

LOYALIST COLLEGE IN TORONTO

In-Class Assignment-1

Course Code: CLOD1003

Shikhar Gupta (500236676)

Instructor Name: Maziar Sojoudian

Meghav Shah (500237810)

Seruban Peter Shan (500235797)

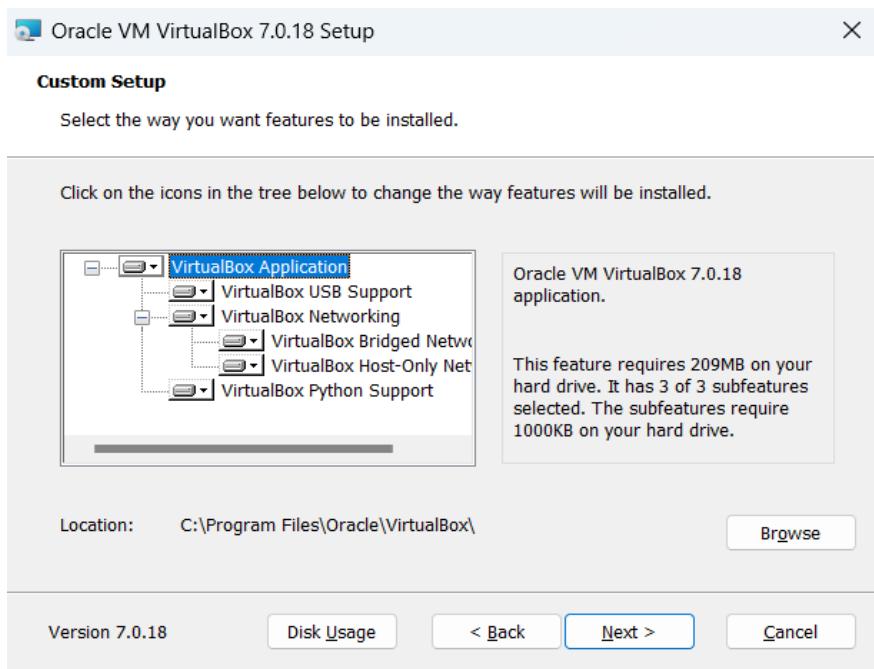
Maedeh Abedrashidi (500236066)

➤ **Installing VirtualBox:** (**Meghav Shah – 500237810, Shikhar Gupta – 500236676**)

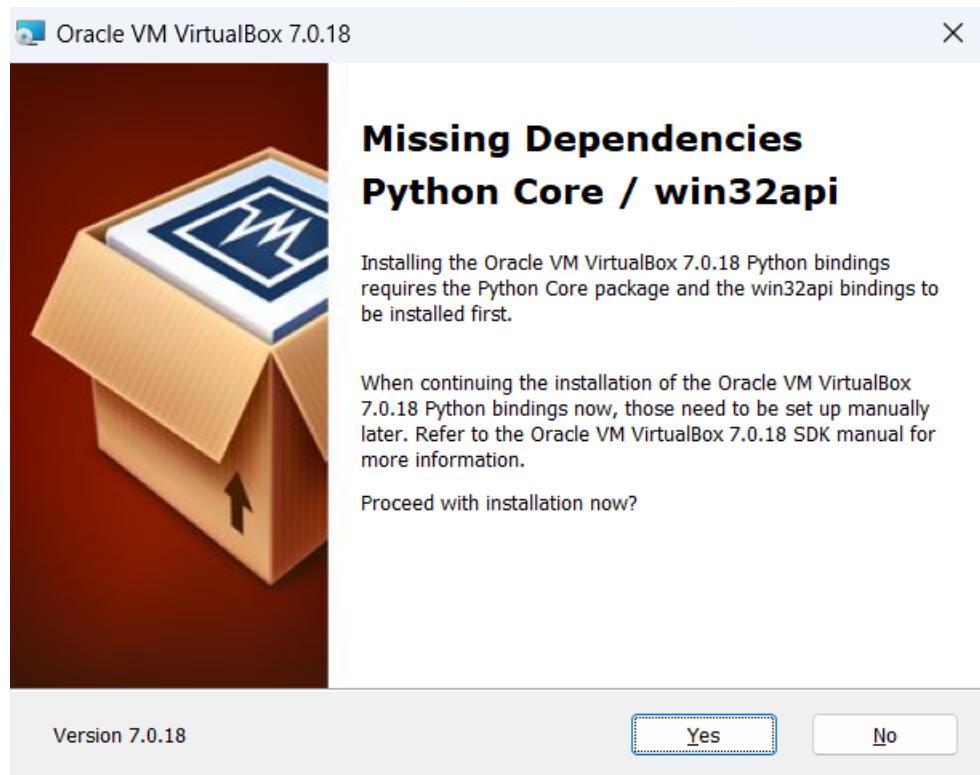
- This is the very first step after saving the setup in a convenient location on your local storage to download virtual box on windows operating system.
- Now Click next to initiate the further setup.



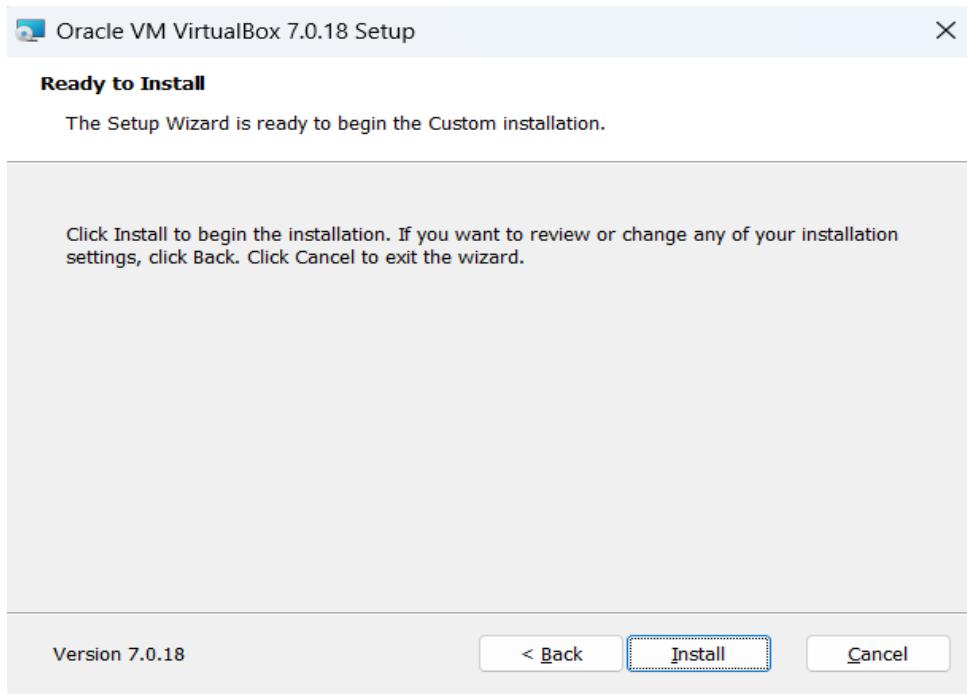
- Here we can select whatever the features we want to be installed and click next for further step.



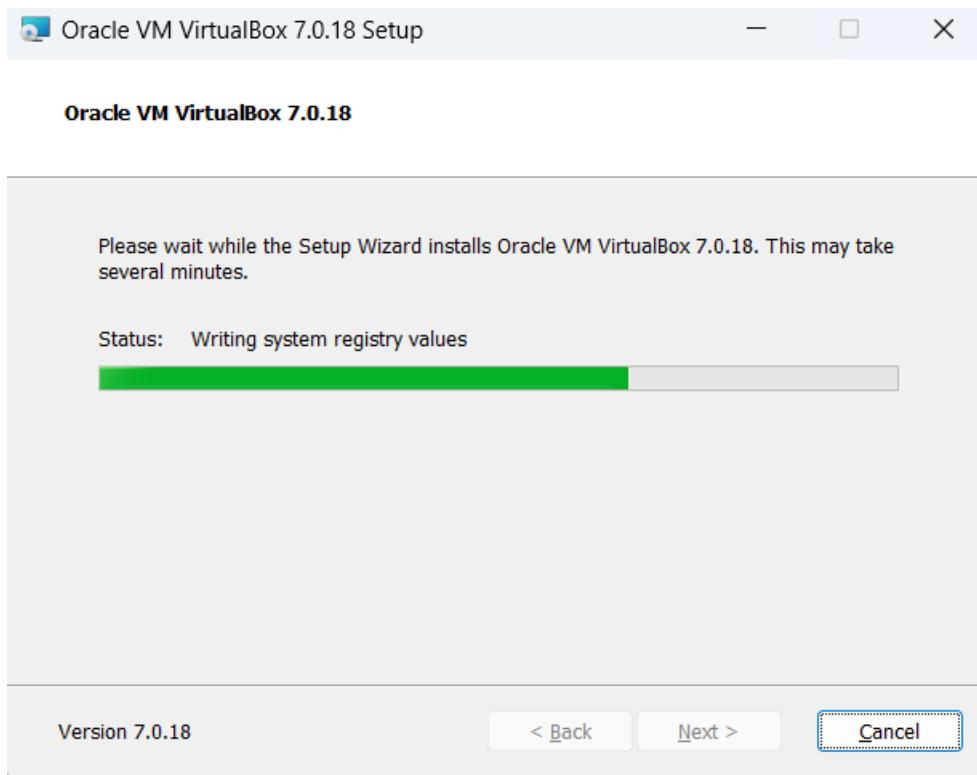
- Now click yes for the next step of installing.



