# Setting up documentation VM with Linux

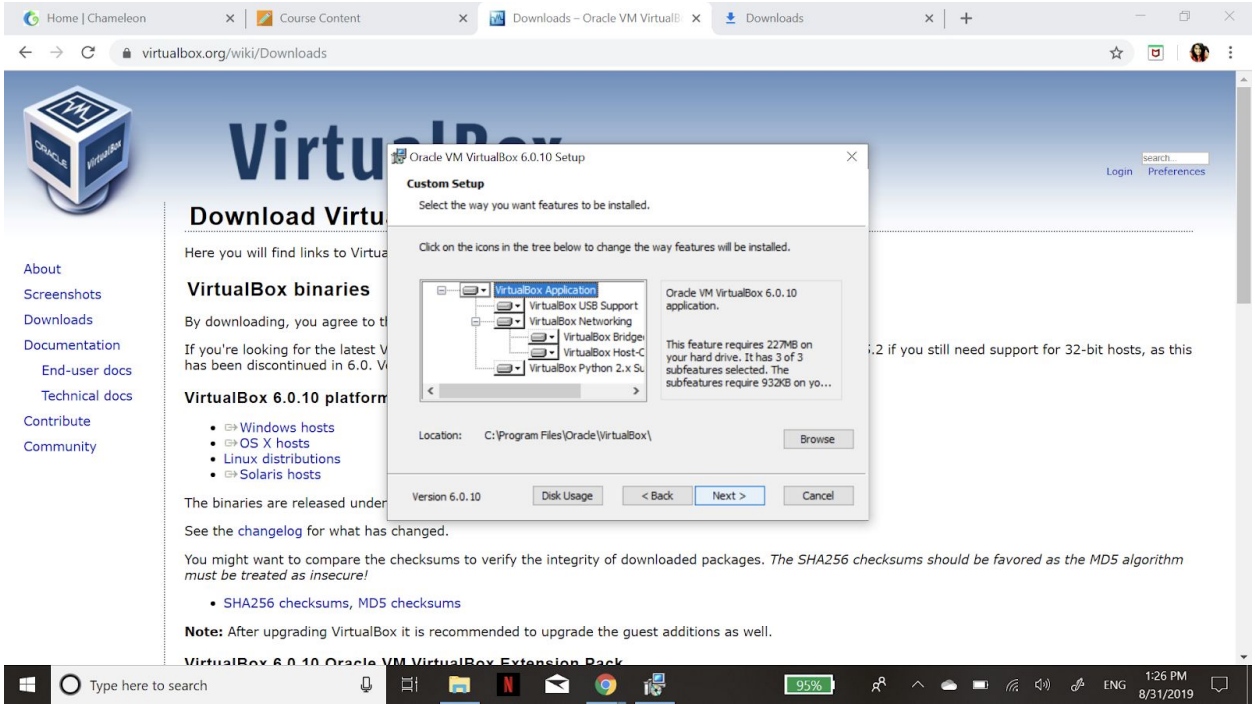
a. **Read Oracle VirtualBox White Paper**
Oracle VM VirtualBox is a cross-platform virtualization product, that allows you to run multiple operating systems on Mac OS, Windows, Linux, or Oracle Solaris. It supports a large number of guest operating systems Windows (NT 4.0, 2000, XP, Server 2003, Vista, Windows(7,8,10), DOS/Windows 3.x, Linux (2.4, 2.6, 3 and 4), Solaris and OpenSolaris, OS/2, and OpenBSD.

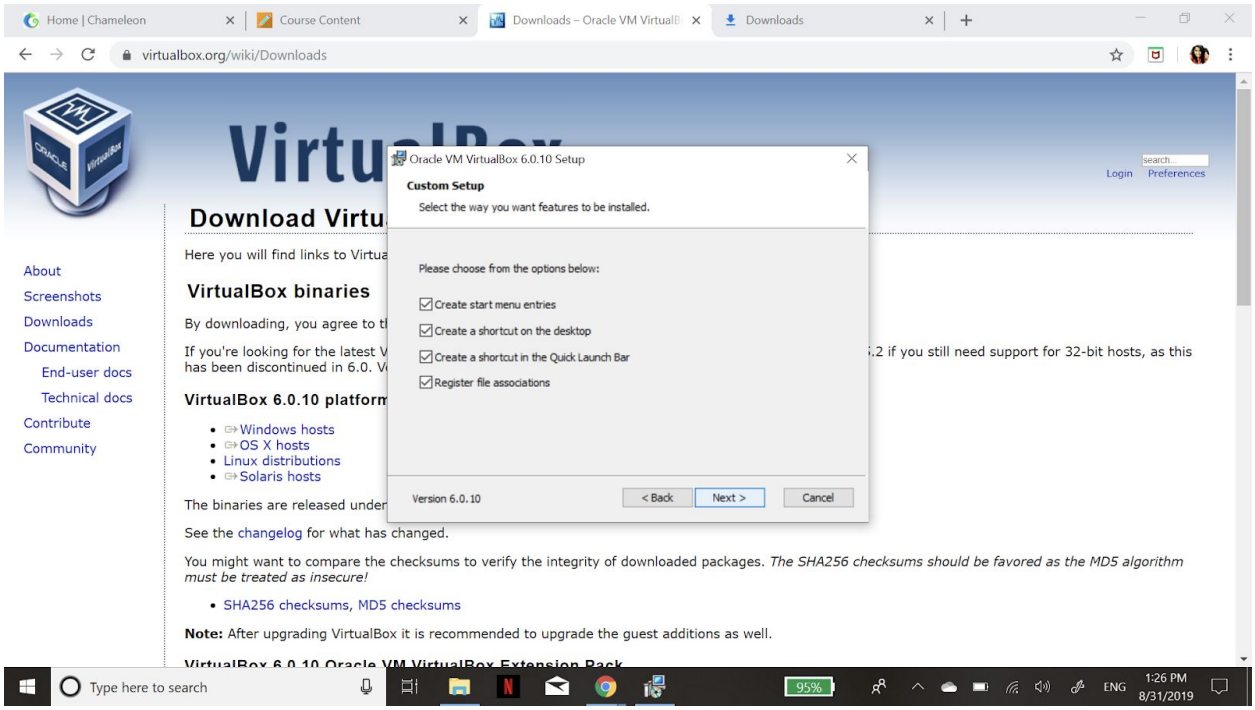
b. **Download Oracle VirtualBox 6.0.4**
Downloaded the Oracle VirtualBox from its downloads page as shown in the below screenshot.

c. **Install VirtualBox**
Click on the downloaded .exe file, a wizard pops up.

Click on “Next”.

Custom setup screen opens up.




OS asks “Network feature will reset your network connection and temporarily disconnects from the network. Proceed with the installation now?”. Click on Yes.

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virtualbox.org/wiki/Downloads
Oracle VM VirtualBox 6.0.10
Warning:
Network Interfaces
Installing the Oracle VM VirtualBox 6.0.10 Networking feature will reset your network connection and temporarily disconnect you from the network.
Proceed with installation now?
Version 6.0.10
Yes
No
Download Virtu
Here you will find links to Virtua
VirtualBox binaries
By downloading, you agree to t
If you're looking for the latest V
has been discontinued in 6.0. V
.2 if you still need support for 32-bit hosts, as this
VirtualBox 6.0.10 platform
Windows hosts
OS X hosts
Linux distributions
Solaris hosts
The binaries are released under
See the changelog for what has changed.
You might want to compare the checksums to verify the integrity of downloaded packages. The SHA256 checksums should be favored as the MD5 algorithm must be treated as insecure!
SHA256 checksums, MD5 checksums
Note: After upgrading VirtualBox it is recommended to upgrade the guest additions as well.
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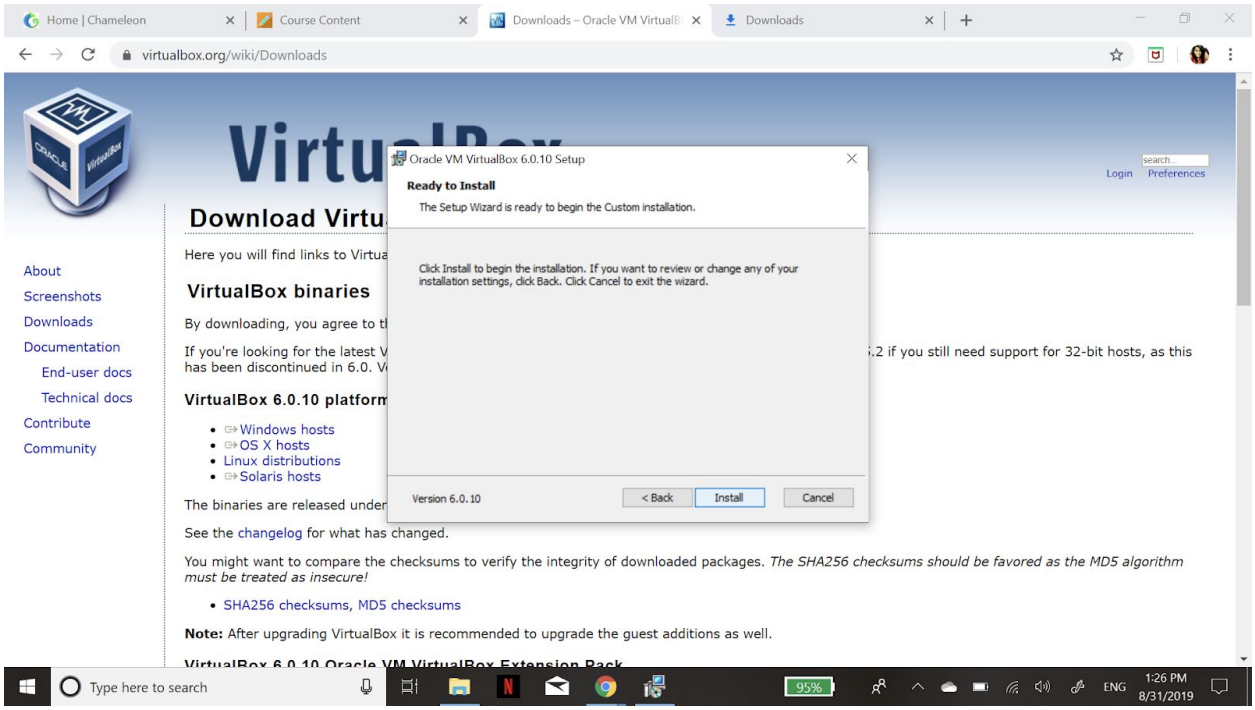
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Oracle VM VirtualBox 6.0.10 Setup
Ready to Install
The Setup Wizard is ready to begin the Custom installation.
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
Version 6.0.10
< Back
Install
Cancel
Download Virtu
Here you will find links to Virtua
VirtualBox binaries
By downloading, you agree to t
If you're looking for the latest V
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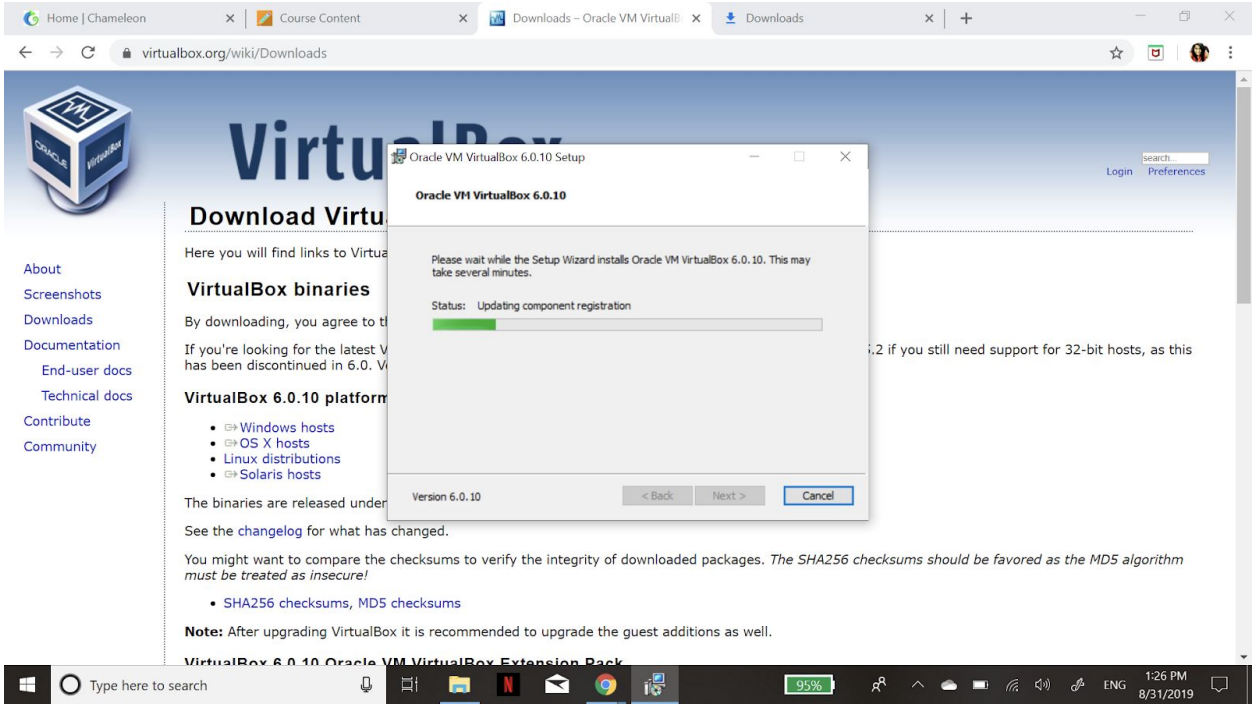
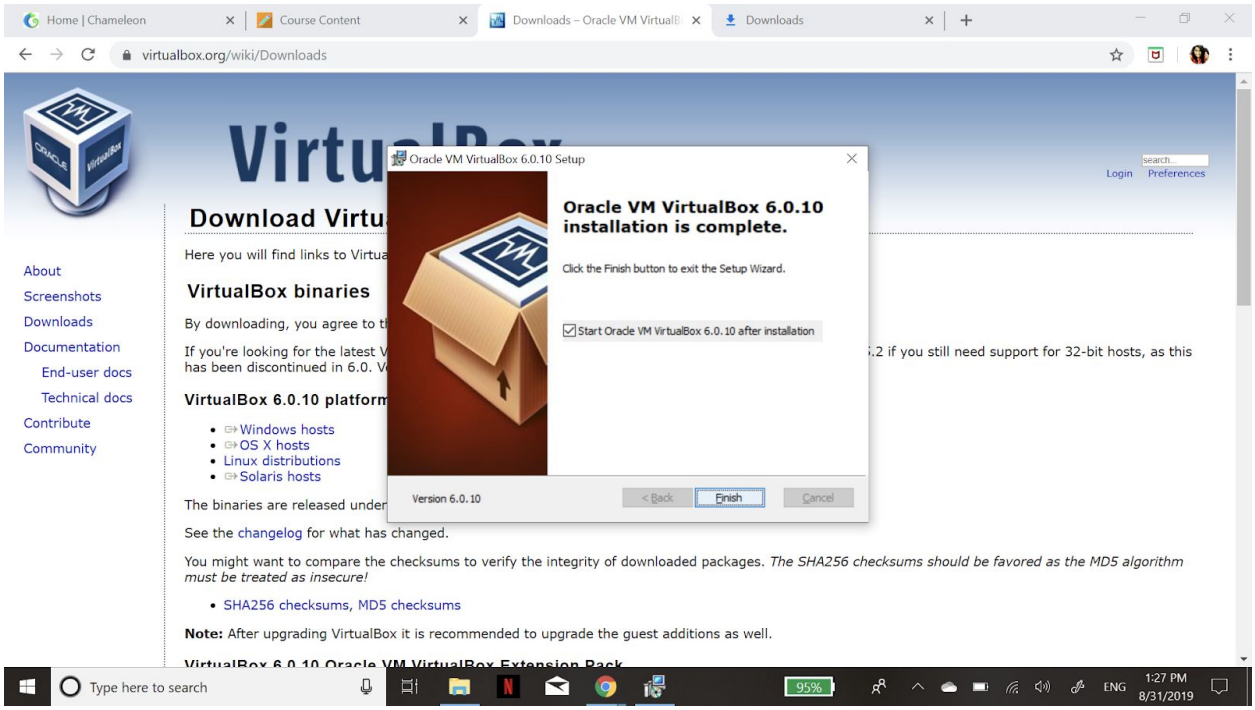
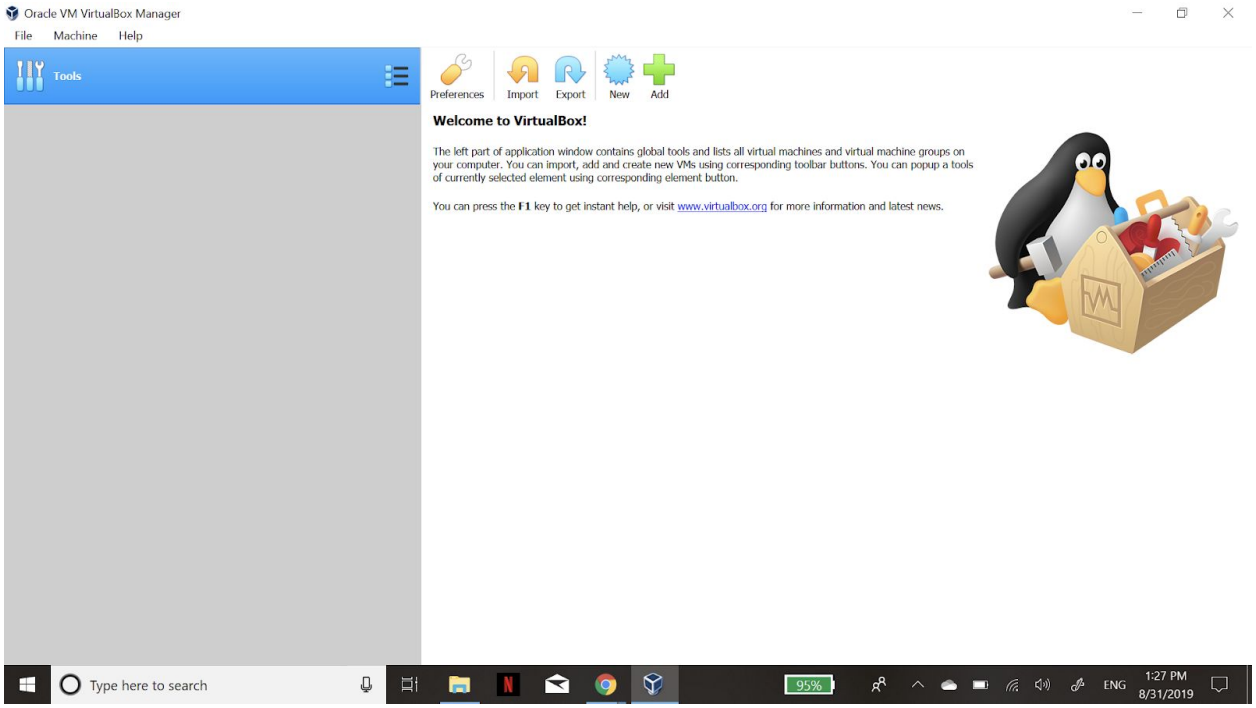


