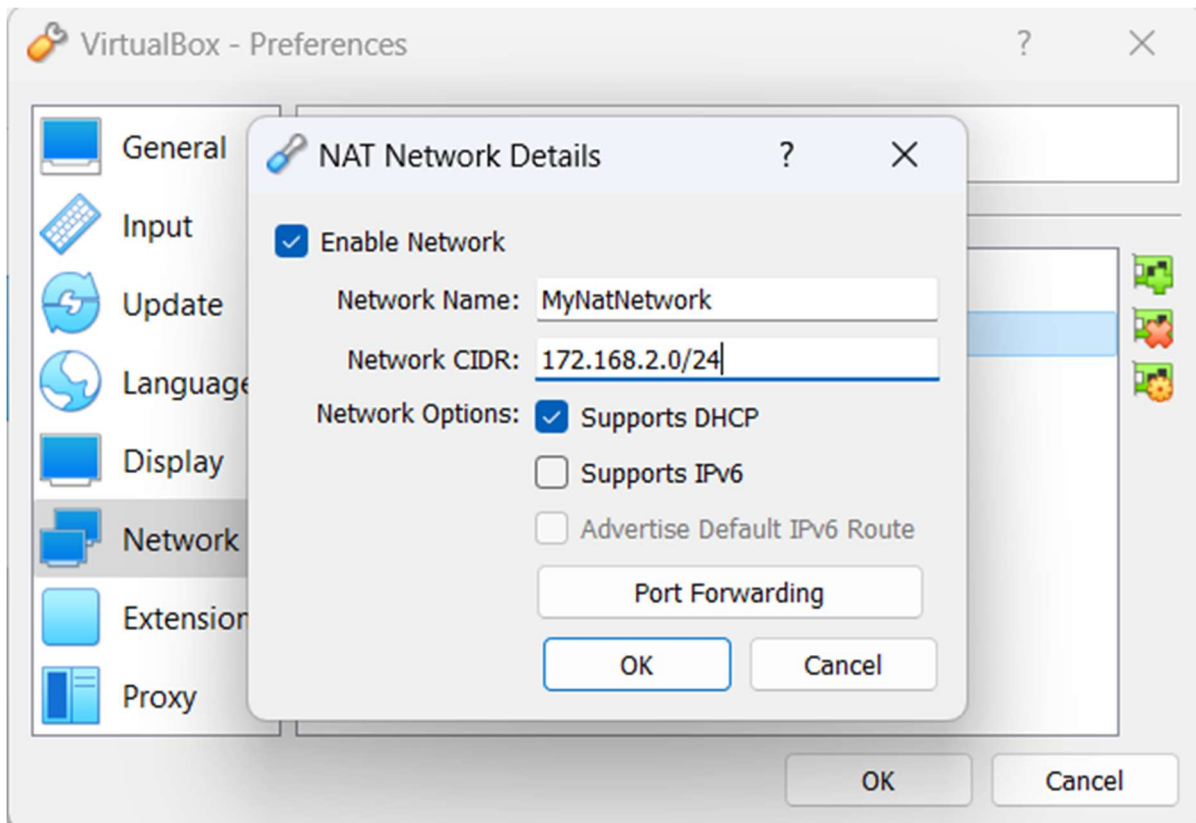
After create two VMs Go to Files and Preferences.