- Here oracle VM Virtual box is ready to install.
- Hit on the install button for further process.

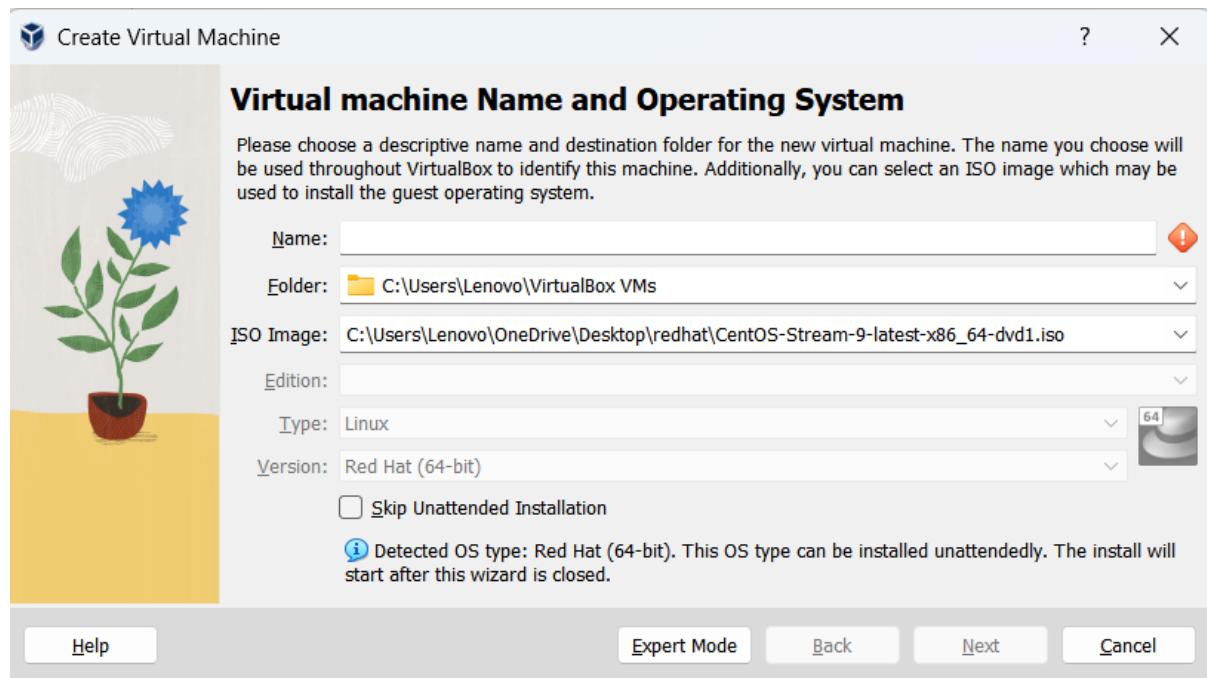


- Finally, here in this step our vm VirtualBox is being installed.

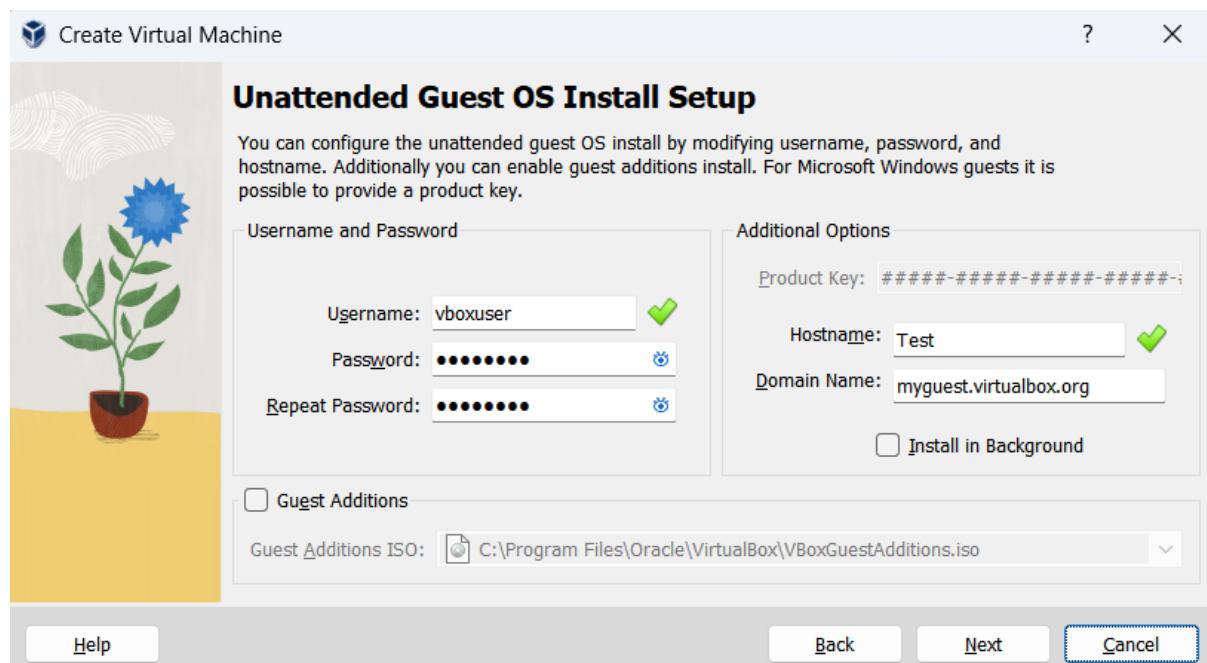


2. Creating new Virtual Machine:

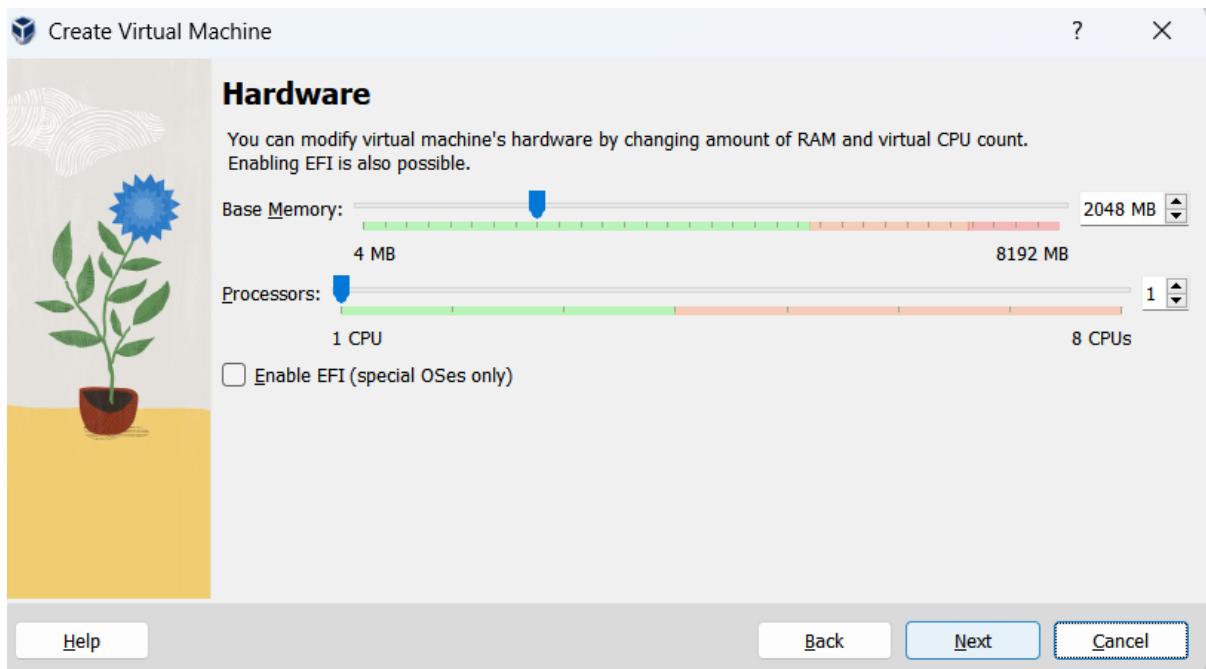
- Click on the new and add the name of the machine.
- Choose a location where your virtual machine will be created.