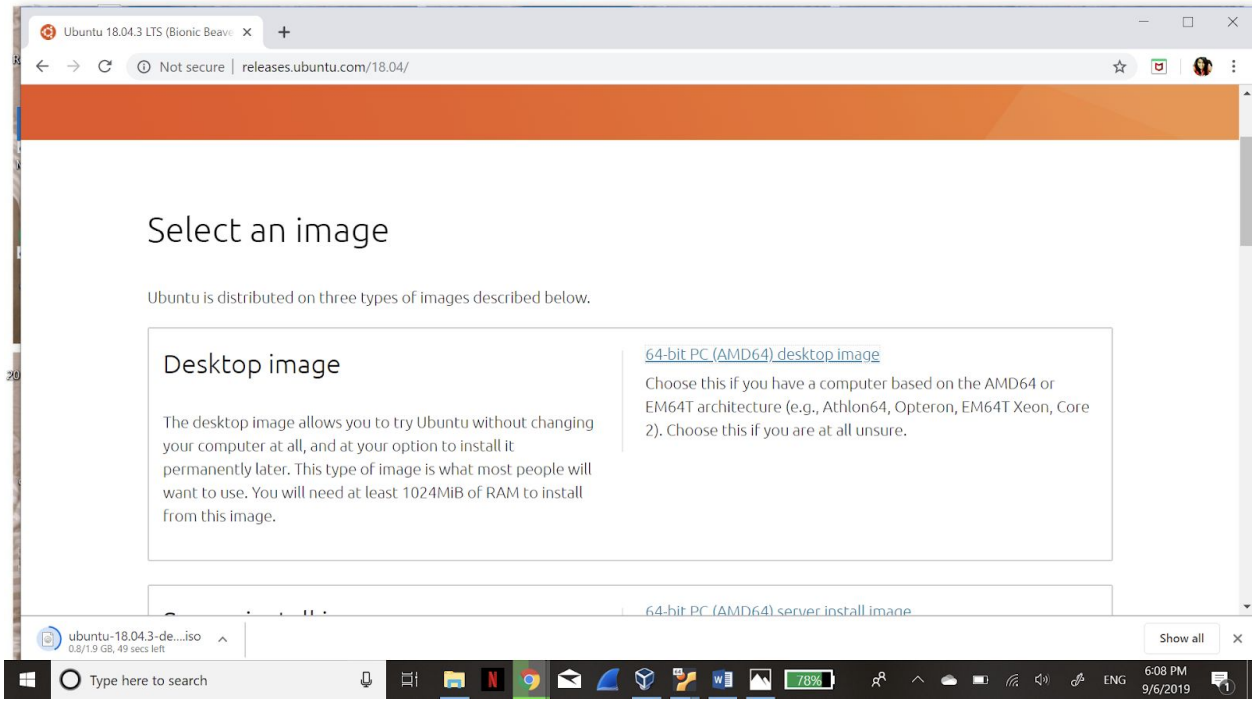

Installation is complete. Click on the finish button.




Open the software using the VM Box icon.

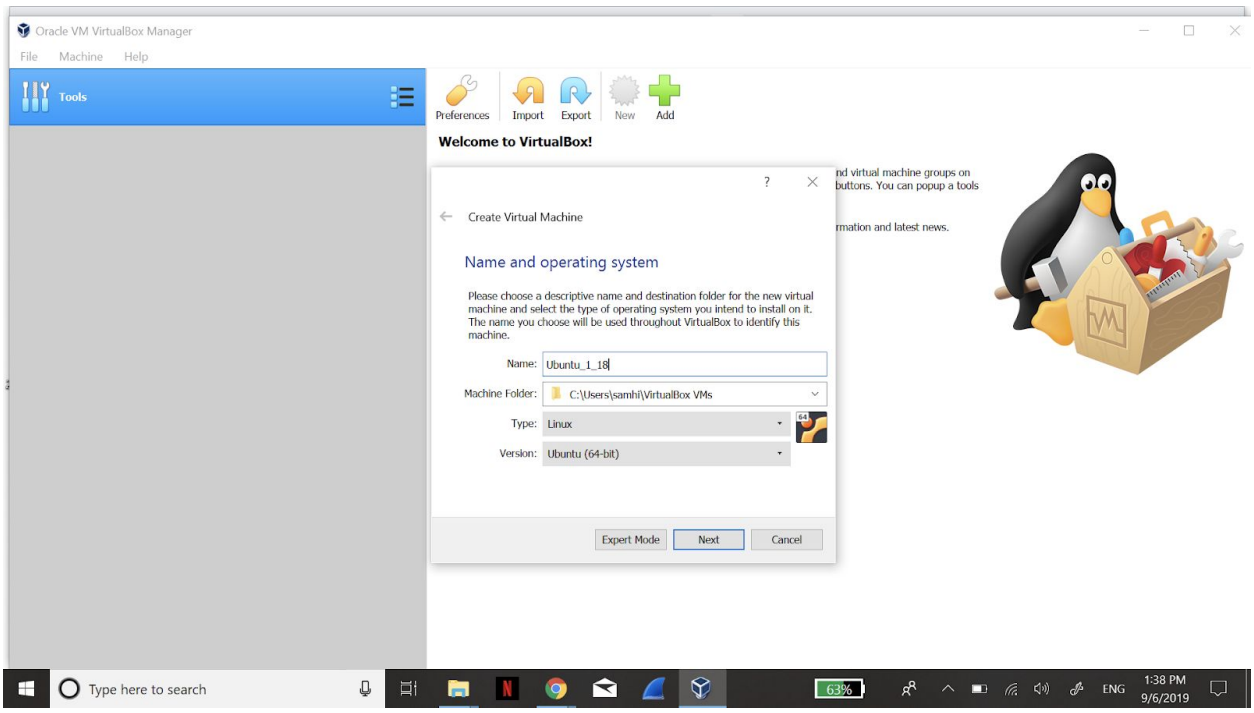



## d. Download Ubuntu 18.04.1 Linux ISO image

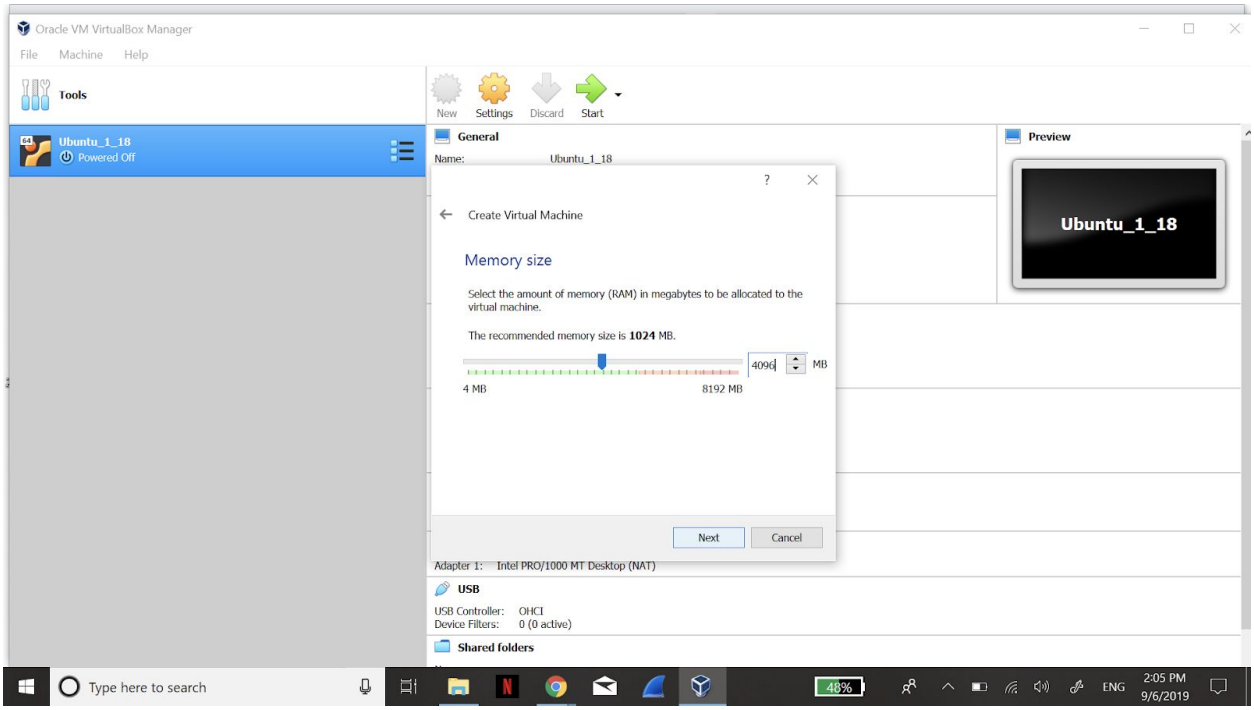


e. **Create Virtual Machine (VM), to support Linux, Ubuntu, 64-bit, 4GB RAM, Virtual Disk 25GB, VDI image, dynamically allocated, 2-core, and a network interface (1GbE or WiFi) with Bridged Adapter**

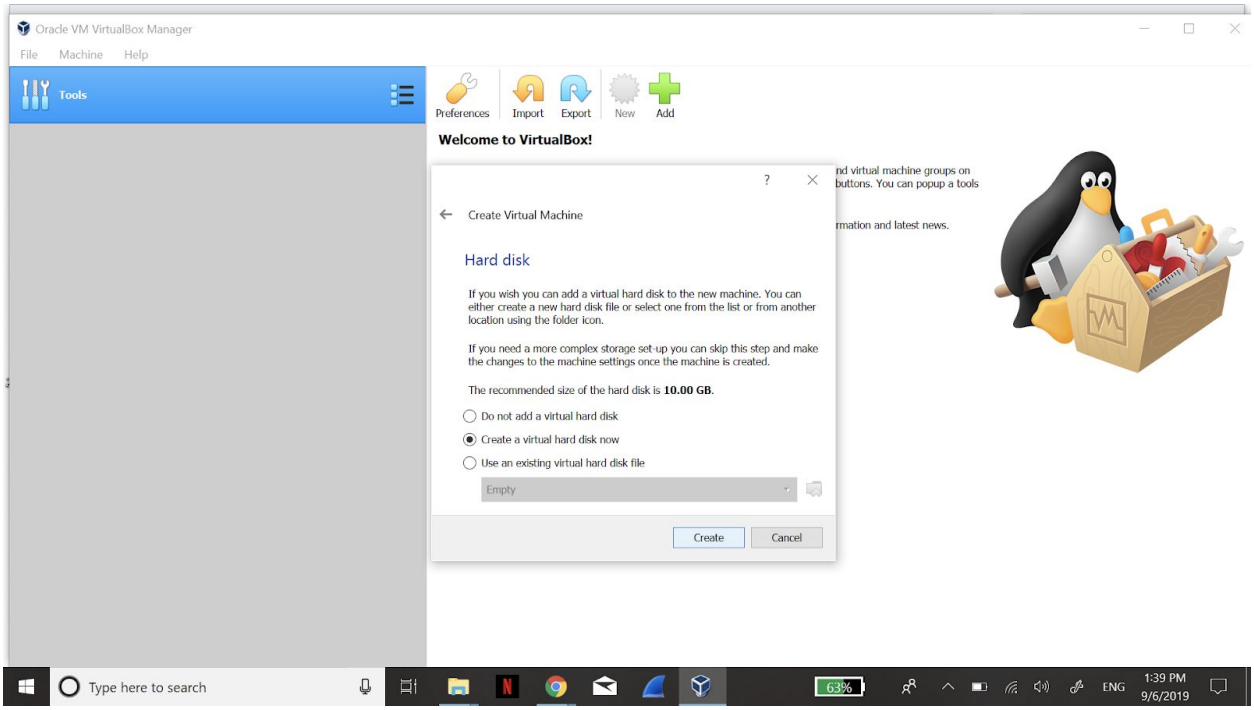
Click on “New” button to create a New Virtual Machine. Select the OS type as Linux and version as Ubuntu (64 bit). For this machine, we have given name as “Ubuntu_1_18”. Click on Next button.



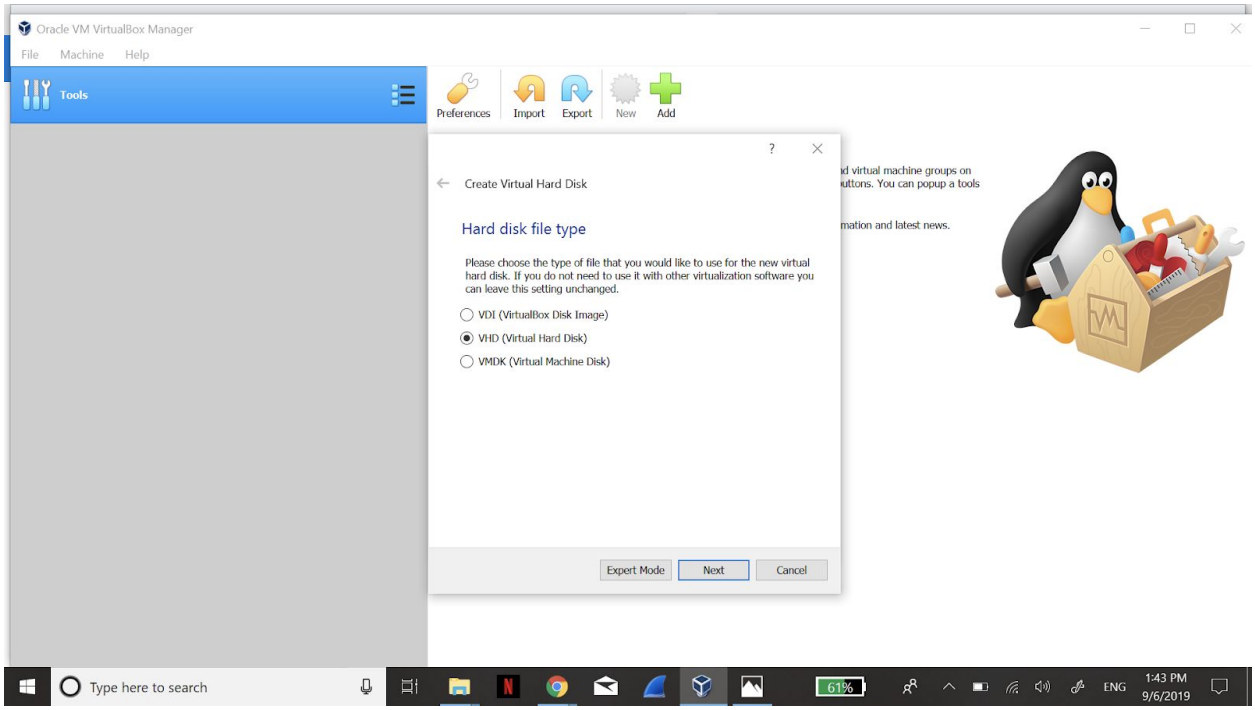

Select the RAM size as 4GB and click on next.



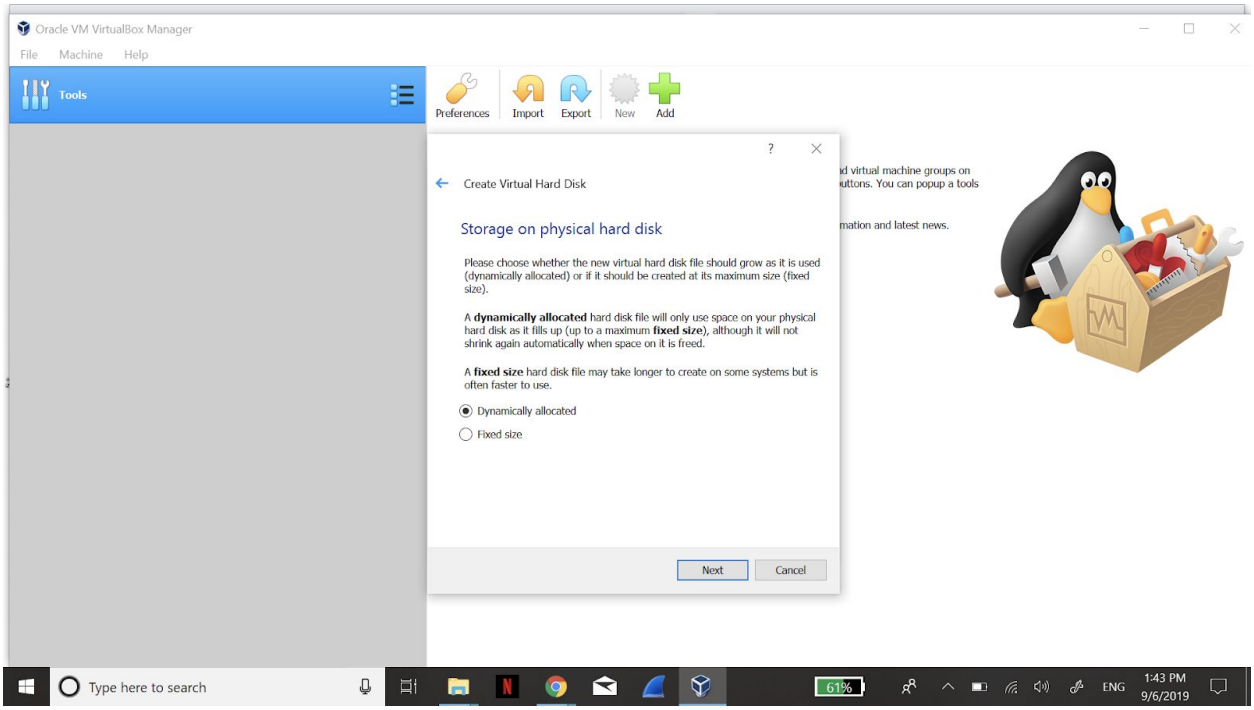

The below screen shows the Hard Disk options. Click on “Create a virtual disk now”.