Go to Network and click on following icon

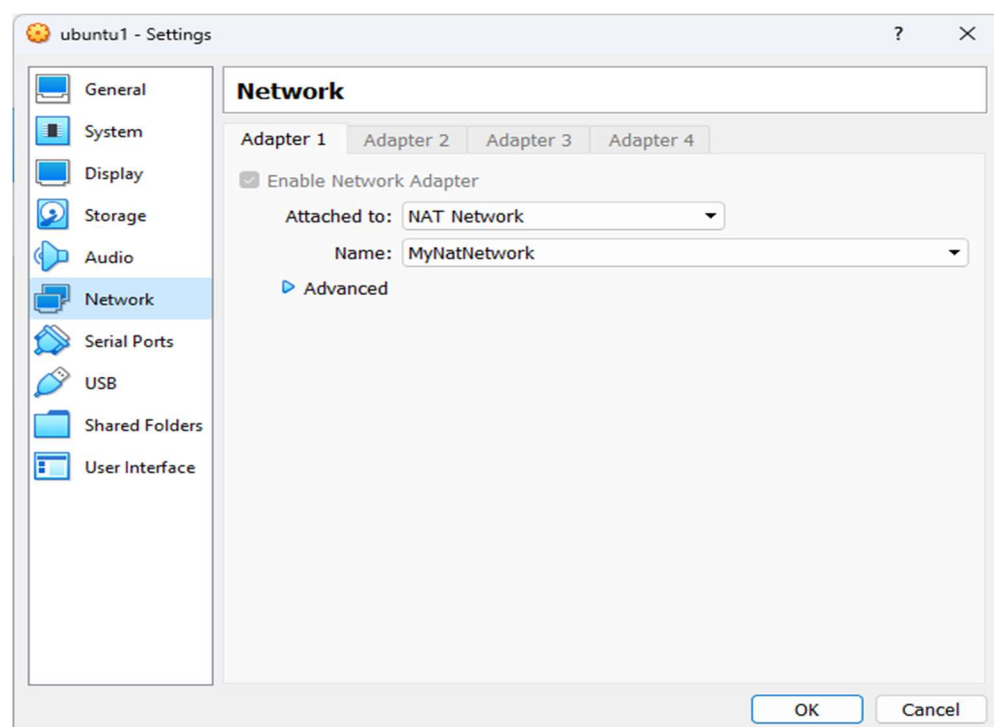


After New Network is Created right click on it and edit and change Network CIDR to 172.168.2.0/24



### Step 5: Connect your VMs to the Nat network

1. Right click on VM and go to settings
2. Go to network and click on Attached to and choose Nat Network
3. Choose Name of your network created (NatNetwork)
4. Do this to both the VMs



## Step 6: Start Both of your VMs

Default login: username: vagrant password: vagrant

On machine 1:

To Create new Folder : mkdir (folder-name)

To open folder: cd (folder-name)

To Create new File : touch (file-name).txt

\*note replace (file-name) with your file name and (folder-name) with your folder name

Machine 1:

```
* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:        https://ubuntu.com/advantage

System information disabled due to load higher than 1.0

This system is built by the Bento project by Chef Software
More information can be found at https://github.com/chef/bento
vagrant@vagrant:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 172.168.2.4  netmask 255.255.255.0  broadcast 172.168.2.255
    inet6 fe80::a00:27ff:feba:c89  prefixlen 64  scopeid 0x20<link>
    ether 08:00:27:ba:0c:89  txqueuelen 1000  (Ethernet)
    RX packets 27  bytes 11132 (11.1 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 37  bytes 4373 (4.3 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
    inet 127.0.0.1  netmask 255.0.0.0
    inet6 ::1  prefixlen 128  scopeid 0x10<host>
    loop txqueuelen 1000  (Local Loopback)
    RX packets 8  bytes 712 (712.0 B)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 8  bytes 712 (712.0 B)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

vagrant@vagrant:~$ ls
test
vagrant@vagrant:~$ mkdir test2
vagrant@vagrant:~$ cd test2
vagrant@vagrant:~/test2$ touch test2.txt
vagrant@vagrant:~/test2$ ls
test2.txt
vagrant@vagrant:~/test2$
```

On machine 2:

To get IP of you machine: ifconfig (note down the IP, in this VM is 172.168.2.5 yours might be different)

To Create new Folder: mkdir (folder-name)

To open folder: cd (folder-name)

\*note replace (file-name) with your file name and (folder-name) with your folder name