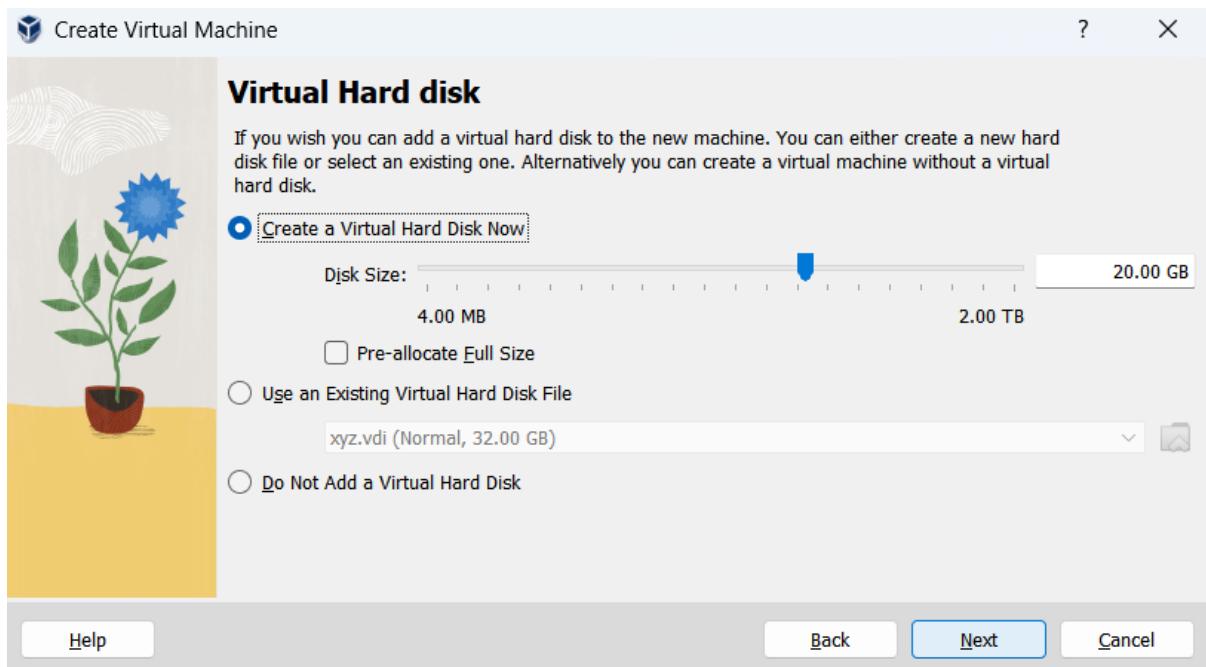
- In this step we need to set up the password for guest os installing setup. After that click on the next step.



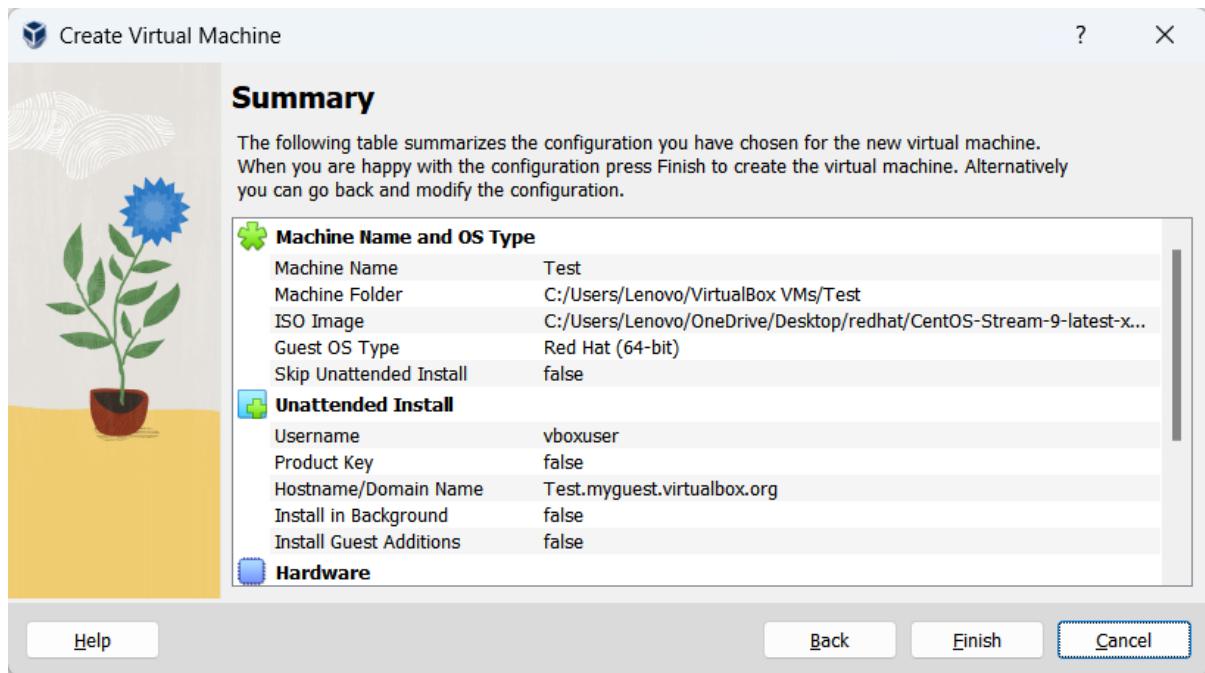
- In this step we can modify the VM hardware by changing the memory, and cpu.
 - Click next to move further.



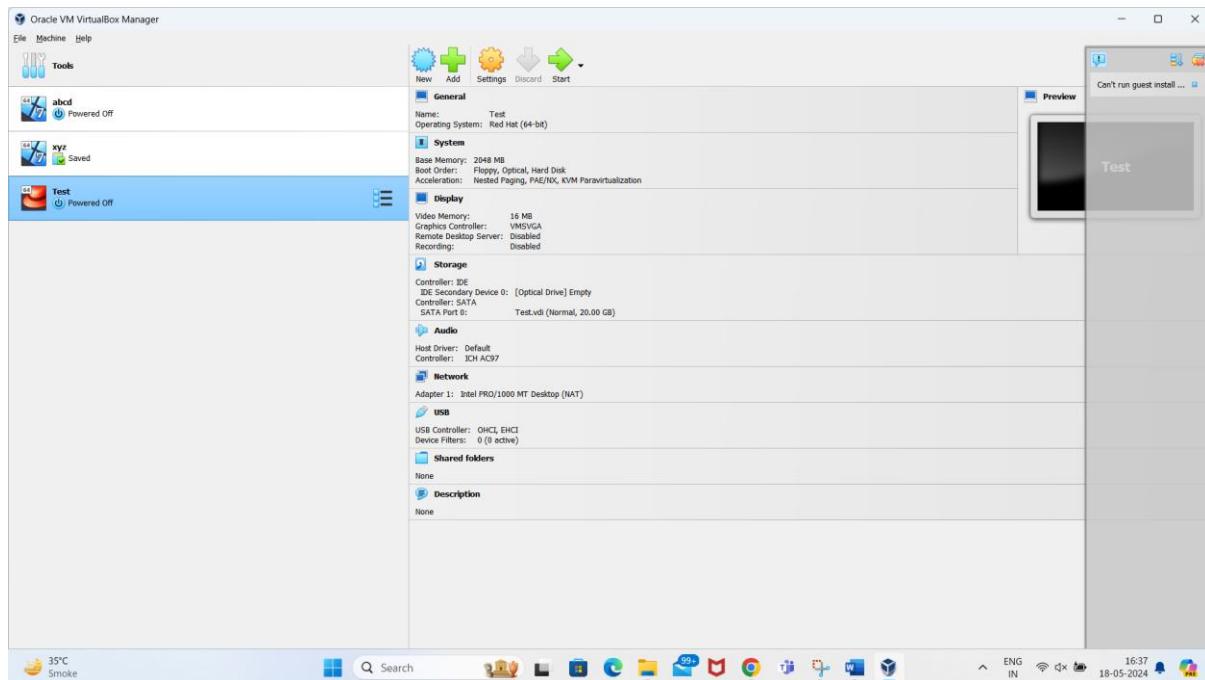
- In step 4 we can add virtual hard disk or we can also create within the VM.
- Click next to move further.



- Click on the finish to create the virtual machine.

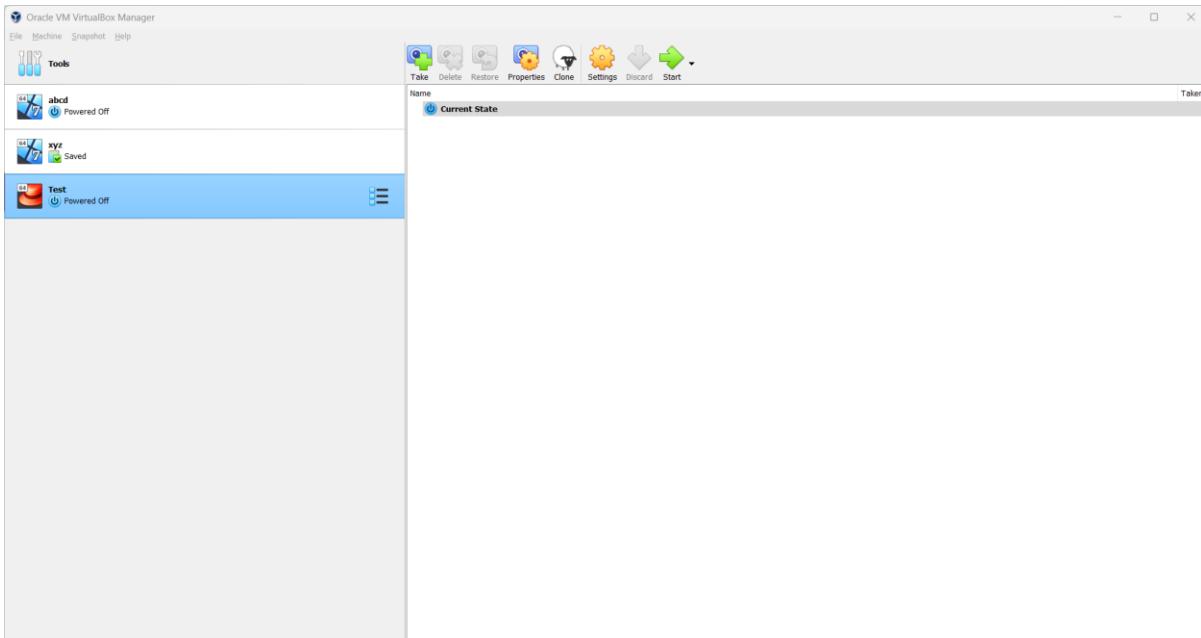


- Here we can find that our VM is created which named as Test.