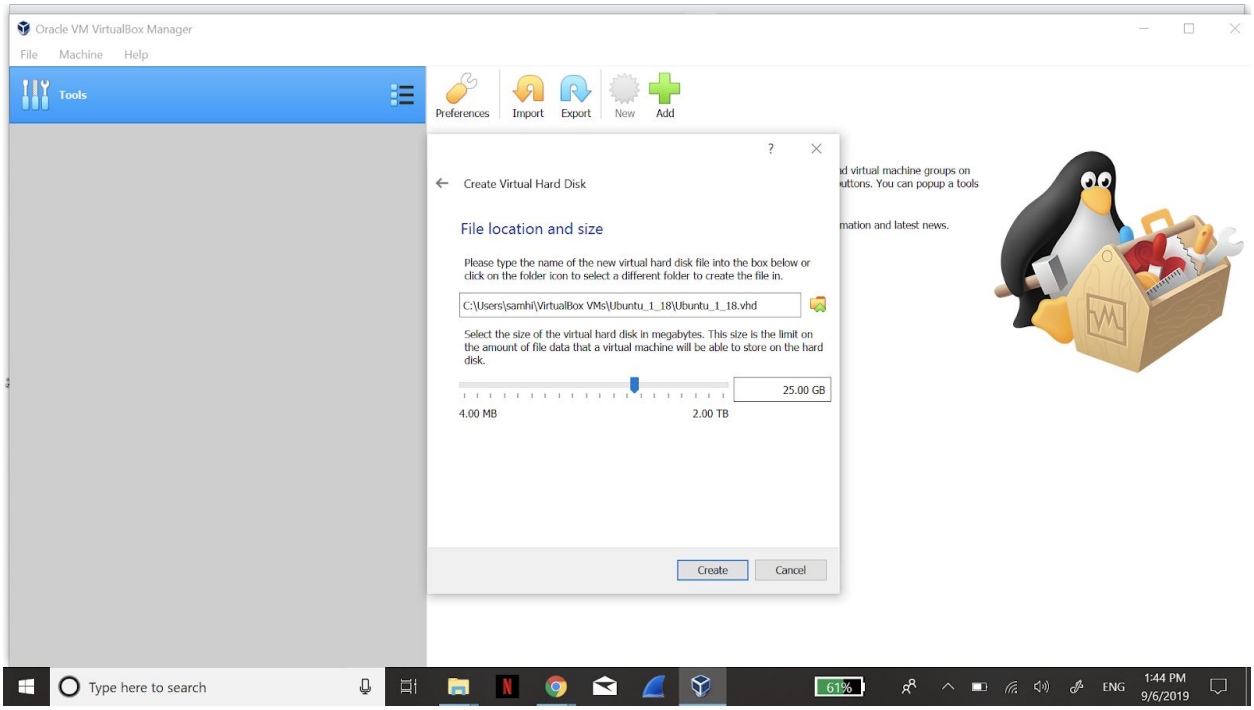

Select the Hard Disk file type as Virtual Hard Disk.



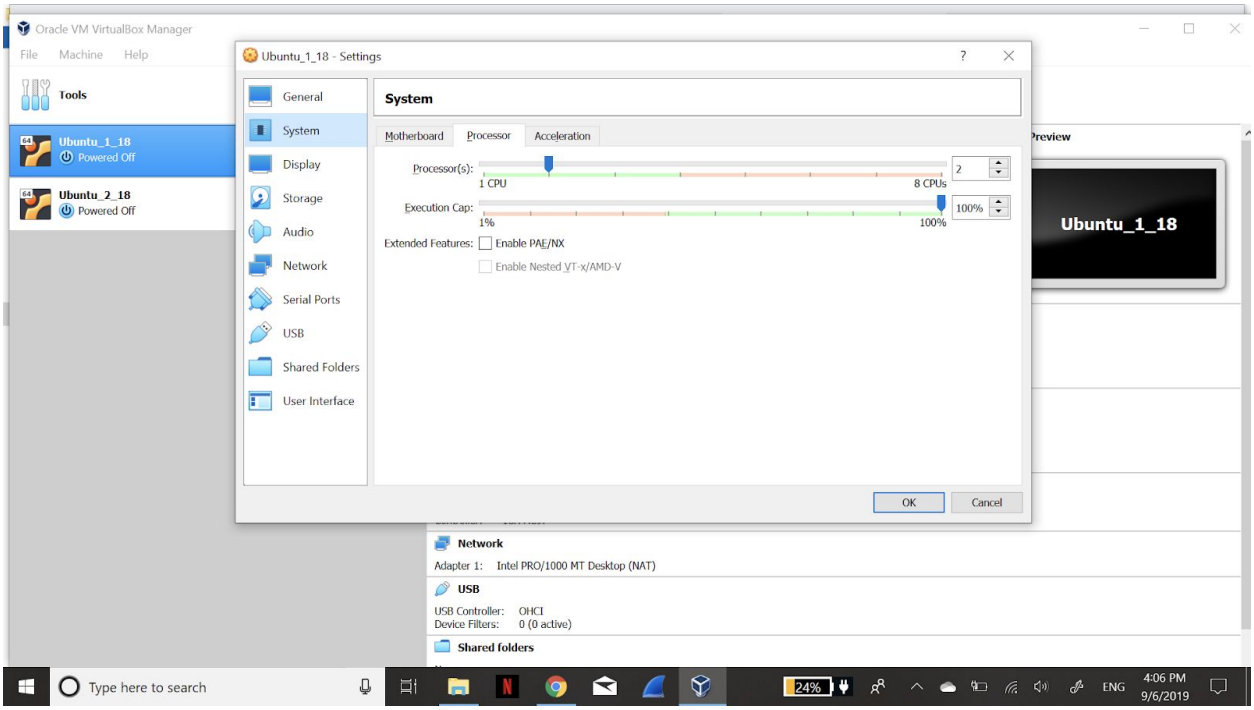

Select the “Storage on physical hard disk” as Dynamically allocated.



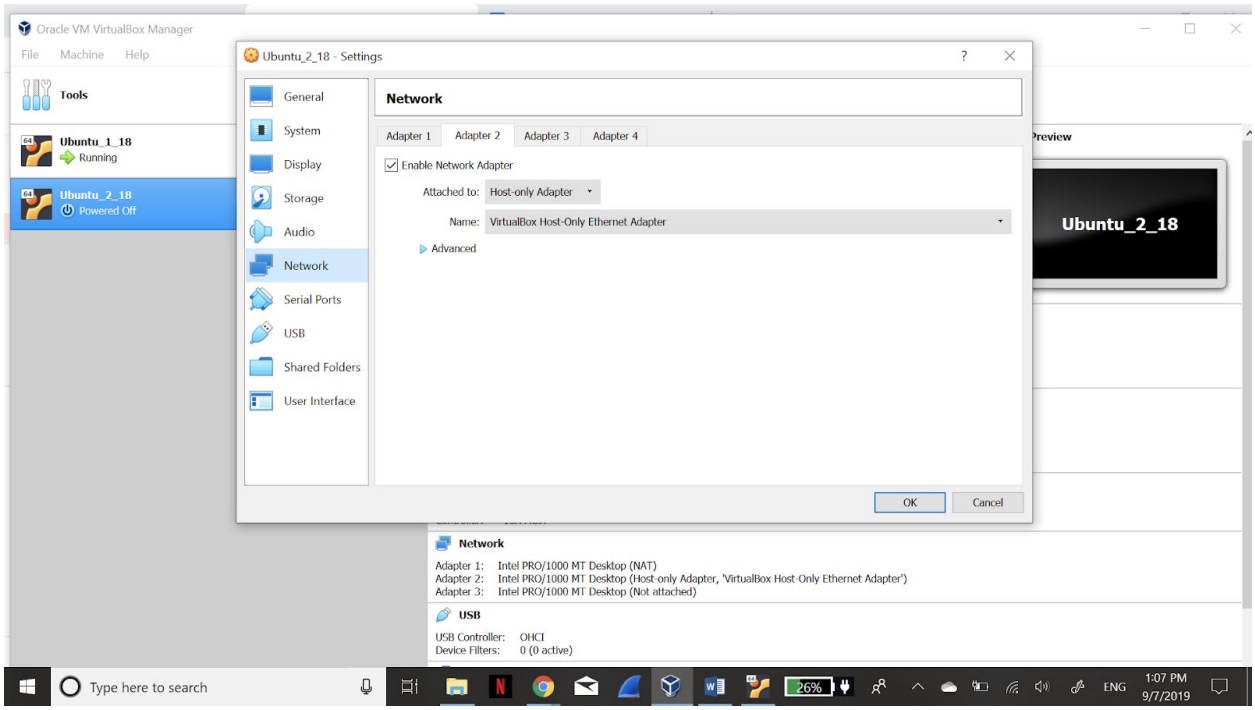

Select the Virtual Hard Disk location and Size. We allocated 25 GB.




A Virtual Machine is created.
Go to Settings and select System. Under System, select the Processor tab, select a 2 core-processor.

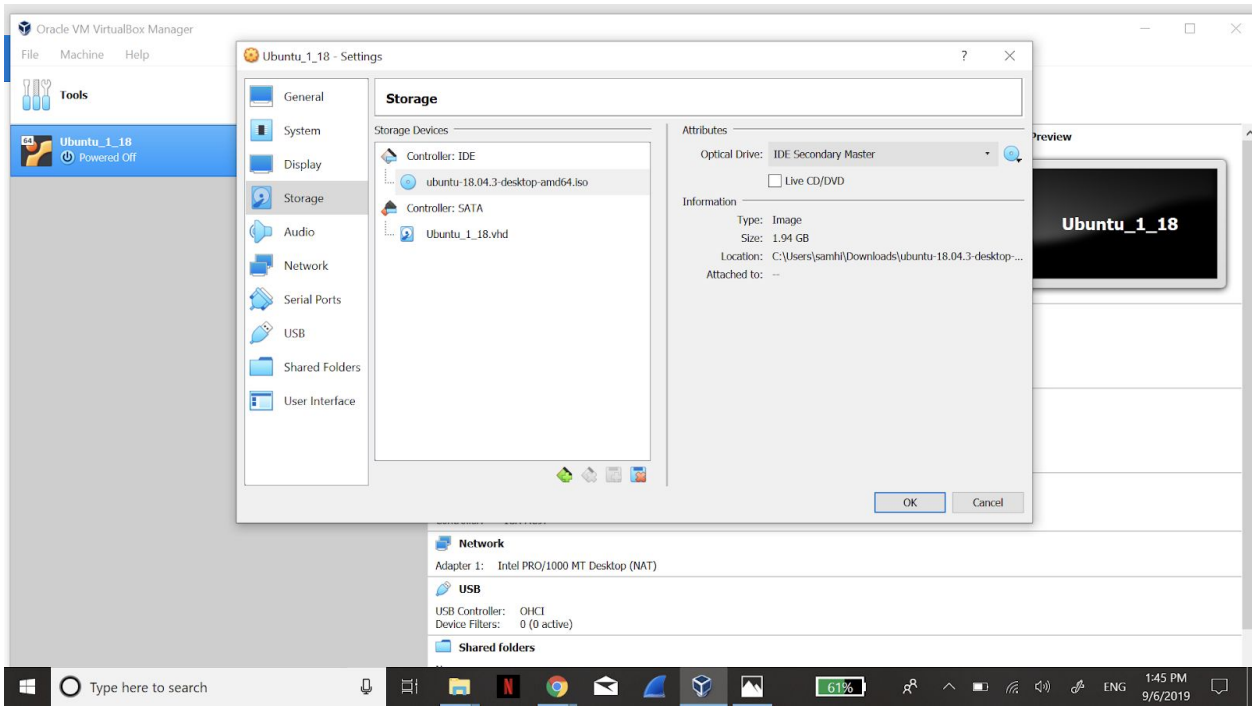



Go to settings and under Network add the network interface as Bridged Adapter.

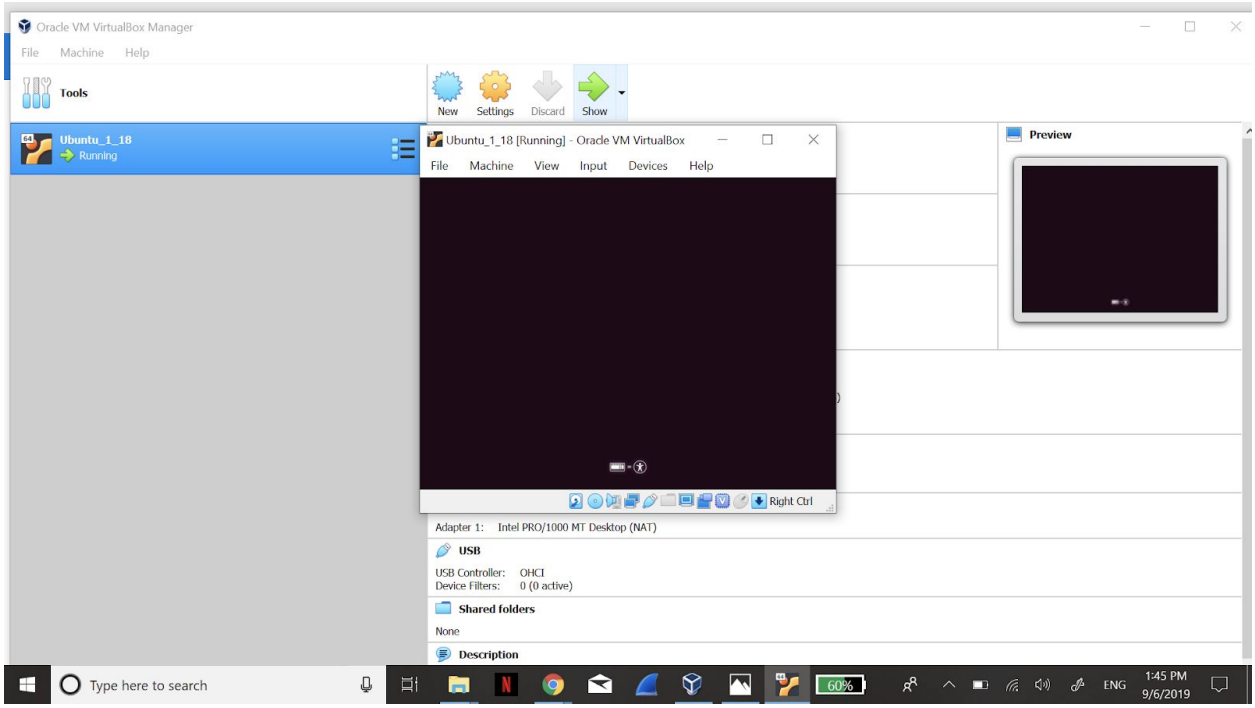



## f. Install Linux from the ISO image

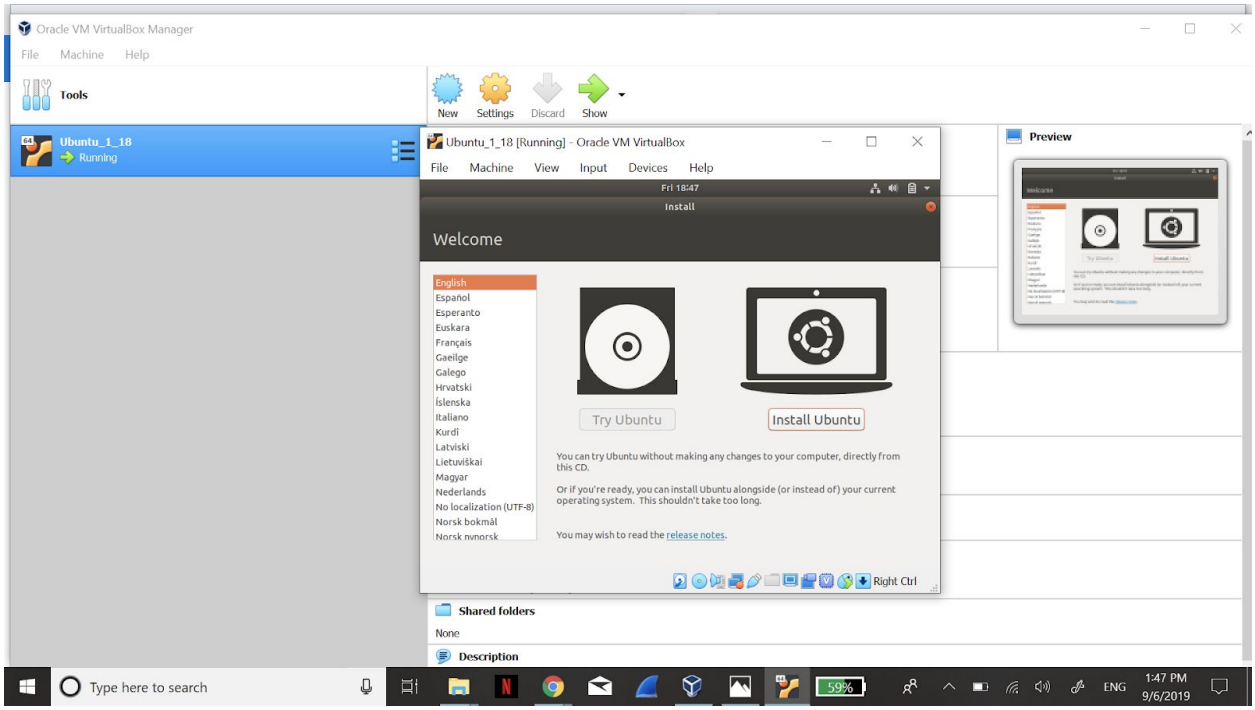
Go to settings and under “Storage” select the Controller IDE as downloaded ubuntu ISO image.