Machine 1:

```
vagrant login: vagrant
Password:
Last login: Fri Mar 24 09:37:31 UTC 2023 on tty1
Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 4.15.0-163-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information disabled due to load higher than 1.0

This system is built by the Bento project by Chef Software
More information can be found at https://github.com/chef/bento
vagrant@vagrant:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 172.168.2.5  netmask 255.255.255.0  broadcast 172.168.2.255
    inet6 fe80::a00:27ff:fe58:6831  prefixlen 64  scopeid 0x20<link>
    ether 08:00:27:58:68:31  txqueuelen 1000  (Ethernet)
    RX packets 31  bytes 11322 (11.3 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 40  bytes 4641 (4.6 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
    inet 127.0.0.1  netmask 255.0.0.0
    inet6 ::1  prefixlen 128  scopeid 0x10<host>
    loop txqueuelen 1000  (Local Loopback)
    RX packets 8  bytes 616 (616.0 B)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 8  bytes 616 (616.0 B)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

vagrant@vagrant:~$ mkdir receive
vagrant@vagrant:~$ cd receive
vagrant@vagrant:~/receive$ _
```



## Step 7: Send a file from machine 1 to machine 2

On machine 1:

To send file:

scp (file-name).txt vagrant@(IP Address):/home/vagrant/(folder-name created in machine 2)

It will ask for password, by default the password is **vagrant**.

\*note replace (file-name) with your file name and (IP Address) with IP address of your machine 2

Machine 1:

```
Login incorrect
vagrant login: vagrant
Password:
Last login: Fri Mar 24 18:05:27 UTC 2023 on tty1
Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 4.15.0-163-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Fri Mar 24 18:12:17 UTC 2023

System load:  0.84               Processes:           92
Usage of /:   2.5% of 61.80GB    Users logged in:    0
Memory usage: 3%                IP address for eth0: 172.168.2.4
Swap usage:   0%

This system is built by the Bento project by Chef Software
More information can be found at https://github.com/chef/bento
vagrant@vagrant:~$ ls
test  test2
vagrant@vagrant:~$ cd test
vagrant@vagrant:~/test$ ls
test1.txt
vagrant@vagrant:~/test$ touch file1.txt
vagrant@vagrant:~/test$ scp file1.txt vagrant@172.168.2.5:/home/receive
vagrant@172.168.2.5's password:
scp: /home/receive: Permission denied
vagrant@vagrant:~/test$ scp file1.txt vagrant@172.168.2.5:/home/receive
vagrant@172.168.2.5's password:
scp: /home/receive: Permission denied
vagrant@vagrant:~/test$ scp file1.txt vagrant@172.168.2.5:/home/vagrant/receive
vagrant@172.168.2.5's password:
file1.txt                                100%    0    0.0KB/s   00:00
vagrant@vagrant:~/test$
```



On Machine 2:

To check if you received the file

Go to your created folder and use: ls

Machine 2:

```
Password:
Last login: Fri Mar 24 09:37:31 UTC 2023 on tty1
Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 4.15.0-163-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information disabled due to load higher than 1.0

This system is built by the Bento project by Chef Software
More information can be found at https://github.com/chef/bento
vagrant@vagrant:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 172.168.2.5  netmask 255.255.255.0  broadcast 172.168.2.255
    inet6 fe80::a00:27ff:fe58:6831  prefixlen 64  scopeid 0x20<link>
    ether 08:00:27:58:68:31  txqueuelen 1000  (Ethernet)
    RX packets 31  bytes 11322 (11.3 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 40  bytes 4641 (4.6 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
    inet 127.0.0.1  netmask 255.0.0.0
    inet6 ::1  prefixlen 128  scopeid 0x10<host>
    loop txqueuelen 1000  (Local Loopback)
    RX packets 8  bytes 616 (616.0 B)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 8  bytes 616 (616.0 B)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

vagrant@vagrant:~$ mkdir receive
vagrant@vagrant:~$ cd receive
vagrant@vagrant:~/receive$ ls
file1.txt
vagrant@vagrant:~/receive$ _
```

You can repeat step 7 to transfer different files.

To understand the steps or if this steps didn't work for you, you can refer this video:

<https://youtu.be/OMaS0nZCTZc>