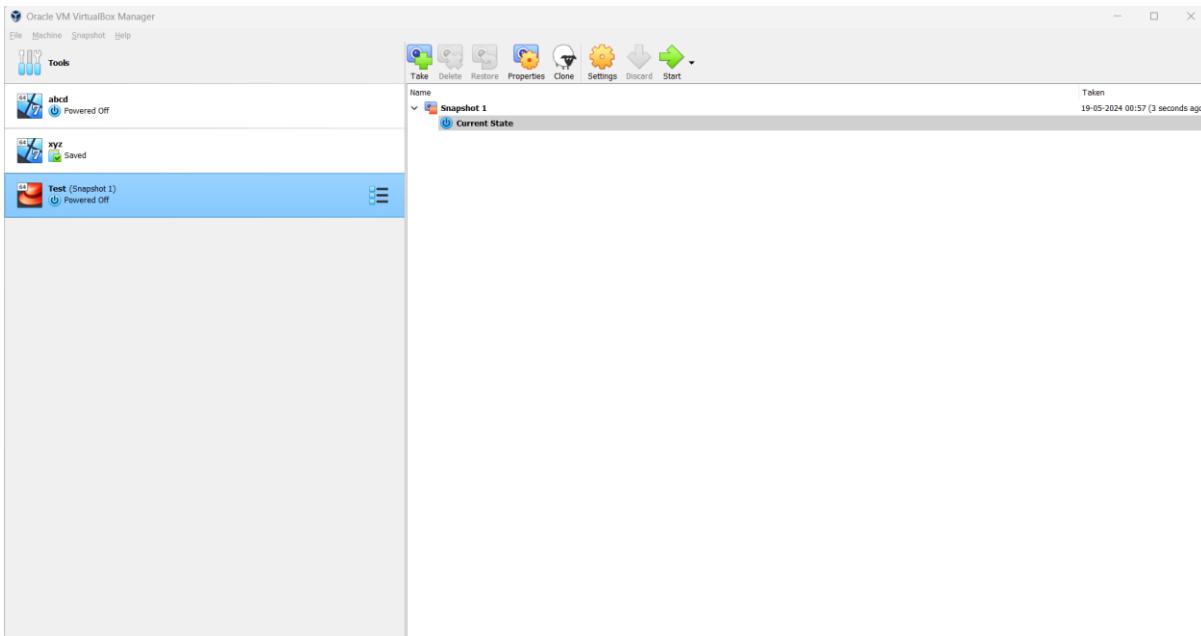


Snapshot Virtual machine: -

- Firstly select the required virtual machine and power it off before taking the snapshot.

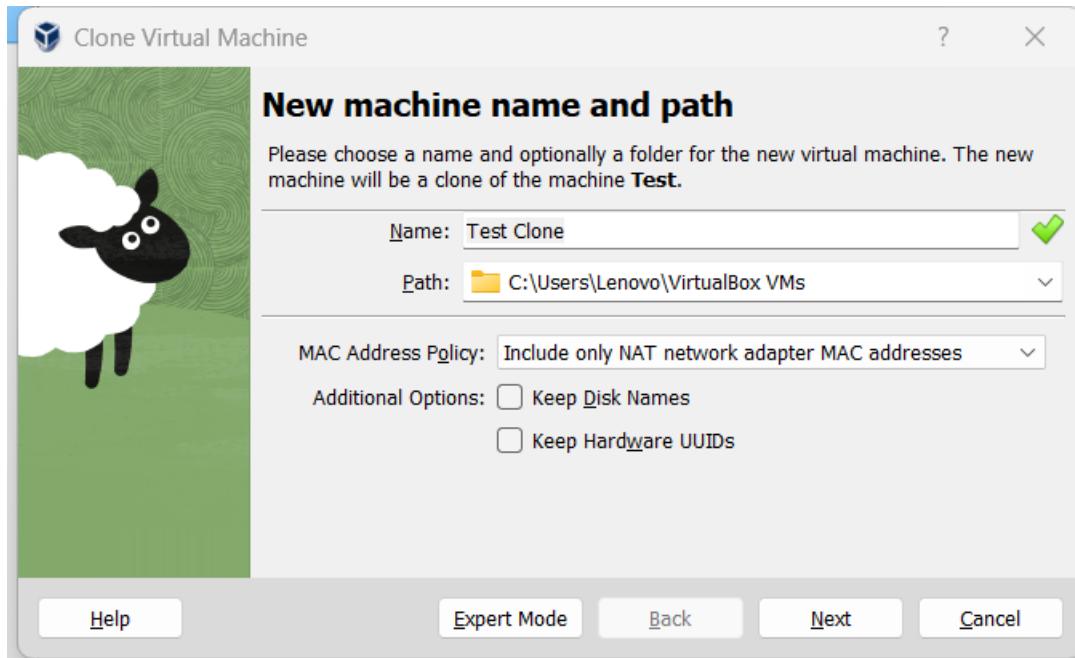


- Now select the VM and click on the snapshot option from the menu, then take the snapshot.

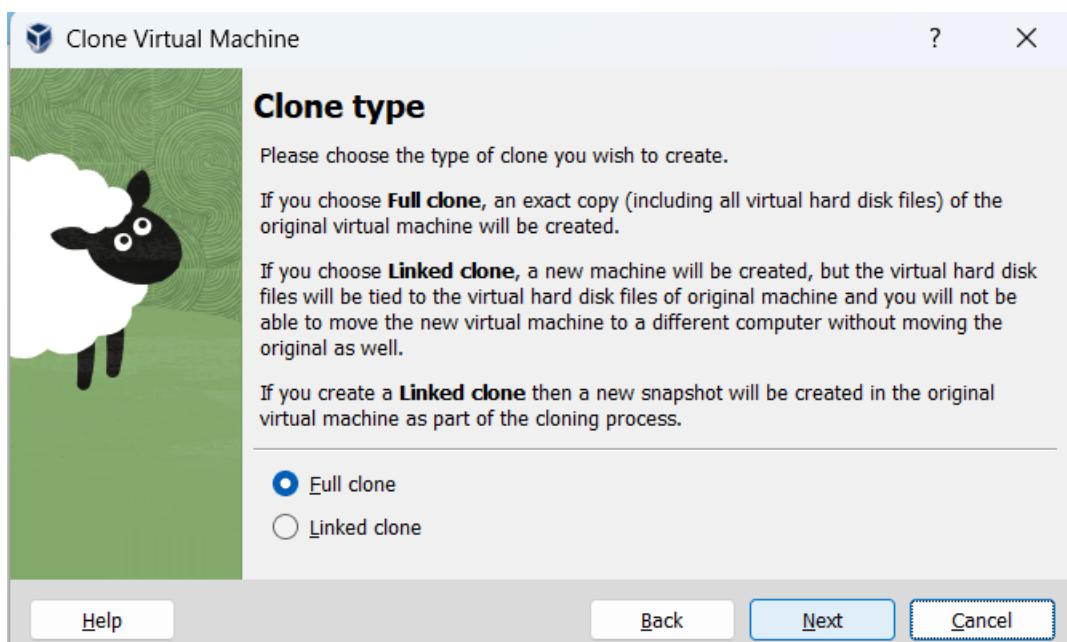


Cloning Virtual machine:

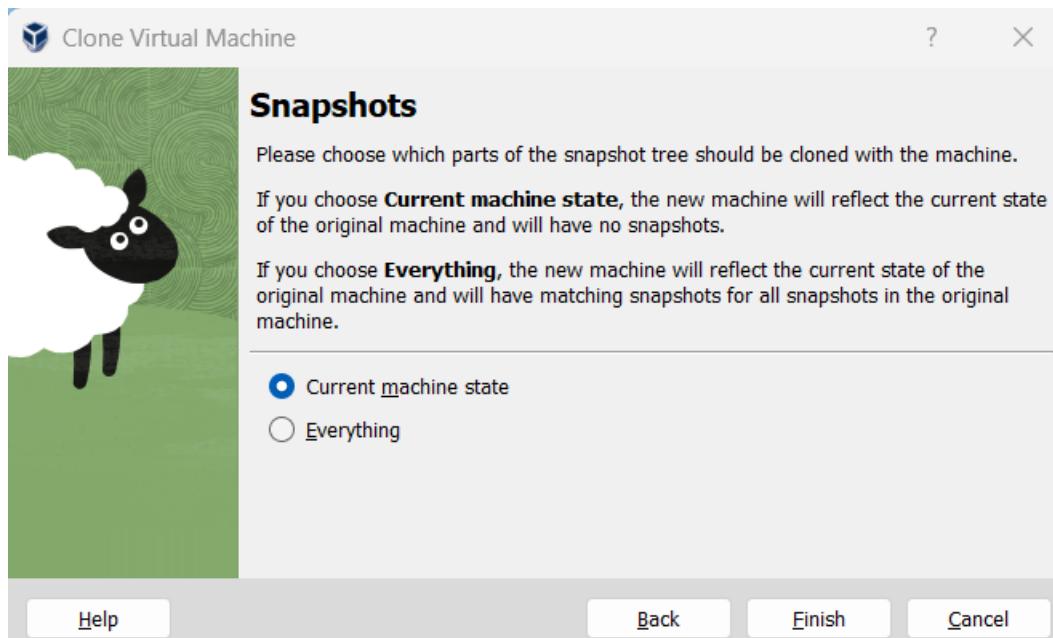
- Here select the virtual machine you want to clone and right click on it, then select clone option.
- Now provide clone's name, choose the path for clone machine and select the additional options.
- Click on next to proceed.