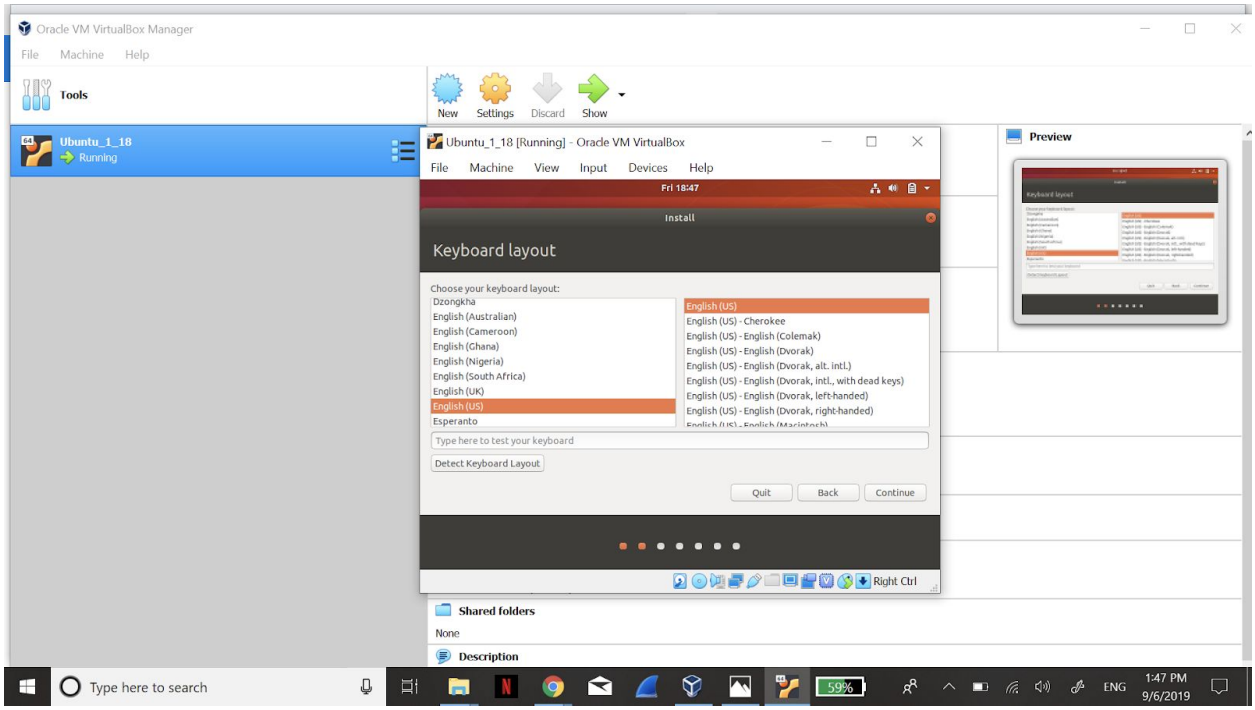

Click on Start button in the Virtual Image box by selecting the new VM.



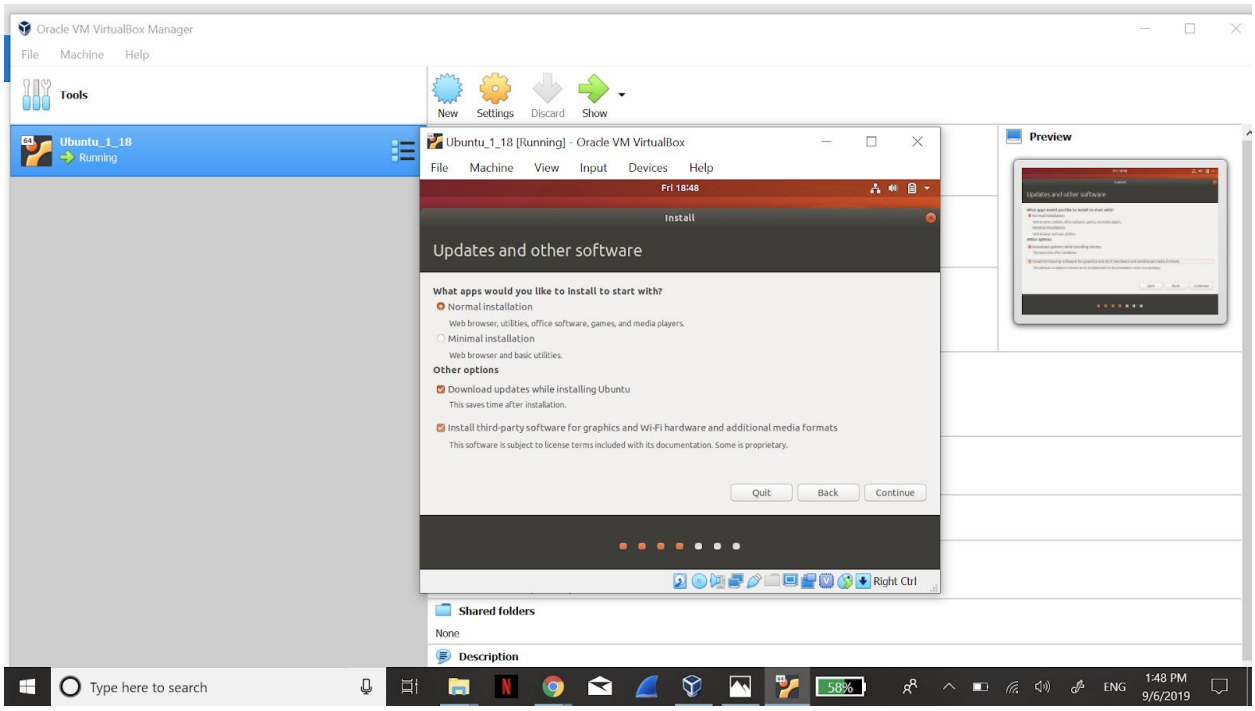

Click on Install Ubuntu to install the Ubuntu 18 in the new Virtual Machine.



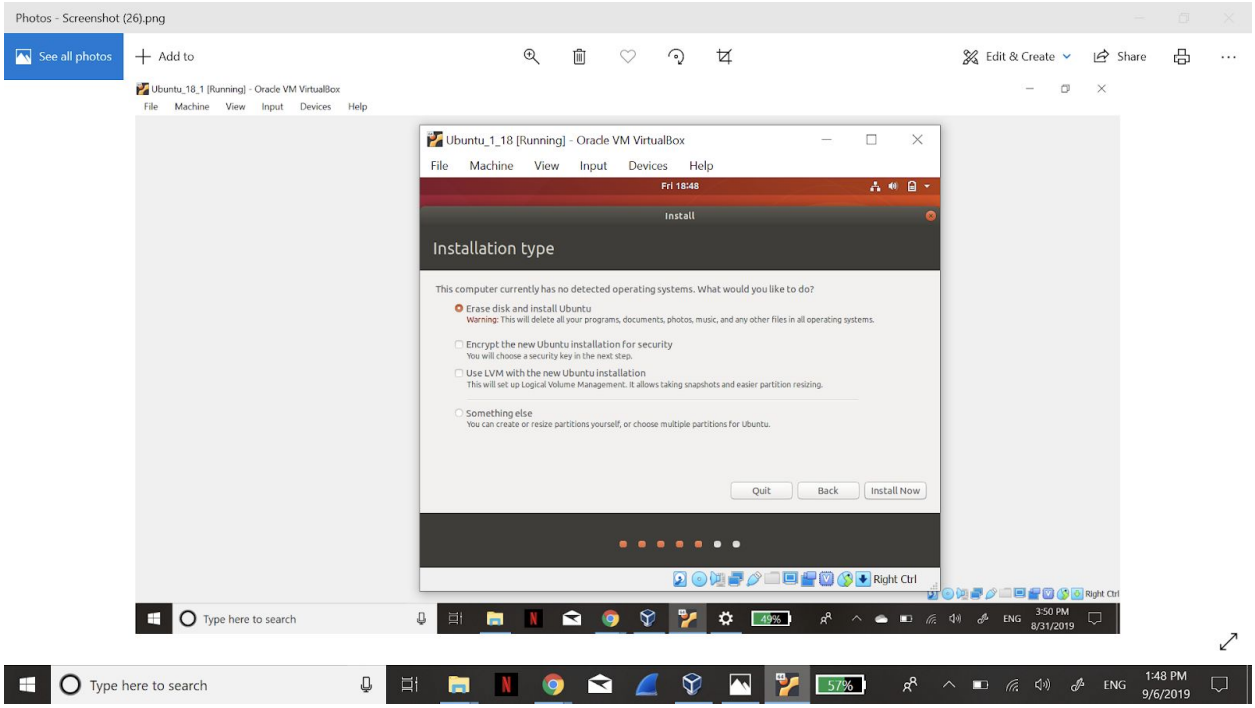

Select the language as english in the keyboard layout.




This screen is asking about the installation type minimal or normal. Select the Normal Installation and and click on install third-party software for graphics and wi-fi hardware and media additional formats.

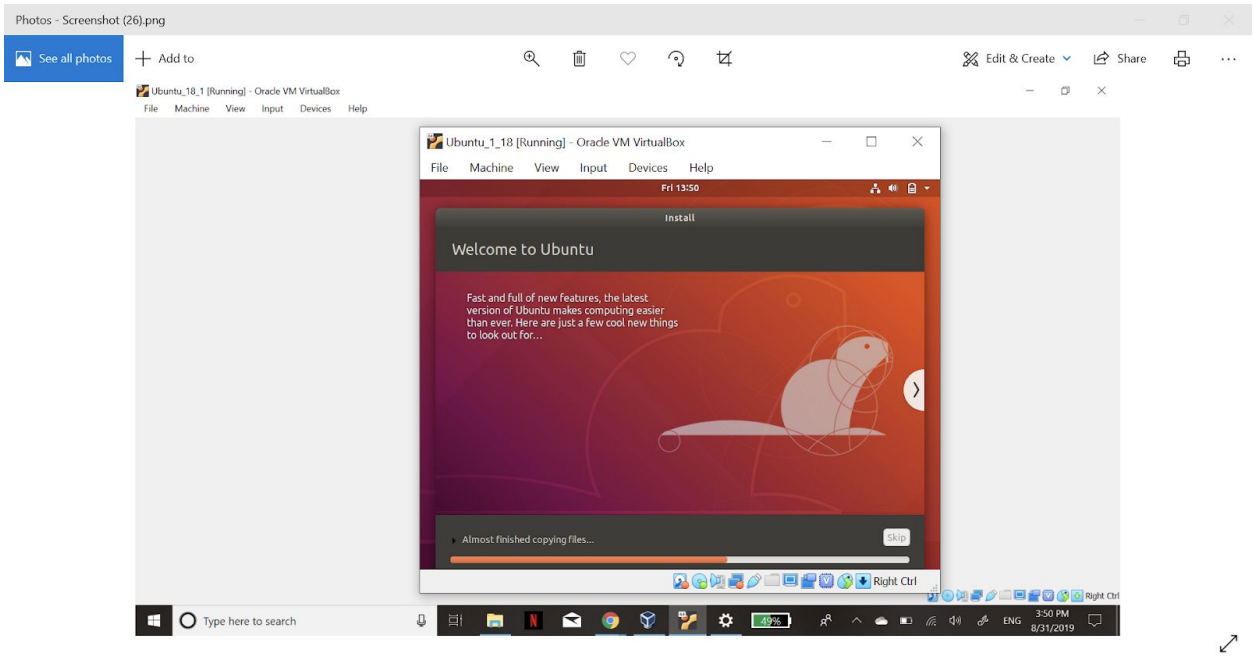



On this screen, go for “Erase disk and install Ubuntu” to have a new installation.





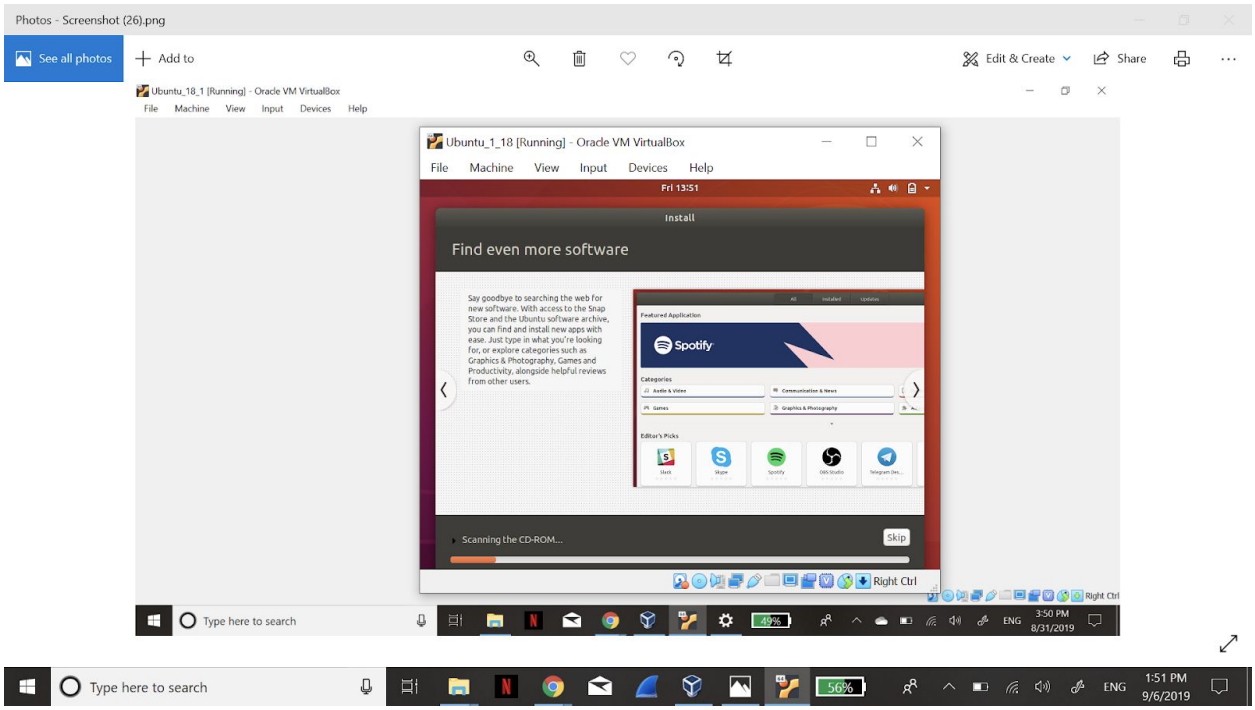






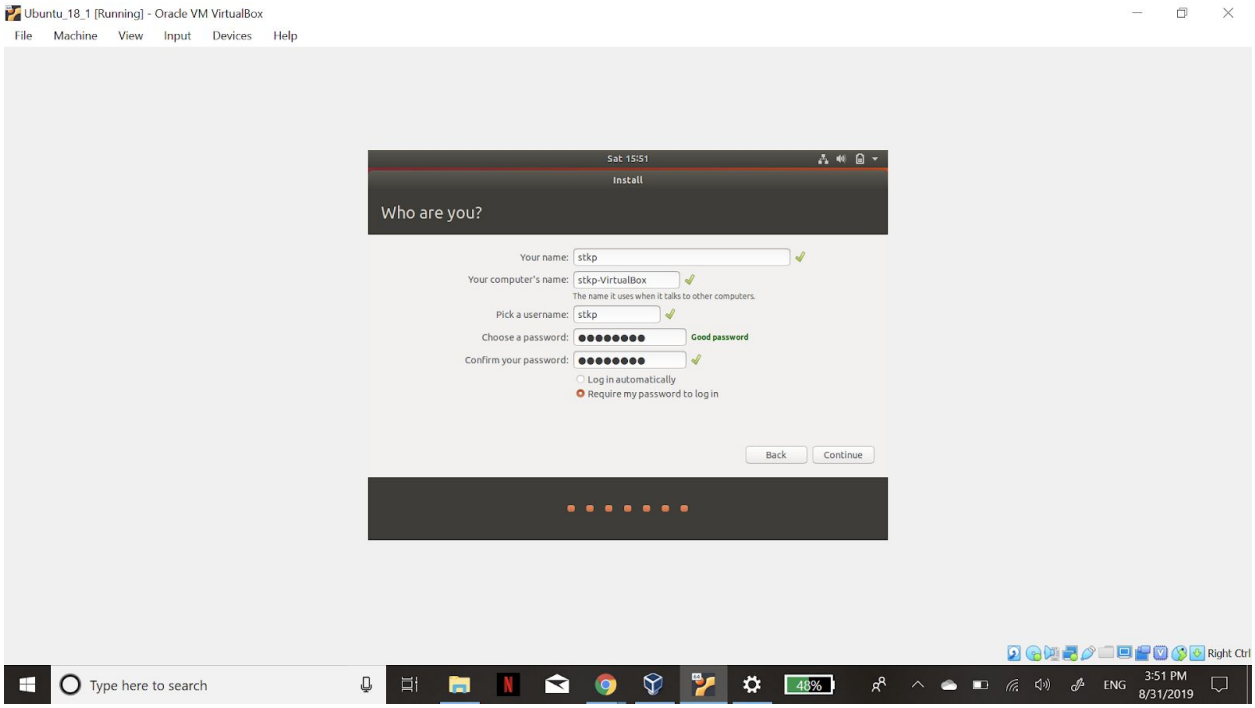


During installation, Ubuntu asks for extra software program to select. Click on skip.