- Select whether to create a full clone or linked clone.
- Click on next.



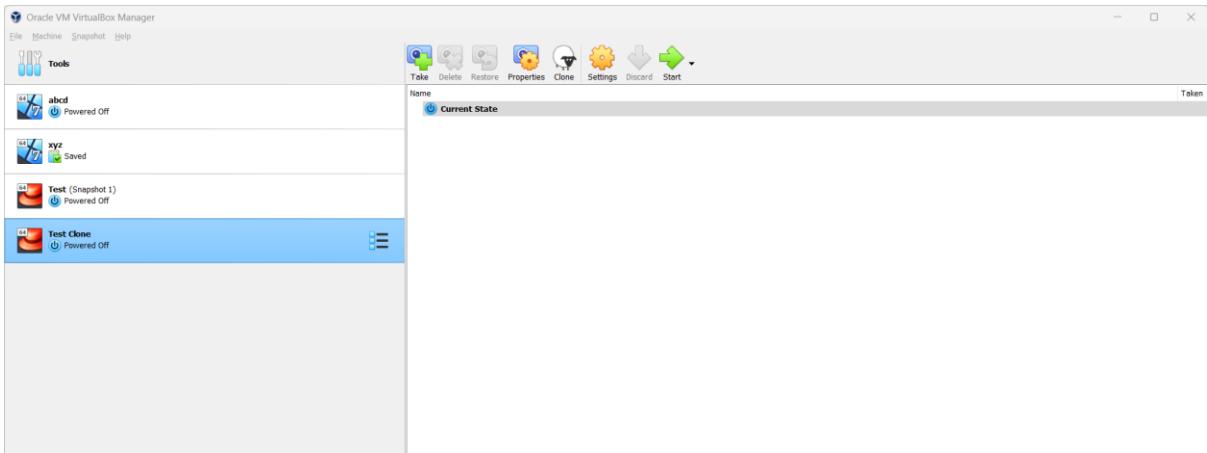
- Now you need to select current machine state if you do not want snapshot to be cloned or everything if you want to include the snapshot.
- Click on finish.



- Can see the progress of the machine being copied.

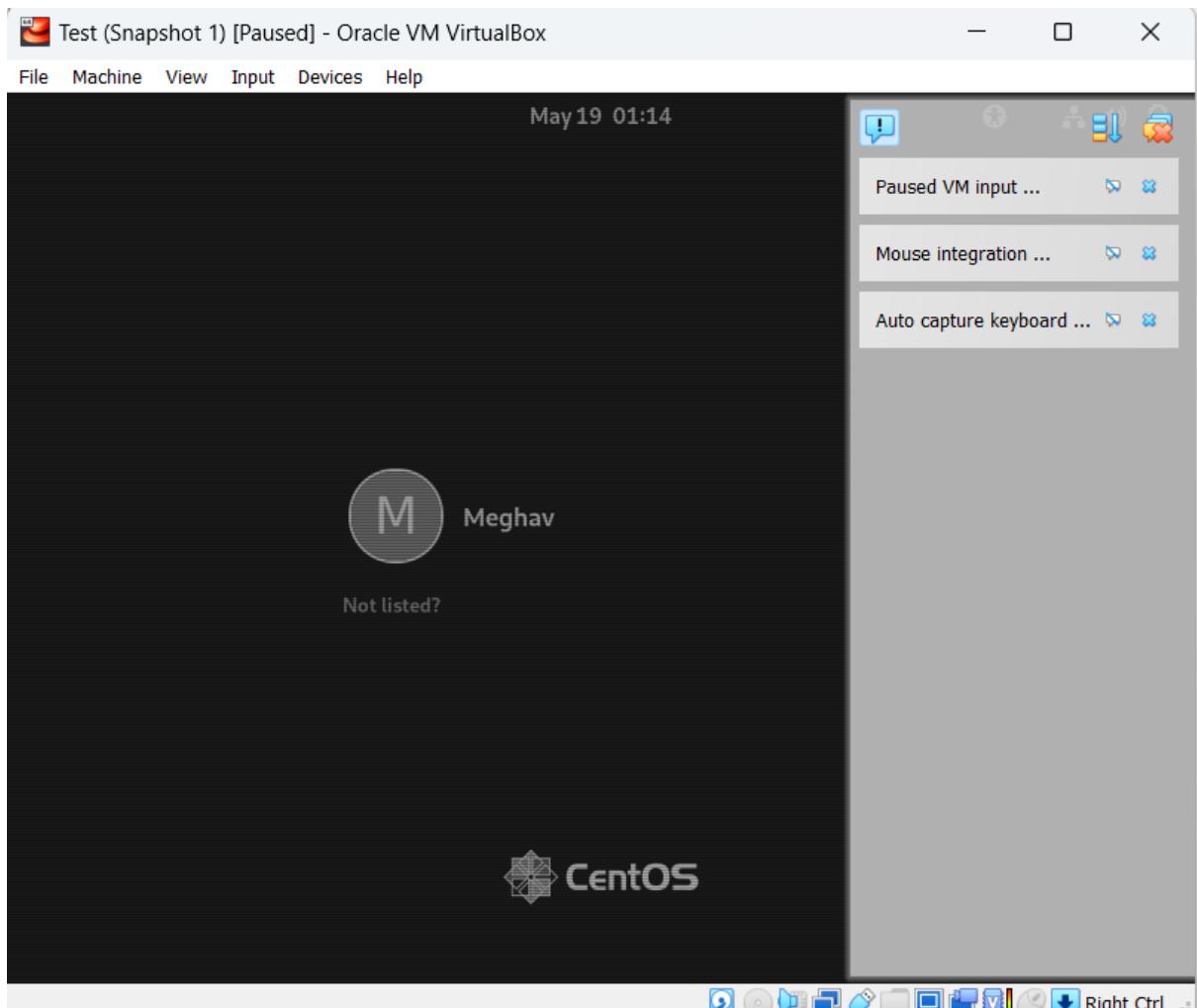


- Finally, the clone is created.



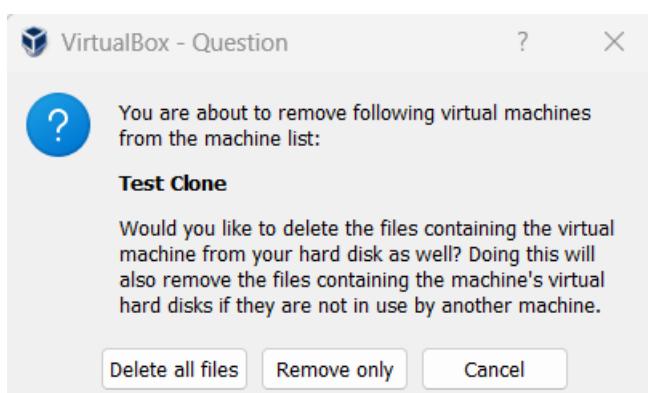
Suspend Virtual Machine.

- Validate the VM has been suspended/paused. Make sure to save all your work before suspending/pausing the VM.

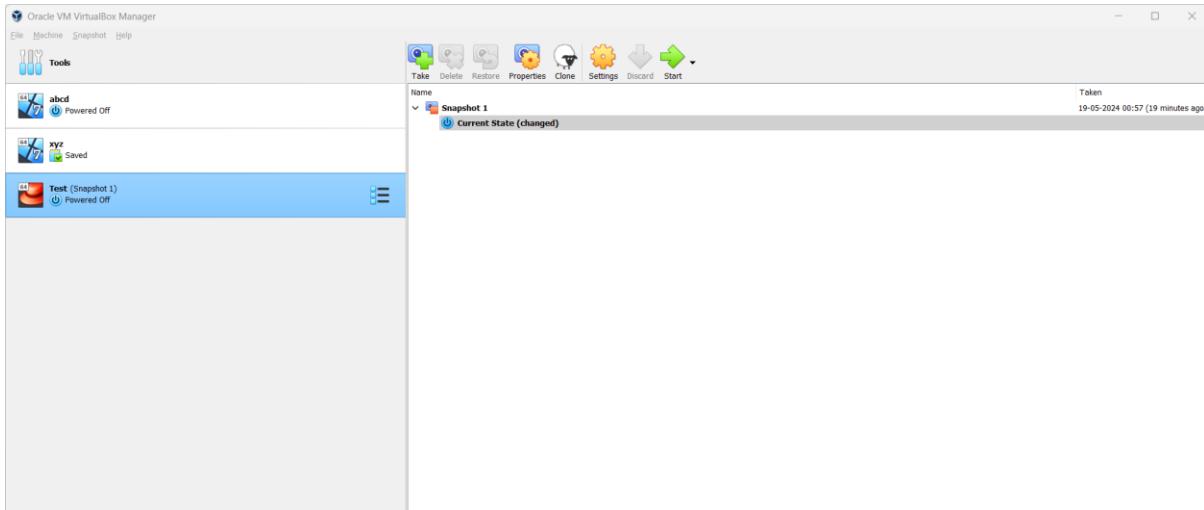


Deleting virtual machine :

- Power off the virtual machine before deleting it.
- Click on delete all files.



- Virtual Machine has deleted.



➤ KVM

(Seruban Peter Shan-500235797)

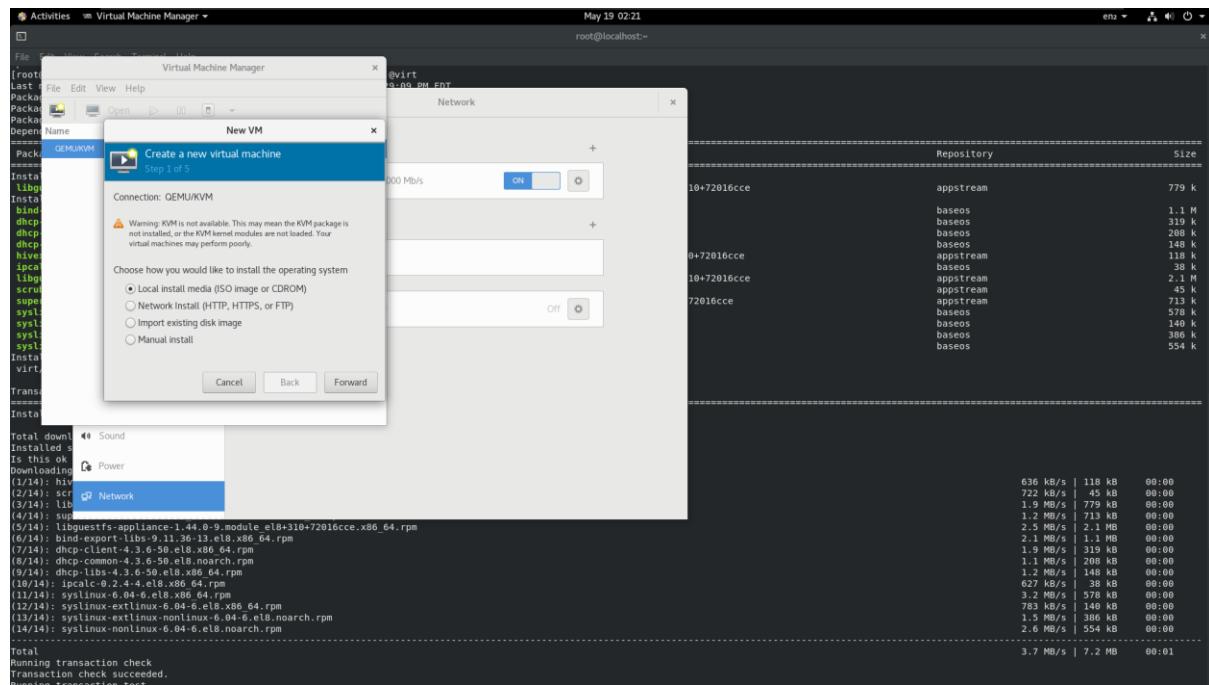
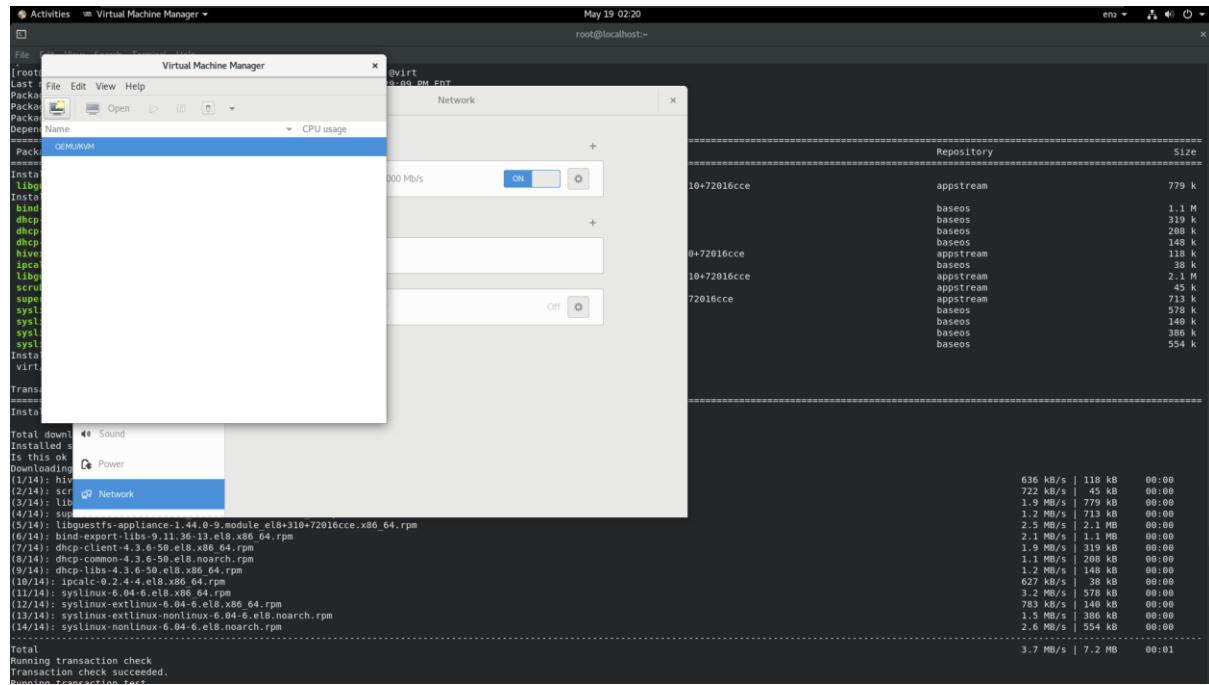
- Install KVM on Linux