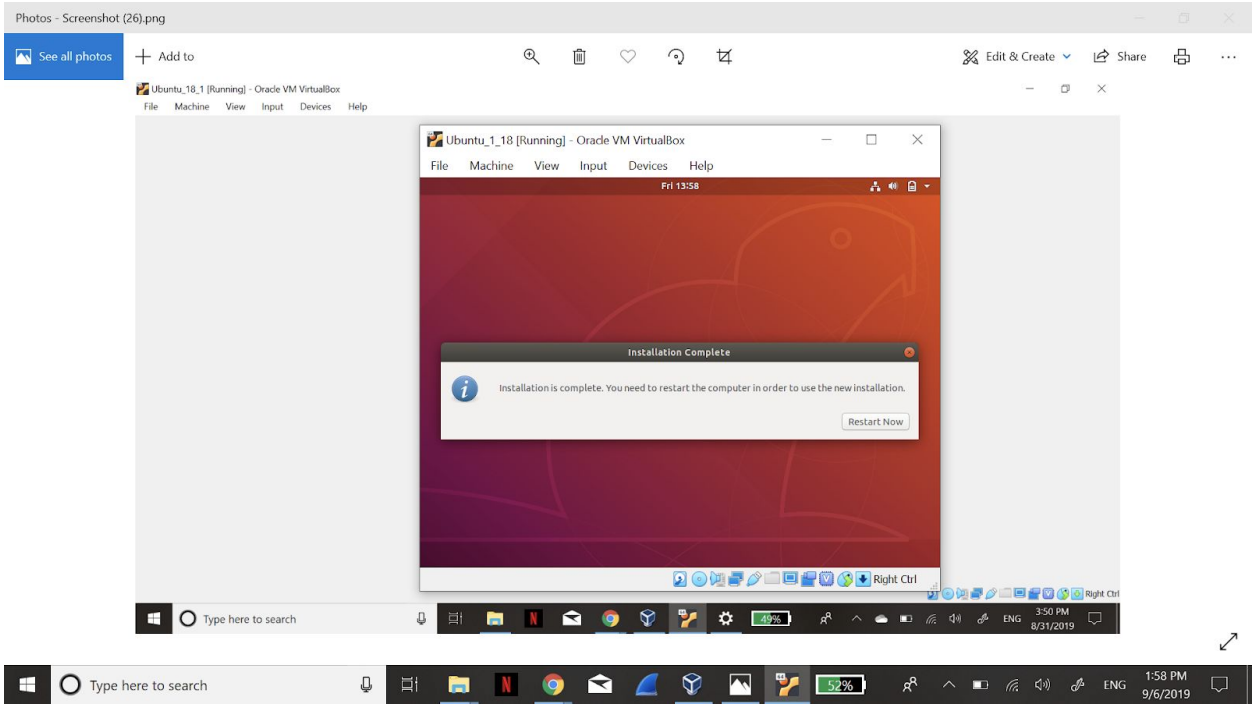



## g. Create a user id and password

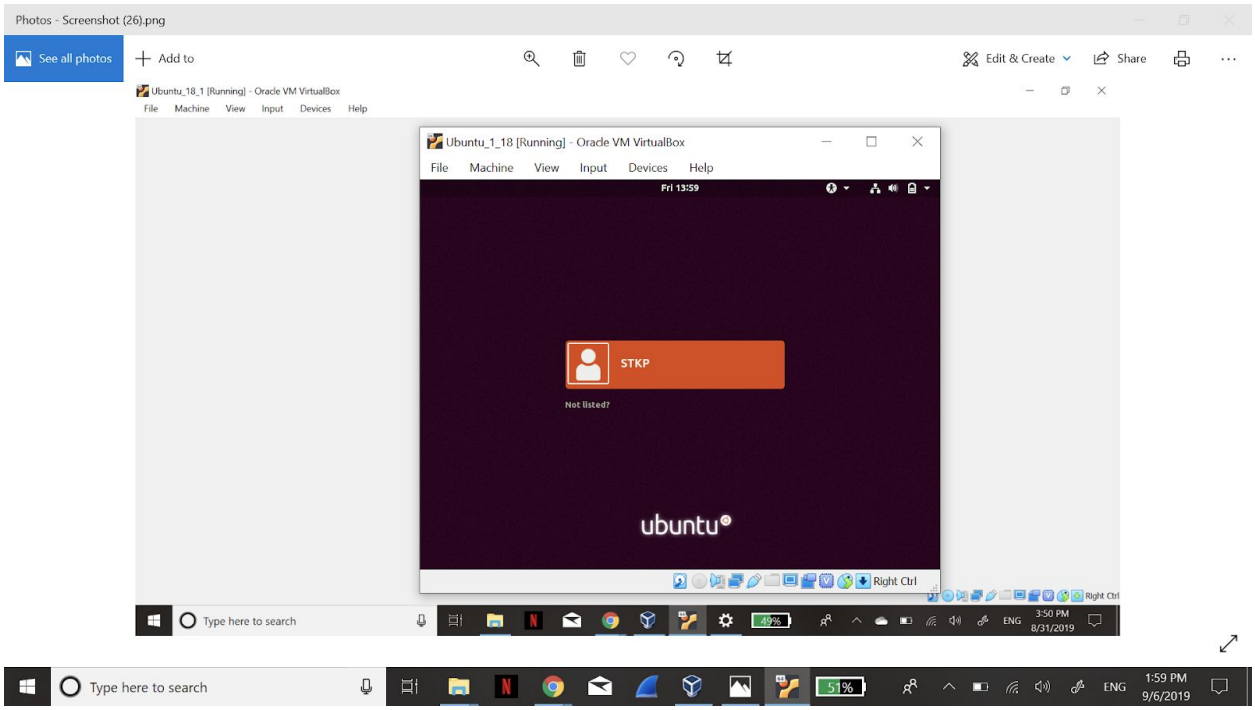
During the installation, OS asks for the user name and password as shown below.



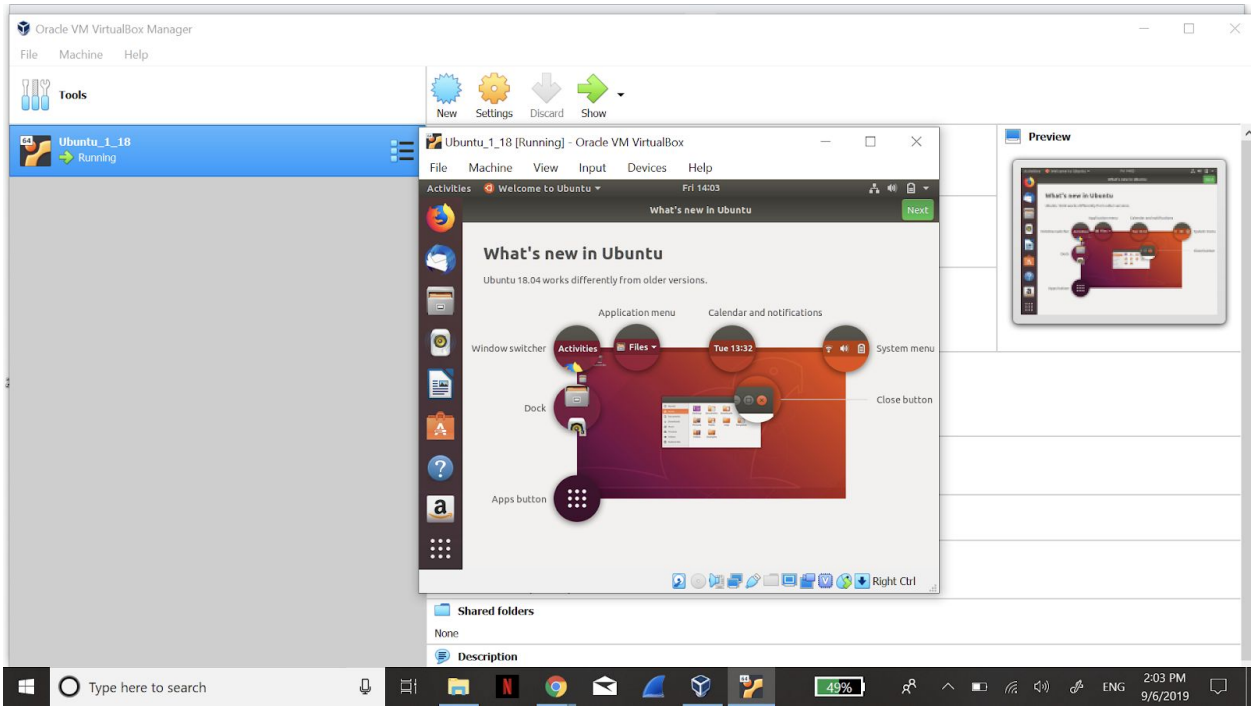

OS asks the user to restart the system to restart to use the new installation. Restart the machine.




After restart, OS provides a login, select the user and use the given password during setup to login.

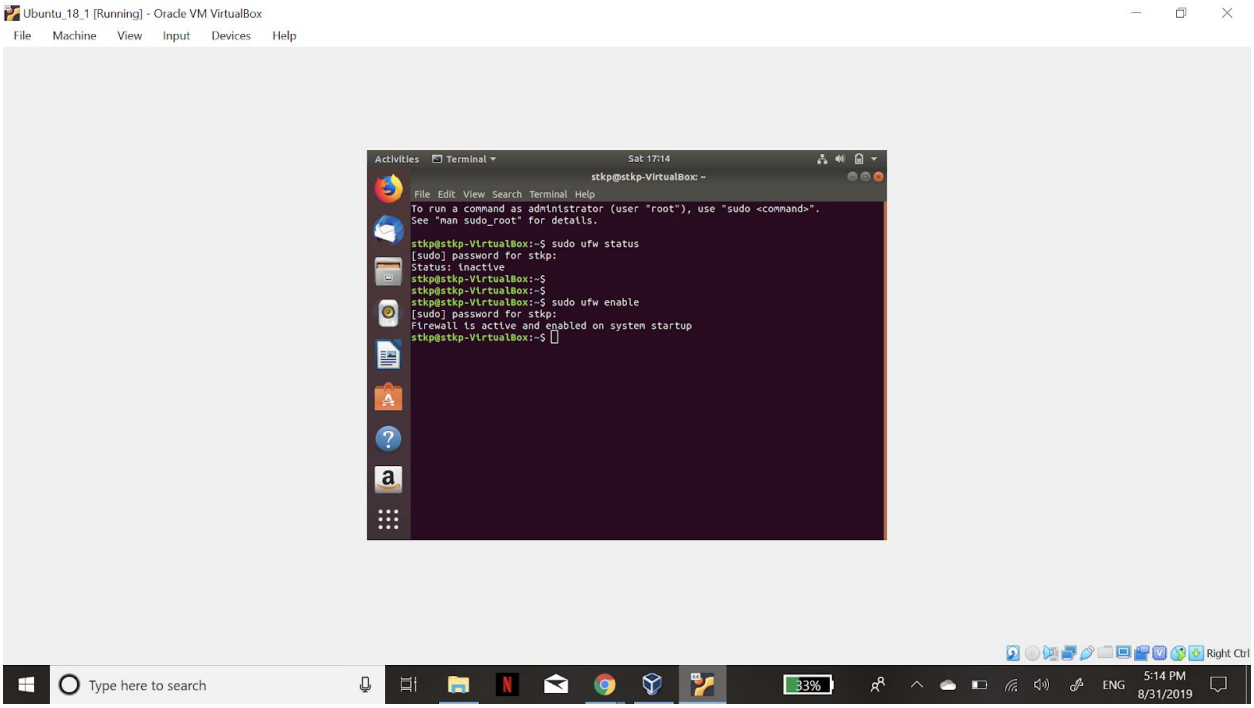


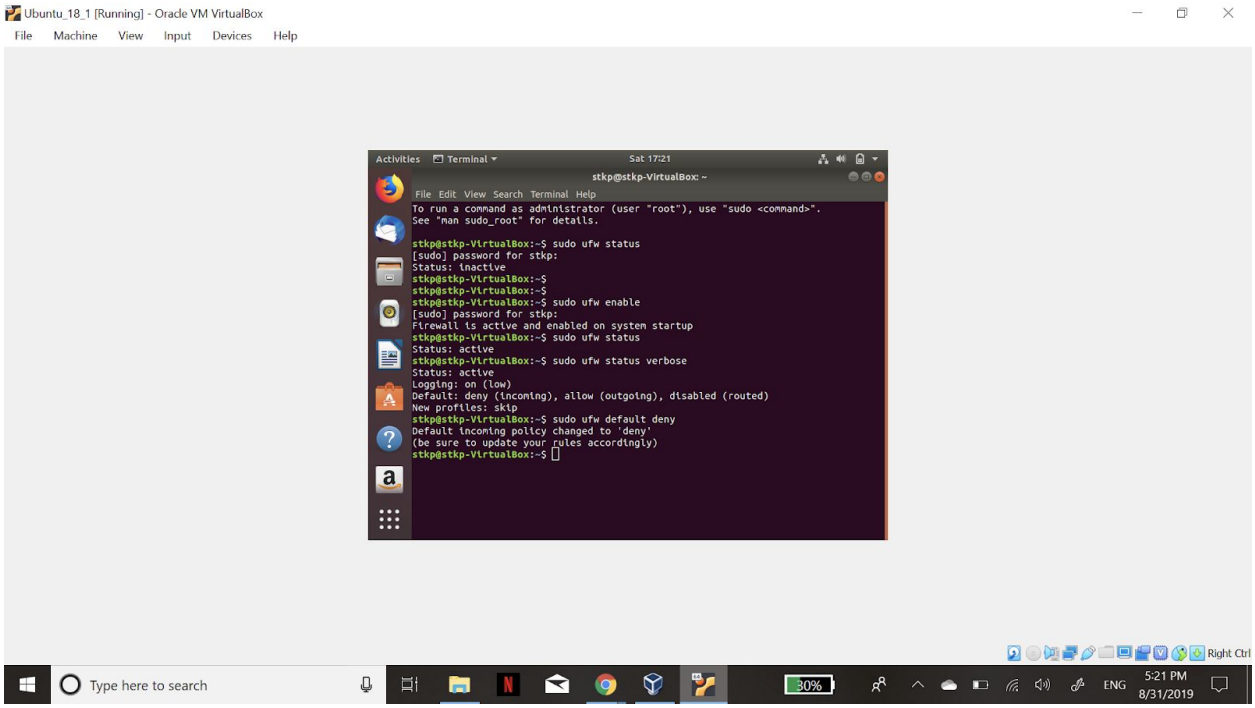

On first login, Ubuntu gives us the tour guide to use it.




## h. Turn on Firewall and block all ports

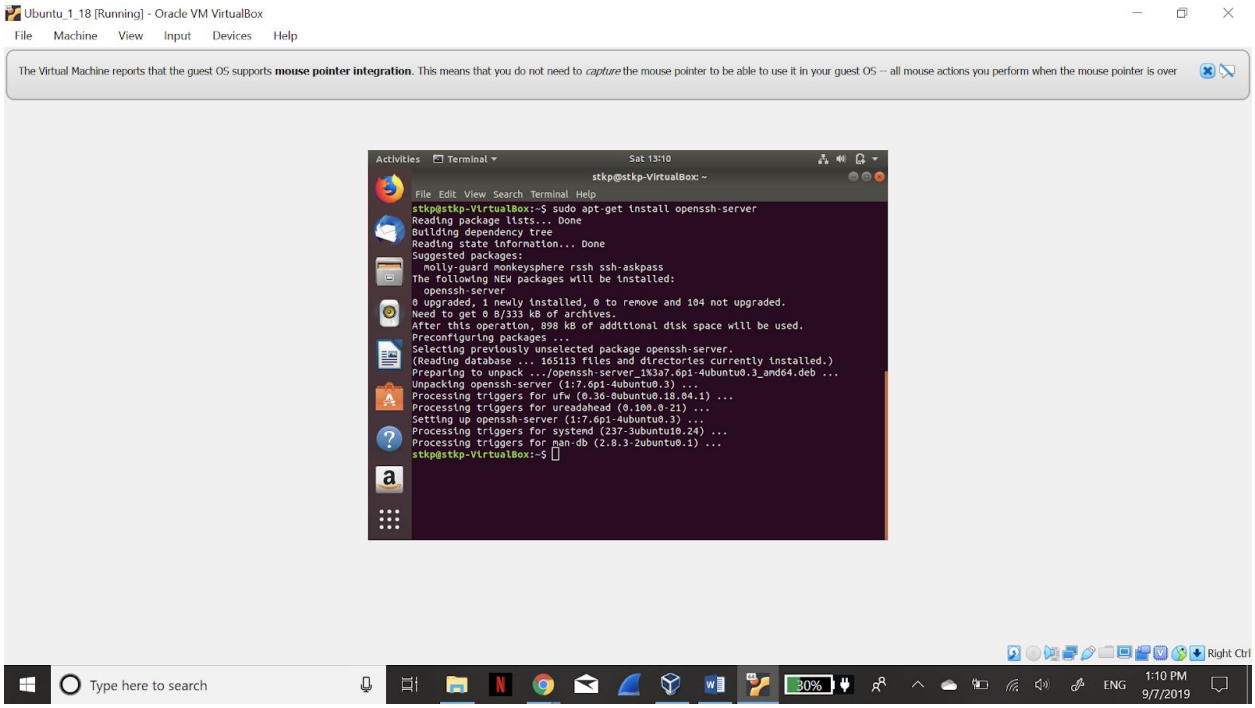
Open the terminal to turn on the Firewall using ufw command and block all ports.