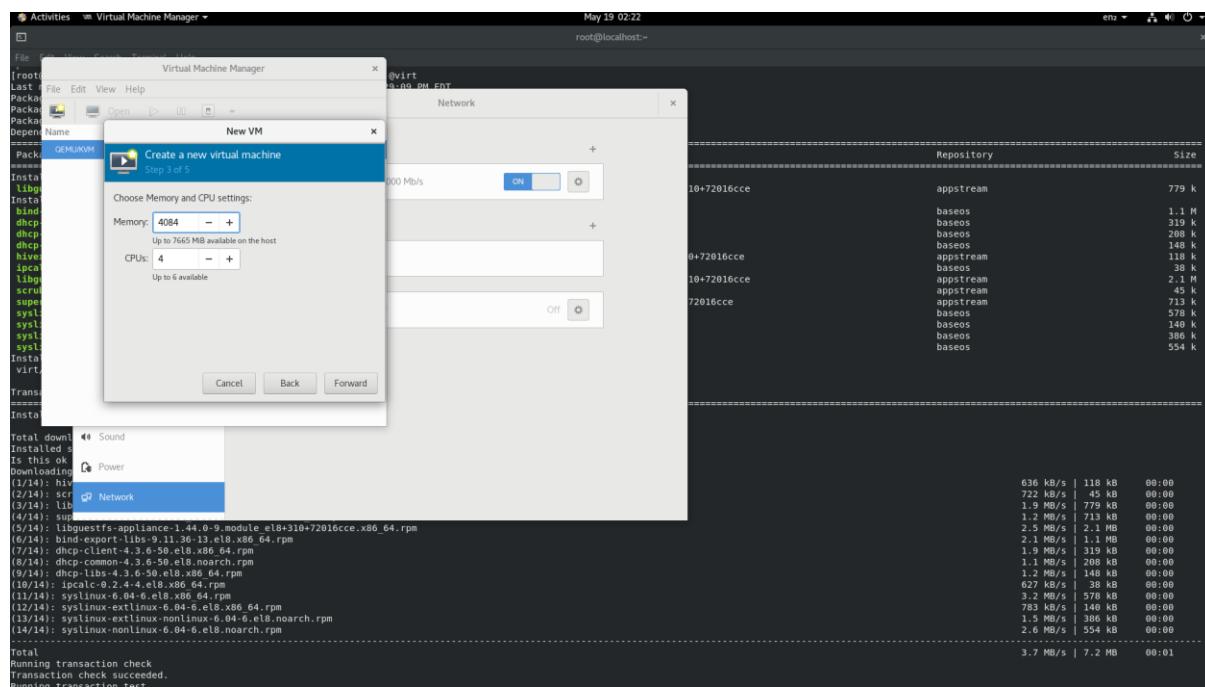
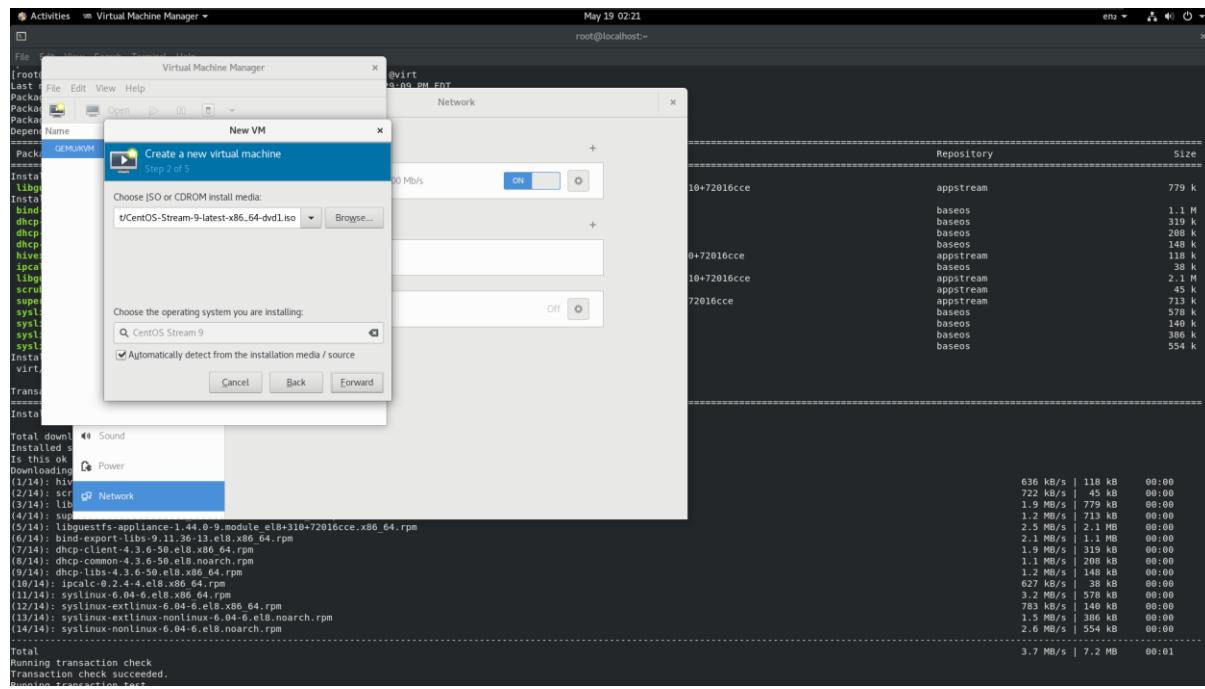
```
Activities Terminal May 19 02:05 root@localhost:~ enu □ ○ ×
File Edit View Search Terminal Help
root@localhost ~# sudo dnf install libvirt qemu-kvm virt-manager @virt
Last metadata expiration check: 3:35:51 ago on Sat 18 May 2024 10:29:09 PM EDT.
Package libvirt-libs-1.1.module_el8@1010@0eb1a2eb.x86_64 is already installed.
Package libvirt-libs-15:6.2.0-49.module_el8@991@097e136d.x86_64 is already installed.
Package virt-manager-3.2.9-4.el8.noarch is already installed.
Dependencies resolved.
=====
Package           Architecture      Version            Repository      Size
=====
Installing group/module packages:
libguestfs          x86_64        1:1.44.0-9.module_el8+310+72016cce      appstream    779 k
Installing dependencies:
bind-export-libs      x86_64        32:9.11.36-13.el8      baseos       1.1 M
dhclient             x86_64        12:4.3.6-50.el8      baseos      319 k
dhcp-common          noarch       12:4.3.6-50.el8      baseos      208 k
dhcplib              x86_64        12:4.3.6-50.el8      baseos      148 k
hive                x86_64        1.3.18-23.module_el8+310+72016cce      appstream   118 k
ipcalc              x86_64        0.2.4-4.el8      baseos      38 k
libguestfs-appliance x86_64        1:1.44.0-9.module_el8+310+72016cce      appstream   2.0 M
scrub               x86_64        2.5.2-16.el8      appstream   45 k
supermin            x86_64        5.2.1-2.module_el8+310+72016cce      appstream   713 k
syslinux             x86_64        6.04-6.el8      baseos      578 k
syslinux-exlinux     x86_64        6.04-6.el8      baseos      140 k
syslinux-exlinux-nomintux x86_64        6.04-6.el8      baseos      386 k
syslinux-nomintux    noarch       6.04-6.el8      baseos      554 k
Installing module profiles:
virt/common
=====
Transaction Summary
Install  14 Packages
=====
Total download size: 7.2 M
Nothing to do
Is this ok [y/N]: y
Downloading Packages:
(1/14): hvix-1.3.18-23.module_el8+310+72016cce.x86_64.rpm      636 kB/s | 118 kB  00:00
(2/14): scrub-2.5.2-16.el8.x86_64.rpm      722 kB/s | 45 kB  00:00
(3/14): libguestfs-1.44.0-9.module_el8+310+72016cce.x86_64.rpm      1.9 MB/s | 713 kB  00:00
(4/14): supermin-5.2.1-2.module_el8+310+72016cce.x86_64.rpm      1.2 MB/s | 713 kB  00:00
(5/14): libguestfs-appliance-1.44.0-9.module_el8+310+72016cce.x86_64.rpm      2.5 MB/s | 2.1 MB  00:00
(6/14): bind-export-libs-9.11.36-13.el8.x86_64.rpm      2.1 MB/s | 1.1 MB  00:00
(7/14): dhclient-2.5.2-16.el8.x86_64.rpm      1.9 MB/s | 319 kB  00:00
(8/14): dhcp-common-4.3.6-50.el8.noarch.rpm      1.1 MB/s | 208 kB  00:00
(9/14): dhcplib-1.3.18-23.module_el8+310+72016cce.x86_64.rpm      1.2 MB/s | 208 kB  00:00
(10/14): ipcalc-0.2.4-4.el8.x86_64.rpm      627 kB/s | 38 kB  00:00
(11/14): syslinux-6.04-6.el8.x86_64.rpm      3.2 MB/s | 578 kB  00:00
(12/14): syslinux-exlinux-x-6.04-6.el8.x86_64.rpm      783 kB/s | 148 kB  00:00
(13/14): syslinux-exlinux-nomintux-6.04-6.el8.noarch.rpm      1.0 MB/s | 386 kB  00:00
(14/14): syslinux-nomintux-6.04-6.el8.noarch.rpm      2.6 MB/s | 354 kB  00:00
=====
Total                                         3.7 MB/s | 7.2 MB  00:01
Running transaction check
Transaction check succeeded.
Running transaction test

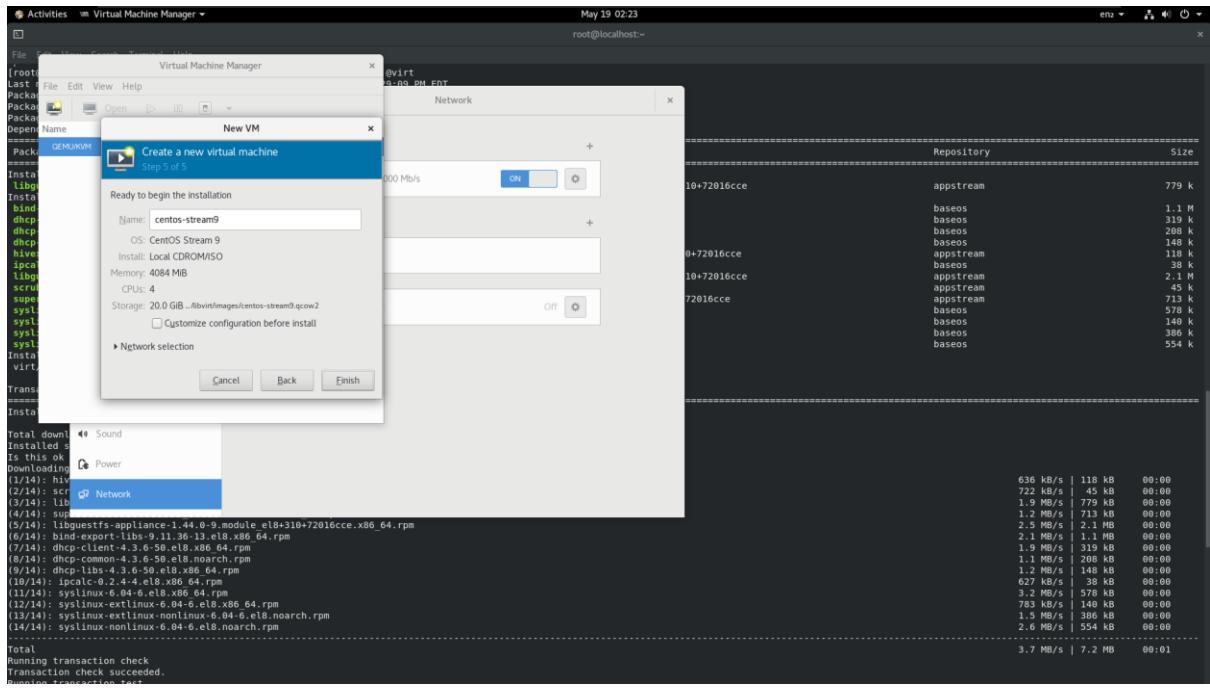
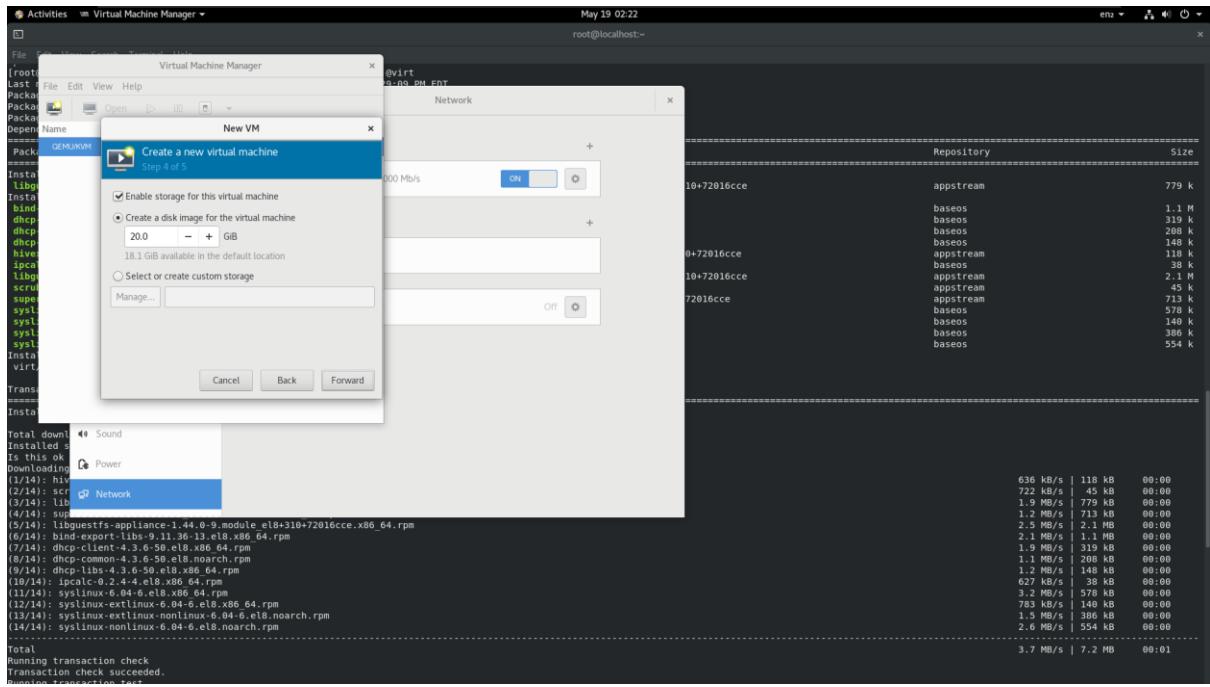
```