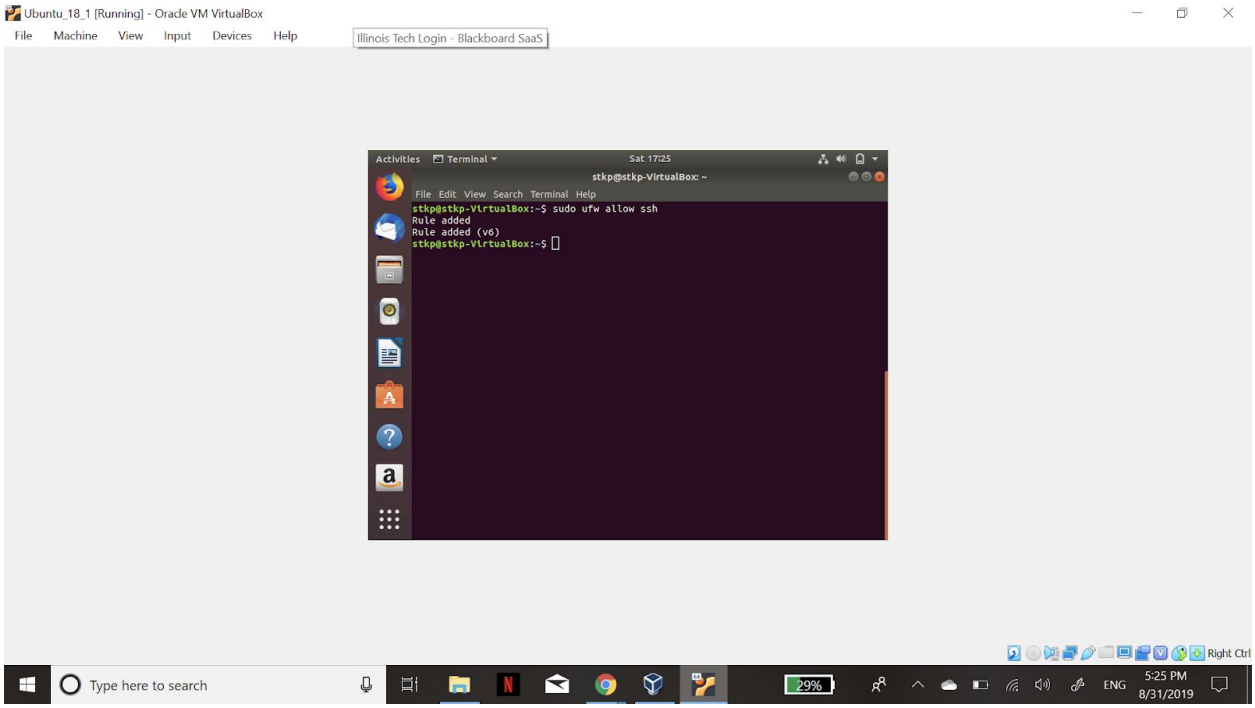



i. **Enable SSH access to your new Linux installation; open SSH port in firewall**

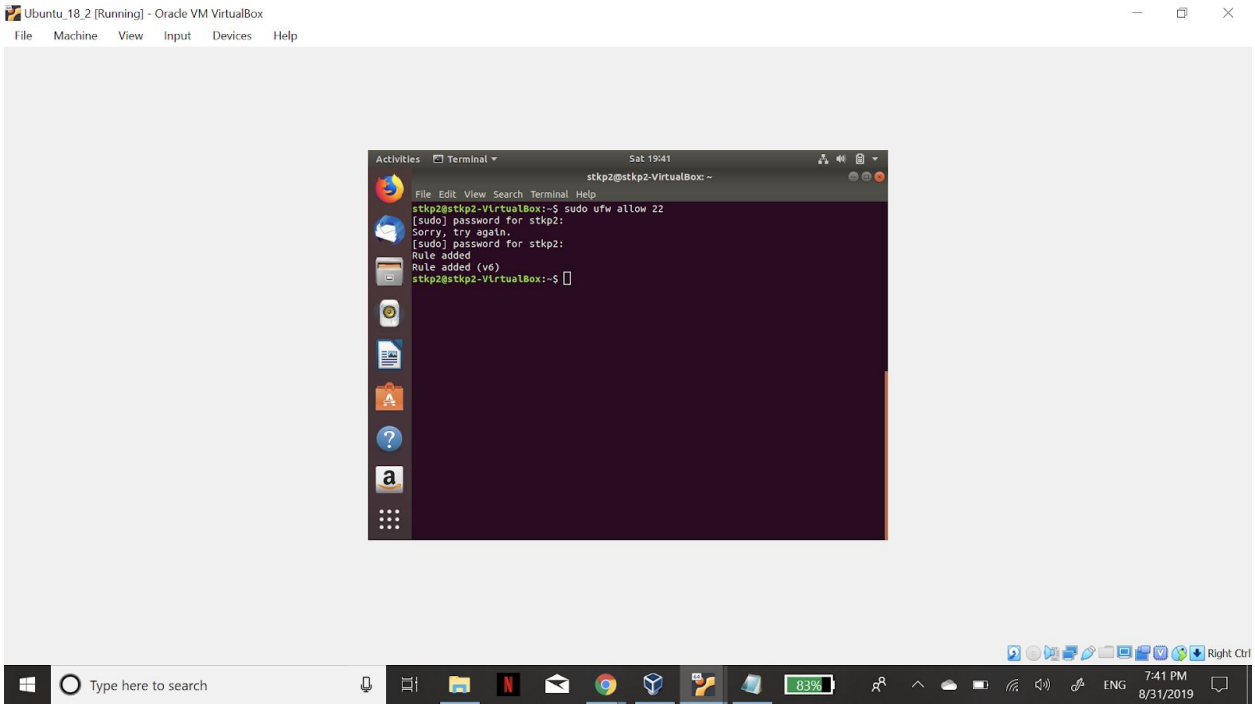
Install openssh-server to enable SSH access using the apt-get install.




Open SSH port using the ufw allow command.

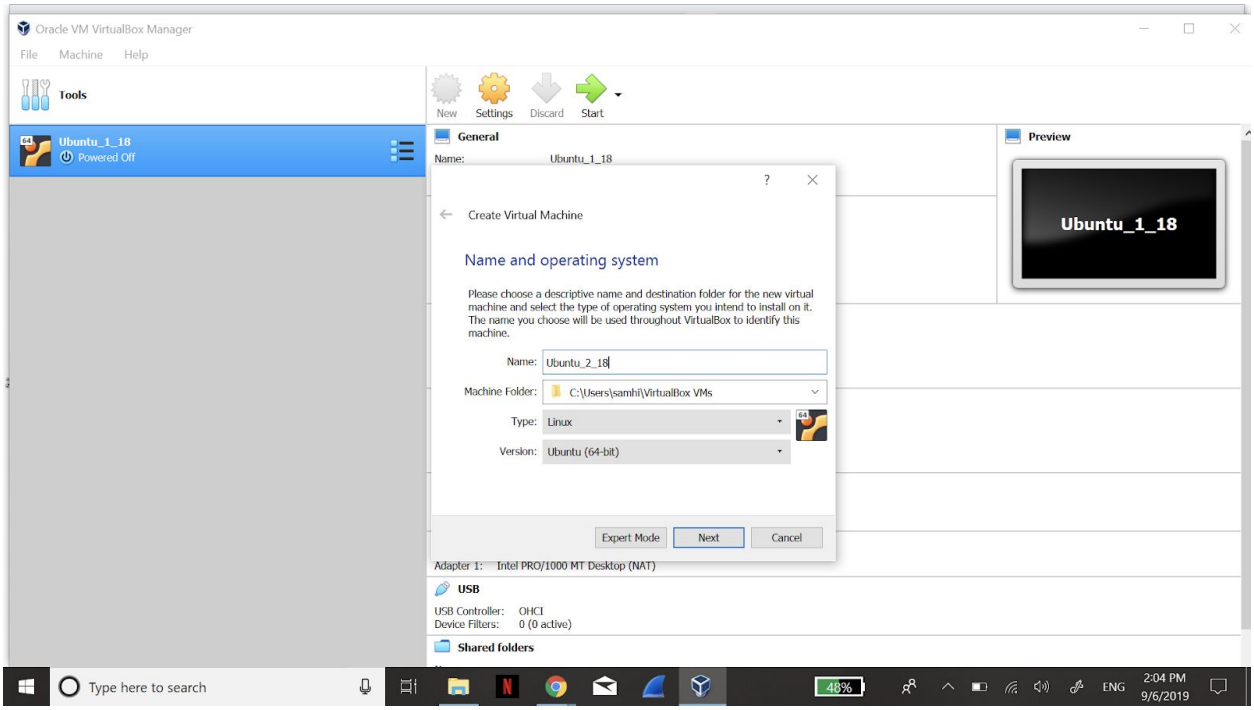


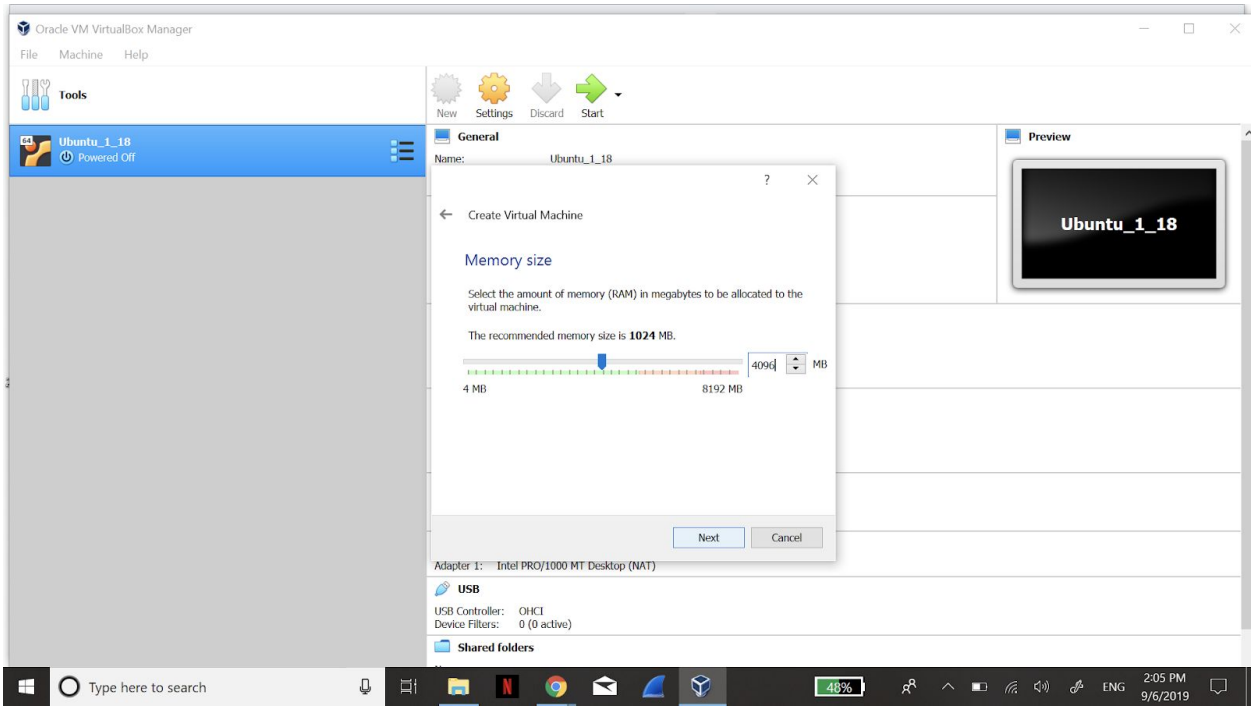

Or we can open the port 22 as shown below.

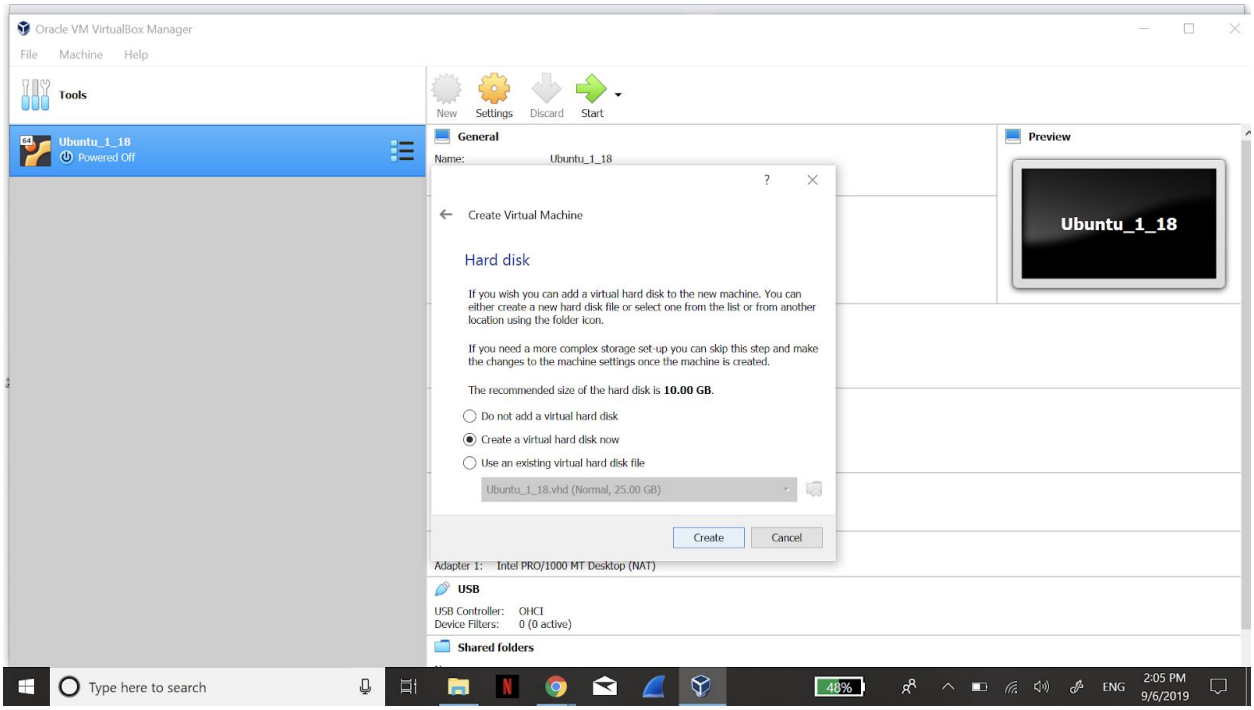


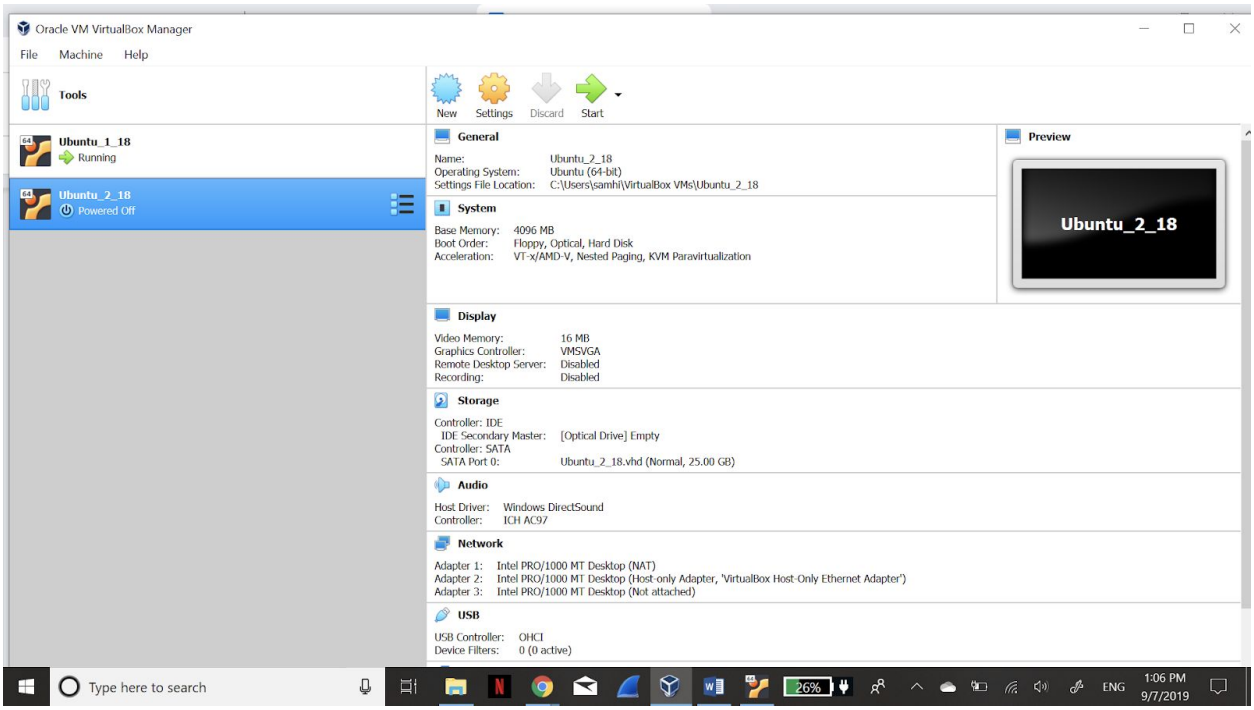

j. **Repeat steps 5 through 9, and create another VM with the same specifications as the first one**

Repeated the same steps and created another virtual machine with Ubuntu, 4 GB RAM, 25 GB Virtual Disk and two core processor.


Oracle VM VirtualBox Manager
File
Machine
Help
Tools
Ubuntu_1_18
Powered Off
New
Settings
Discard
Start
General
Name: Ubuntu_1_18
Preview
Ubuntu_1_18
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: Ubuntu_2_18
Machine Folder: C:\Users\samhi\VirtualBox VMs
Type: Linux
Version: Ubuntu (64-bit)
Expert Mode
Next
Cancel
Adapter 1: Intel PRO/1000 MT Desktop (NAT)
USB
USB Controller: OHCI
Device Filters: 0 (0 active)
Shared folders
Type here to search
48%
ENG
2:04 PM
9/6/2019

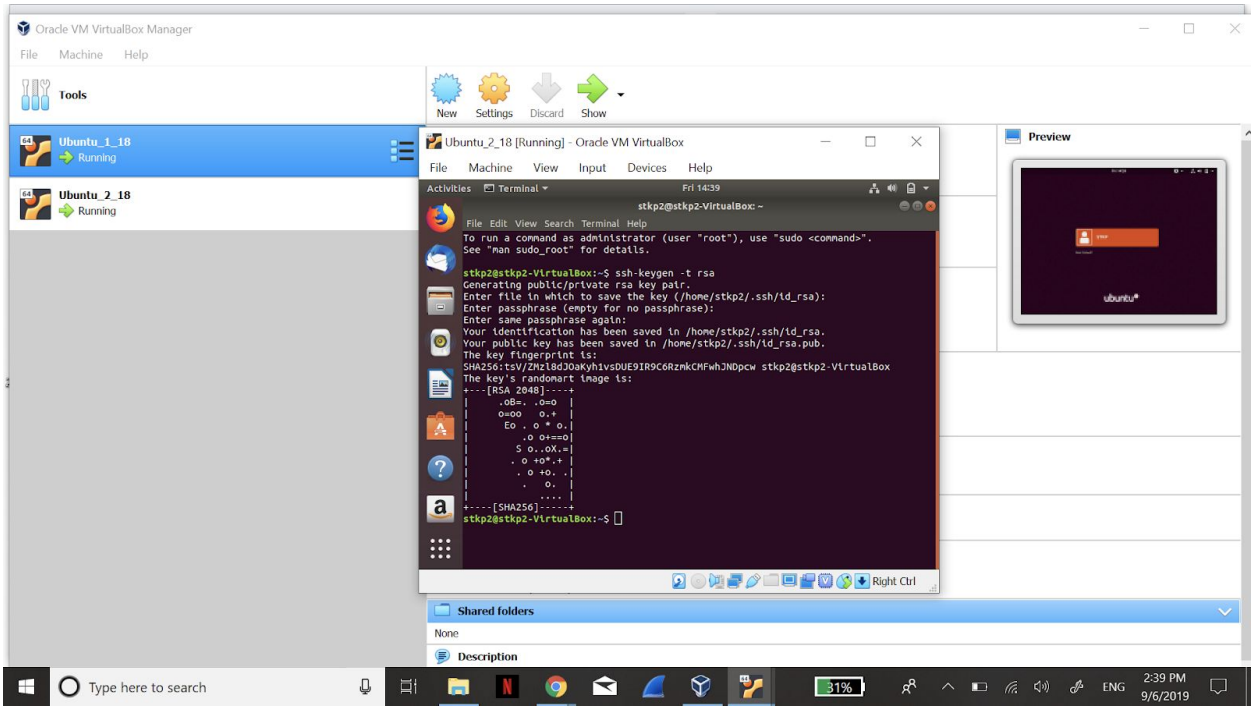

Oracle VM VirtualBox Manager
File
Machine
Help
Tools
Ubuntu_1_18
Powered Off
New
Settings
Discard
Start
General
Name: Ubuntu_1_18
Preview
Ubuntu_1_18
Create Virtual Machine
Memory size
Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.
The recommended memory size is 1024 MB.
4096
MB
4 MB
8192 MB
Next
Cancel
Adapter 1: Intel PRO/1000 MT Desktop (NAT)
USB
USB Controller: OHCI
Device Filters: 0 (0 active)
Shared folders
Type here to search
48%
ENG
2:05 PM
9/6/2019



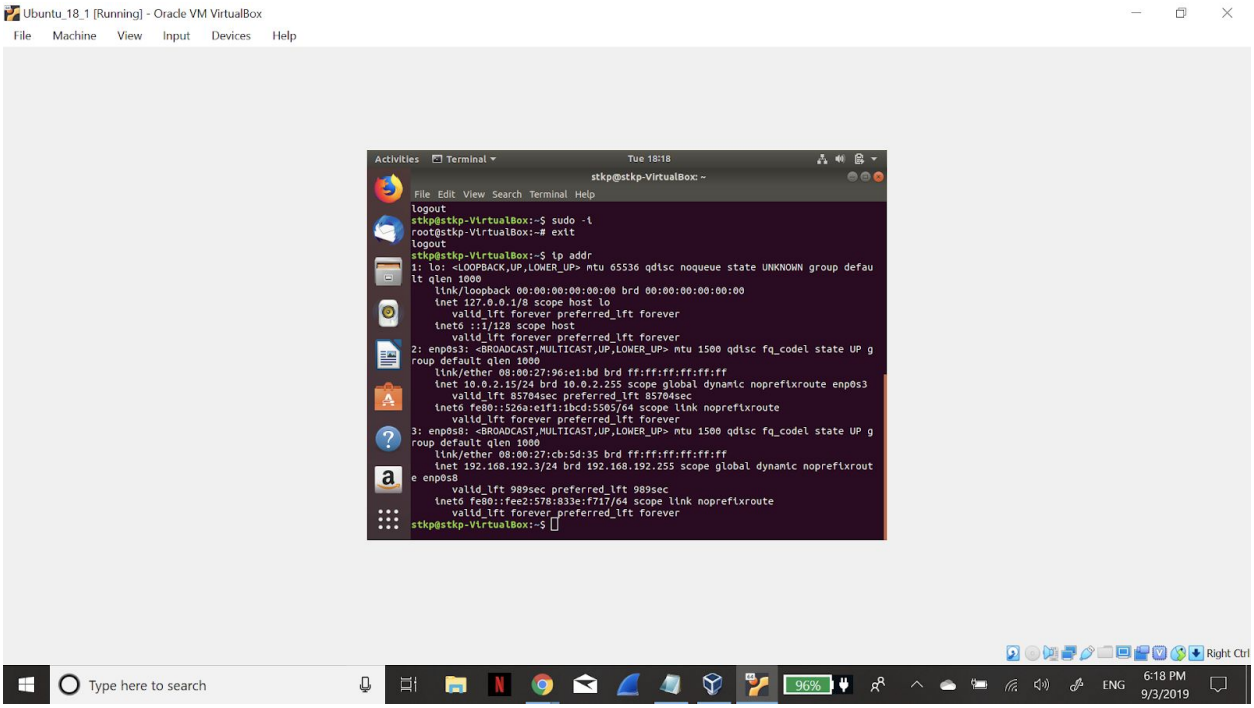

**k. Create private/public keys and install them properly in both of your new VMs.**

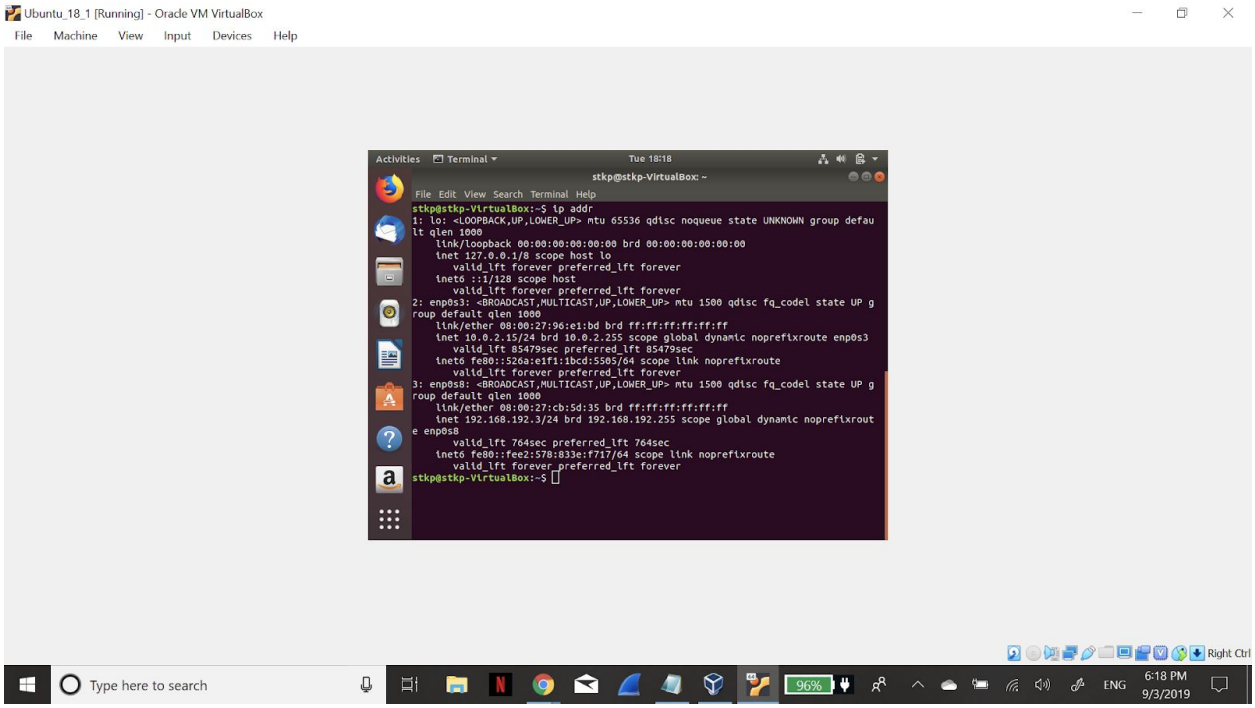
We use “ssh-keygen” command to create public and private keys as shown below.



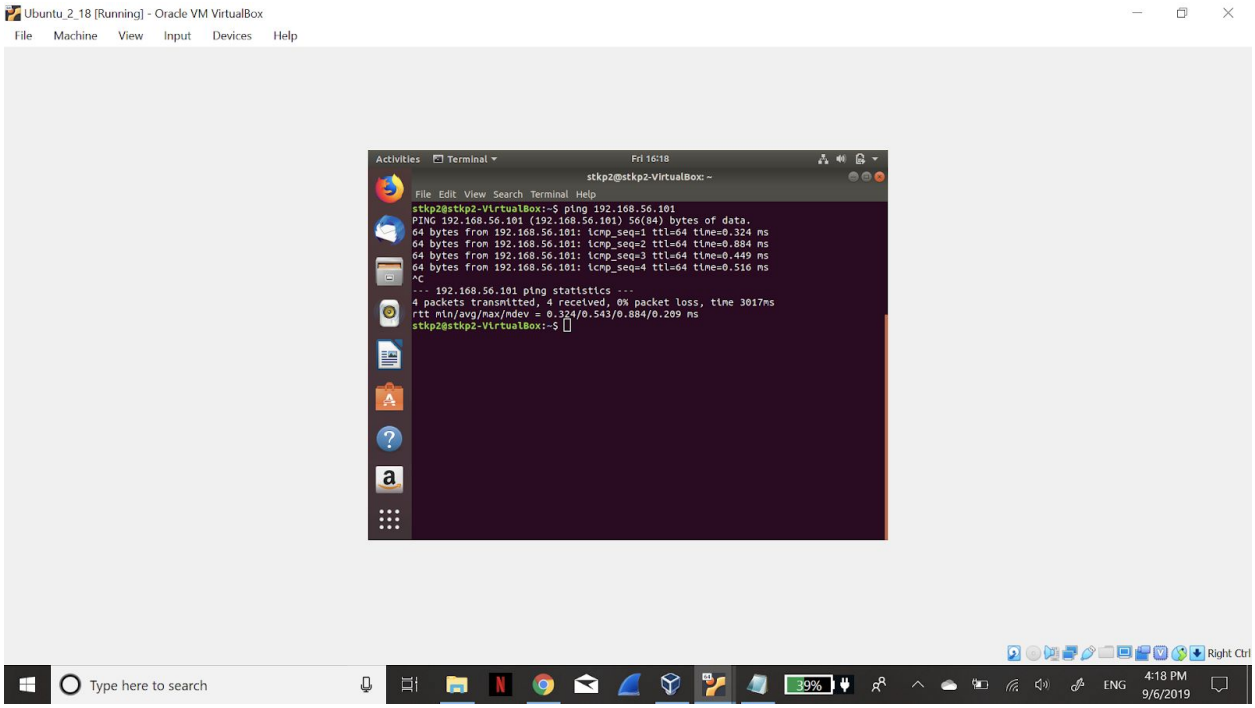

## I. Test that you can connect remotely to your VMs with your keys, from one VM to the other VM

Use the “ip addr” command to get IP addresses of the machine.

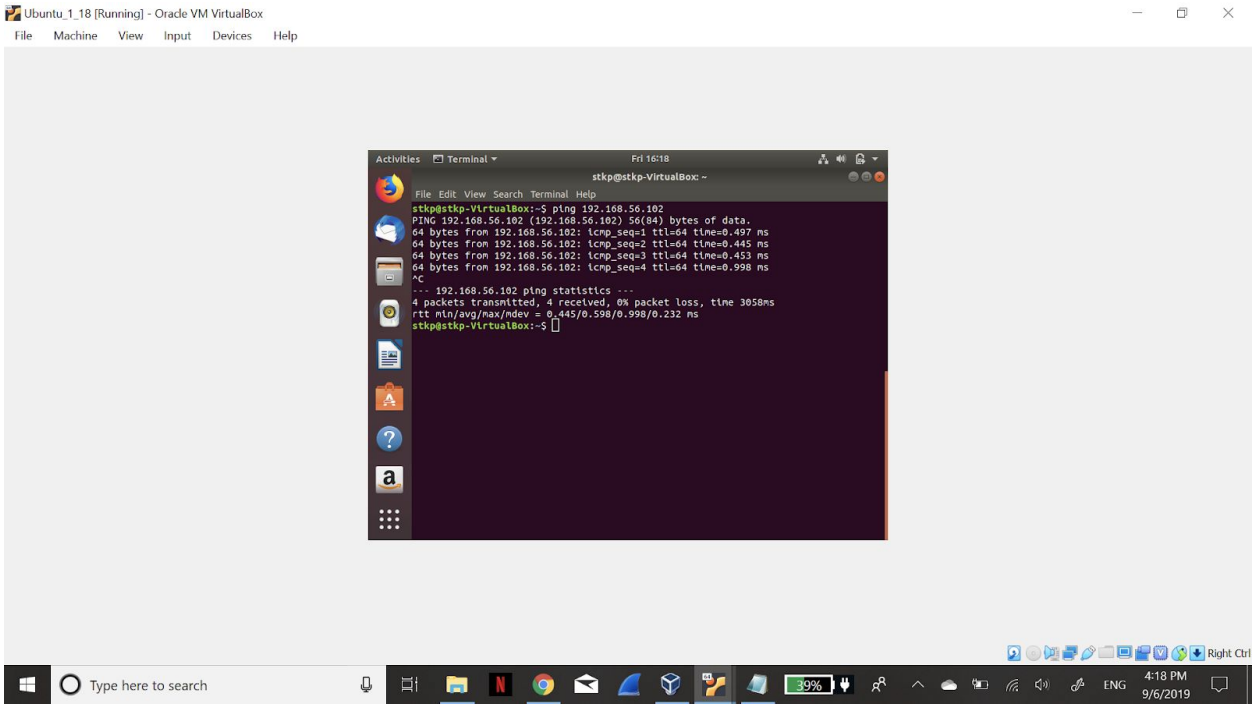




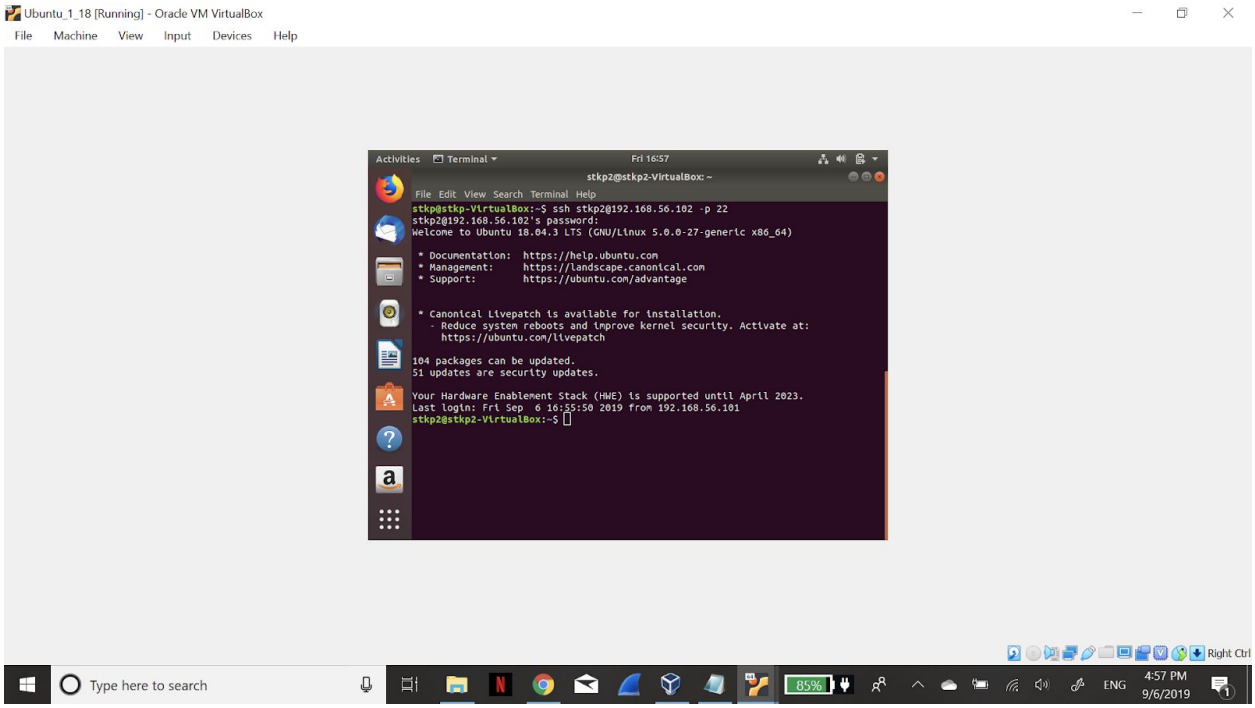

Use “ping” command to test the connection from both the machines.



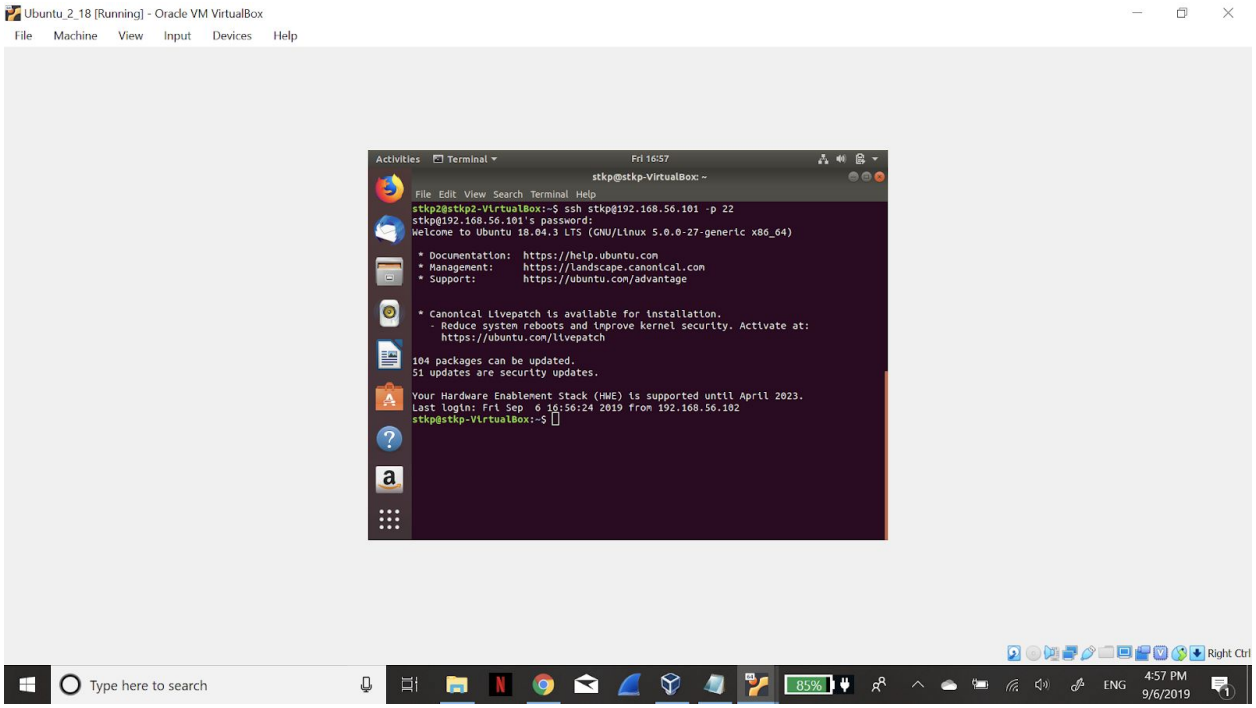

Ubuntu2_VM:




Initially, we connected to another machine using username and password as shown below. Connecting to Ubuntu2_VM(user name: skkp2, IP: 192.168.56.102) from Ubuntu1_VM

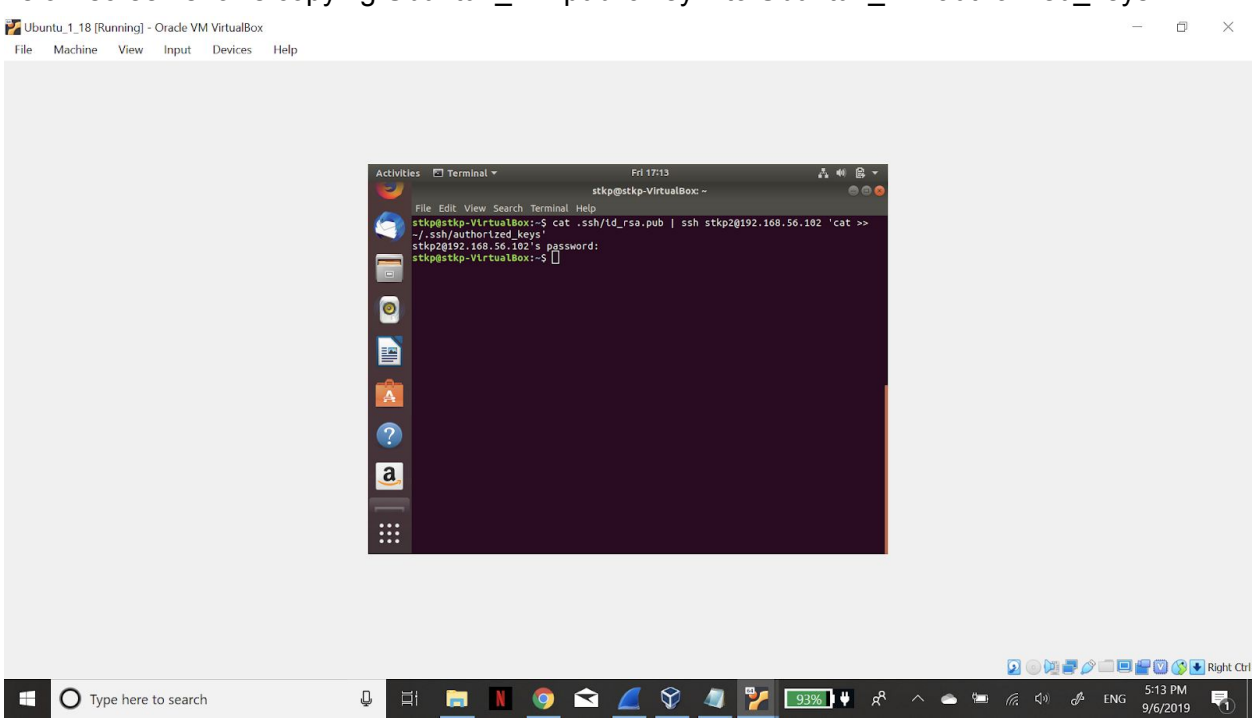


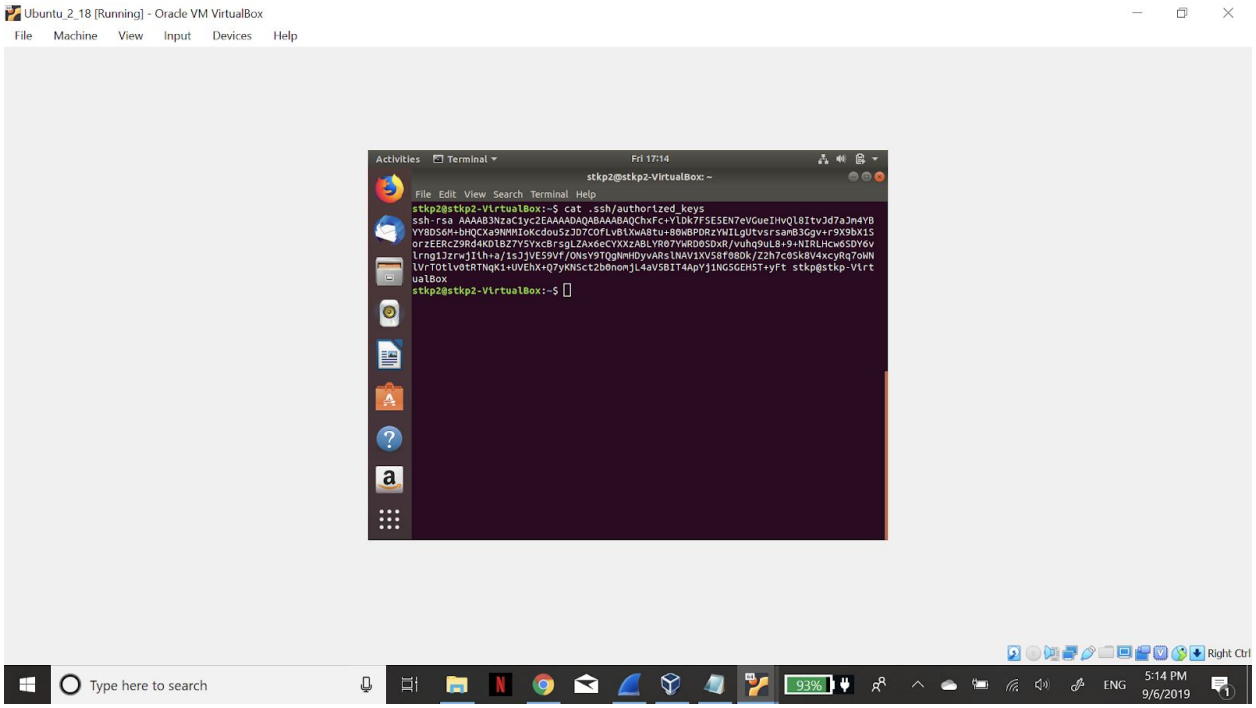

In the same procedure, connecting to Ubuntu1_VM(user name: skkp, IP: 192.168.56.101) from Ubuntu1_VM



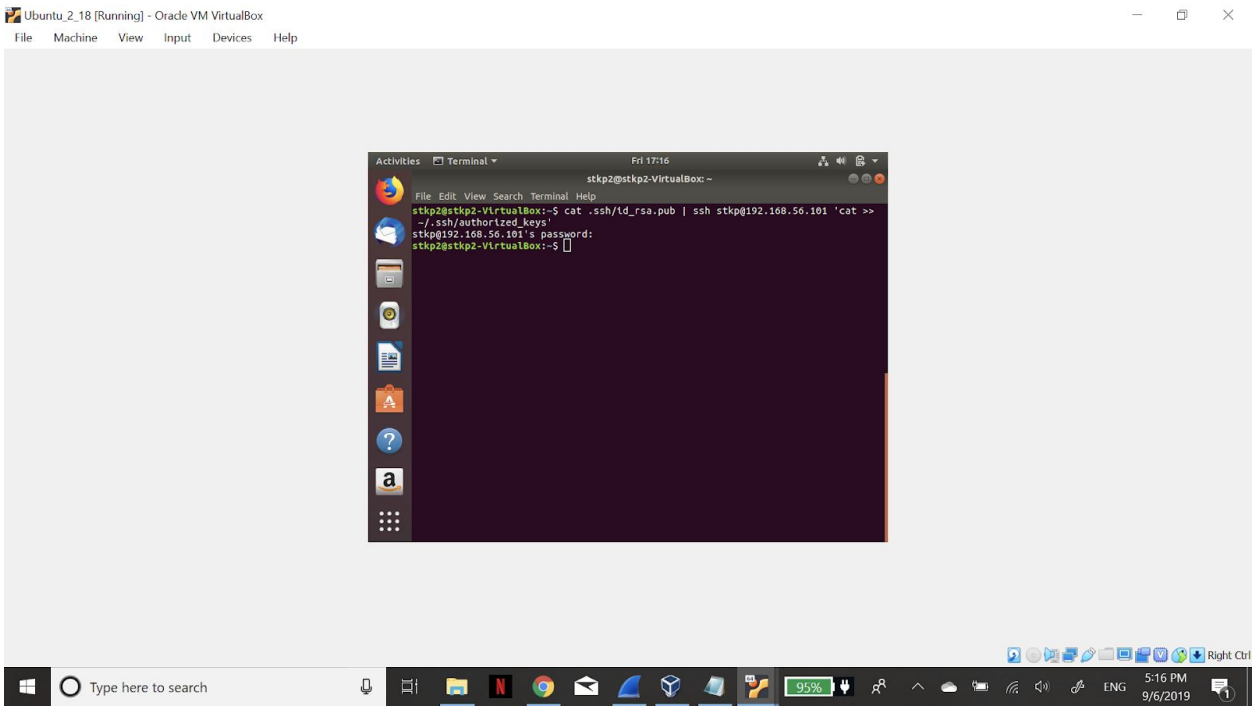

Concatenated public key of one machine to another machine authorized keys using the ssh, cat and login credentials as shown below.

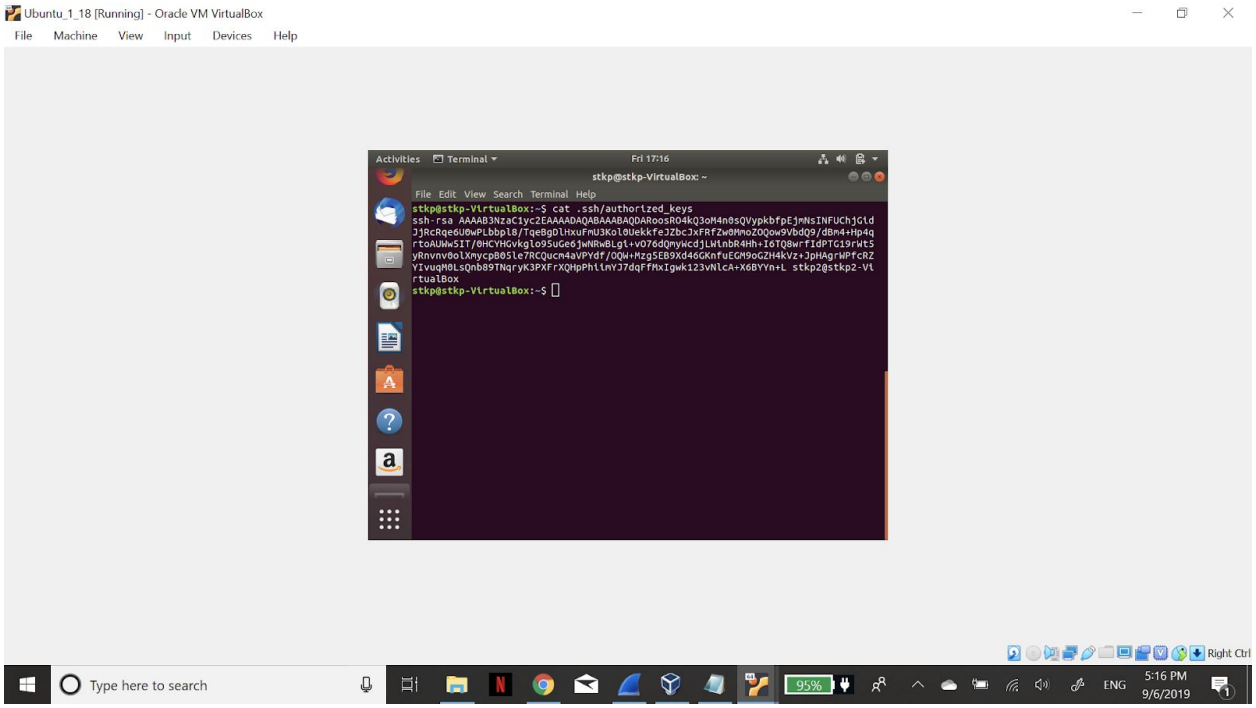
Below screen shows copying Ubuntu1_VM public key into Ubuntu2_VM authorized_keys.



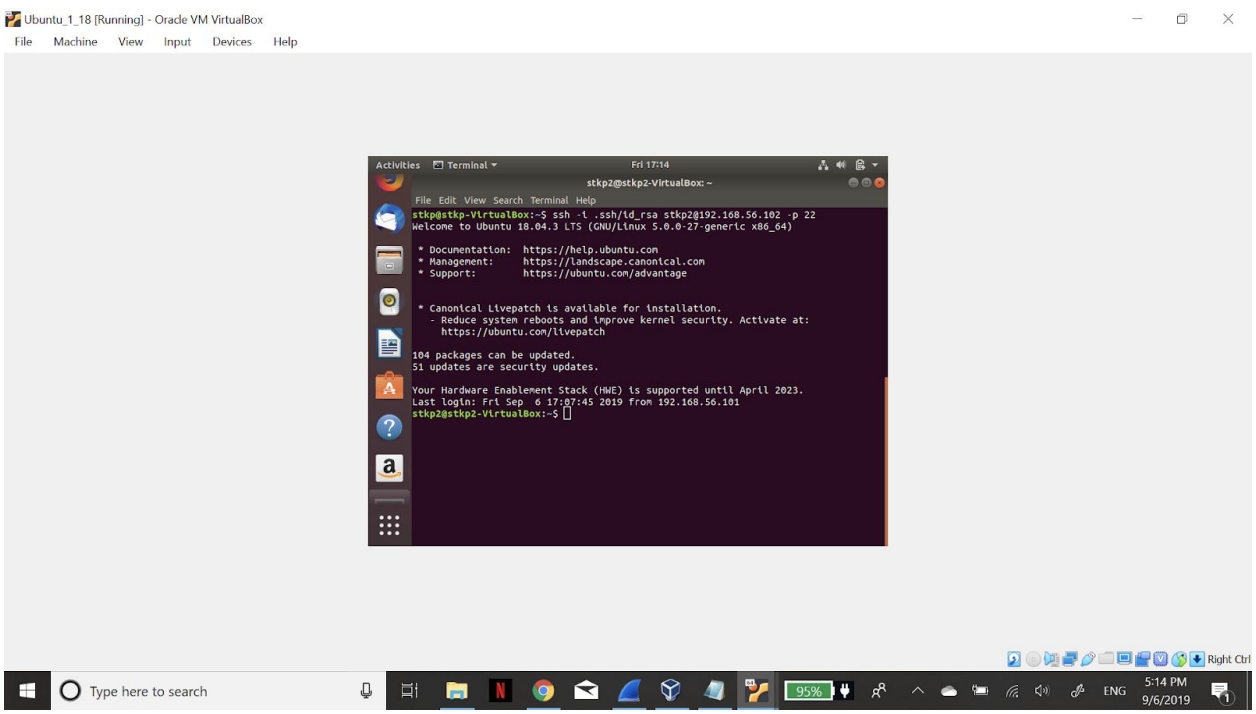



In the same procedure, below screen shows copying Ubuntu2_VM public key into Ubuntu1_VM authorized_keys.

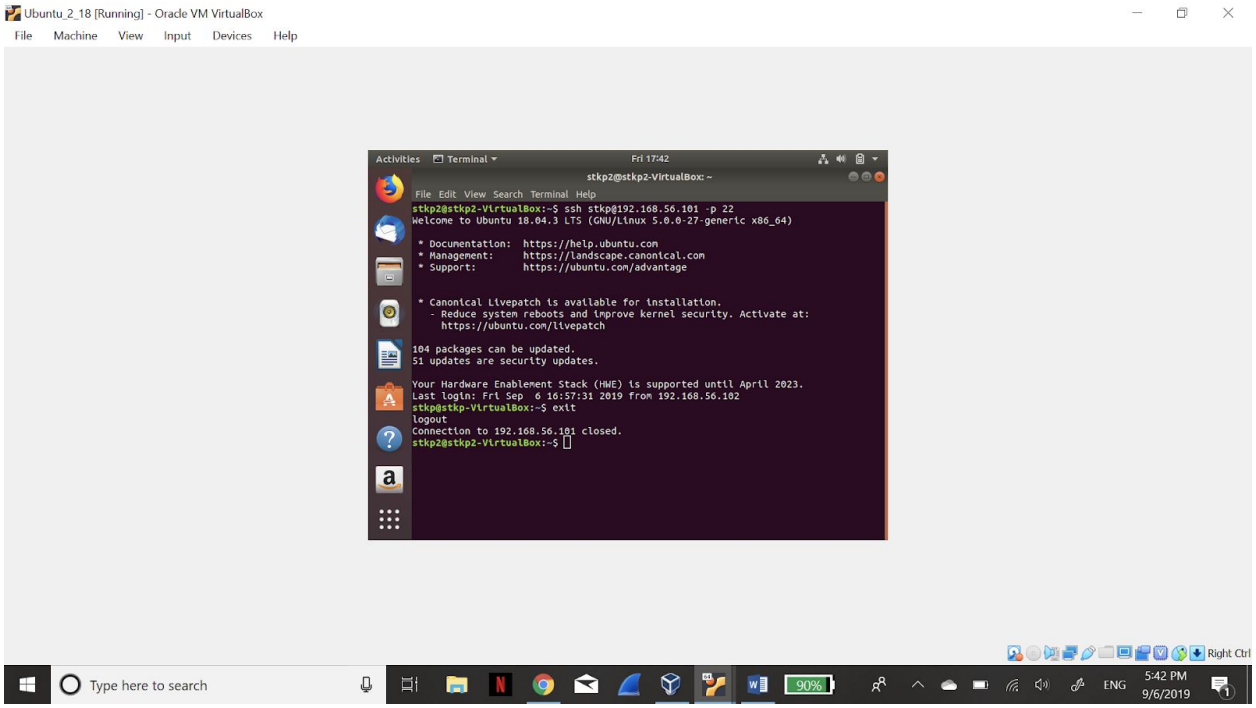





Now we connect one machine to another without login credentials.
Connecting to Ubuntu2_VM from Ubuntu1_VM:




Connecting to Ubuntu1_VM from Ubuntu2_VM:


Ubuntu_2_18 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Fri 17:42
stkp2@stkp2-VirtualBox: ~
File Edit View Search Terminal Help
stkp2@stkp2-VirtualBox:~$ ssh stkp@192.168.56.101 -p 22
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 5.0.0-27-generic x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/advantage
* Canonical Livepatch is available for installation.
- Reduce system reboots and improve kernel security. Activate at:
https://ubuntu.com/livepatch
104 packages can be updated.
51 updates are security updates.
Your Hardware Enablement Stack (HWE) is supported until April 2023.
Last login: Fri Sep 6 16:57:31 2019 from 192.168.56.102
stkp@stkp-VirtualBox:~$ exit
logout
Connection to 192.168.56.101 closed.
stkp2@stkp2-VirtualBox:~$
Right Ctrl
Type here to search
90%
ENG
5:42 PM
9/6/2019