- Libvirt: The libvirt virtualization library and management tool
- Virt-install: A command-line tool for creating virtual machines
- Libvirt-client: A package provides command-line client tools for managing libvirt-based virtualization environments.
- Qemu-kvm: The QEMU emulator with KVM support these are some of the dependencies that is needed Linux based KVM VMM to install\\\\

CREATE A VM IN KVM

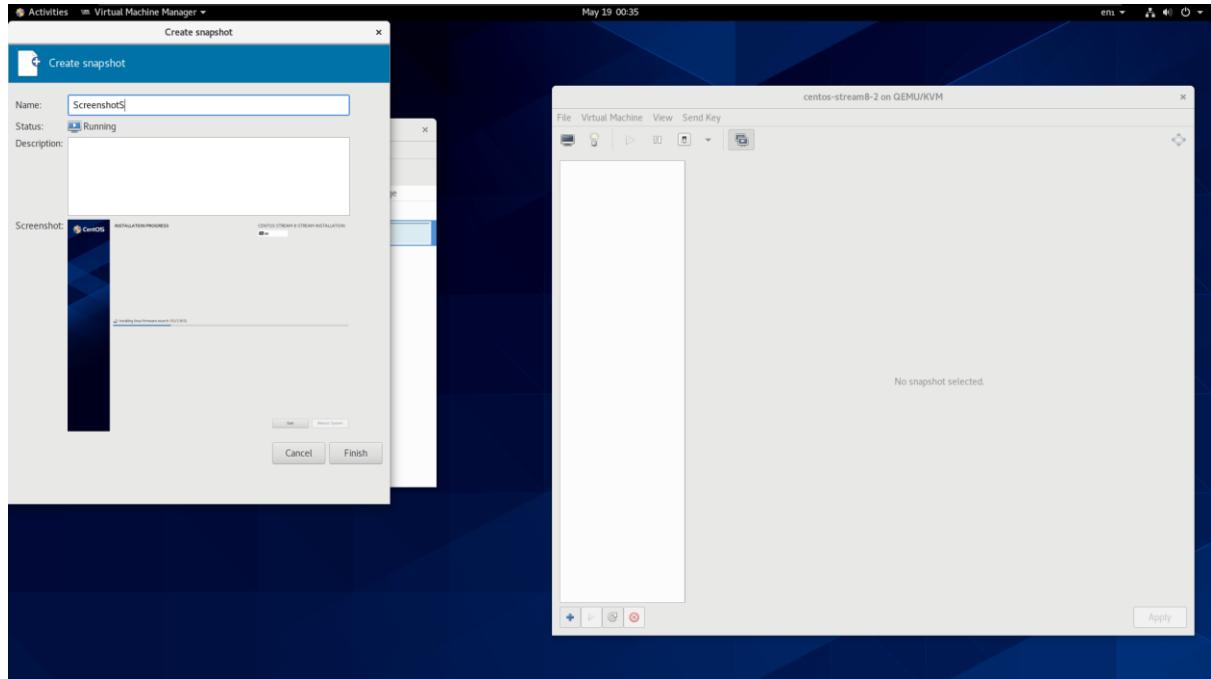




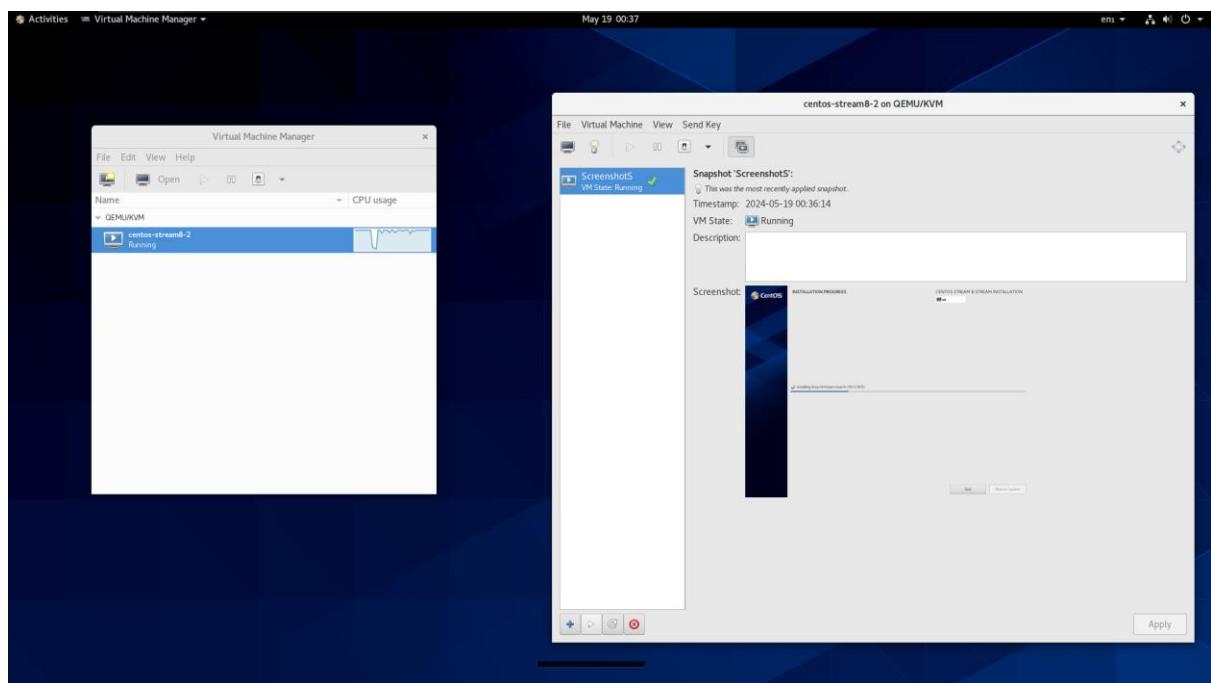


TAKING SCREENSHOTS OF VM IN KVM

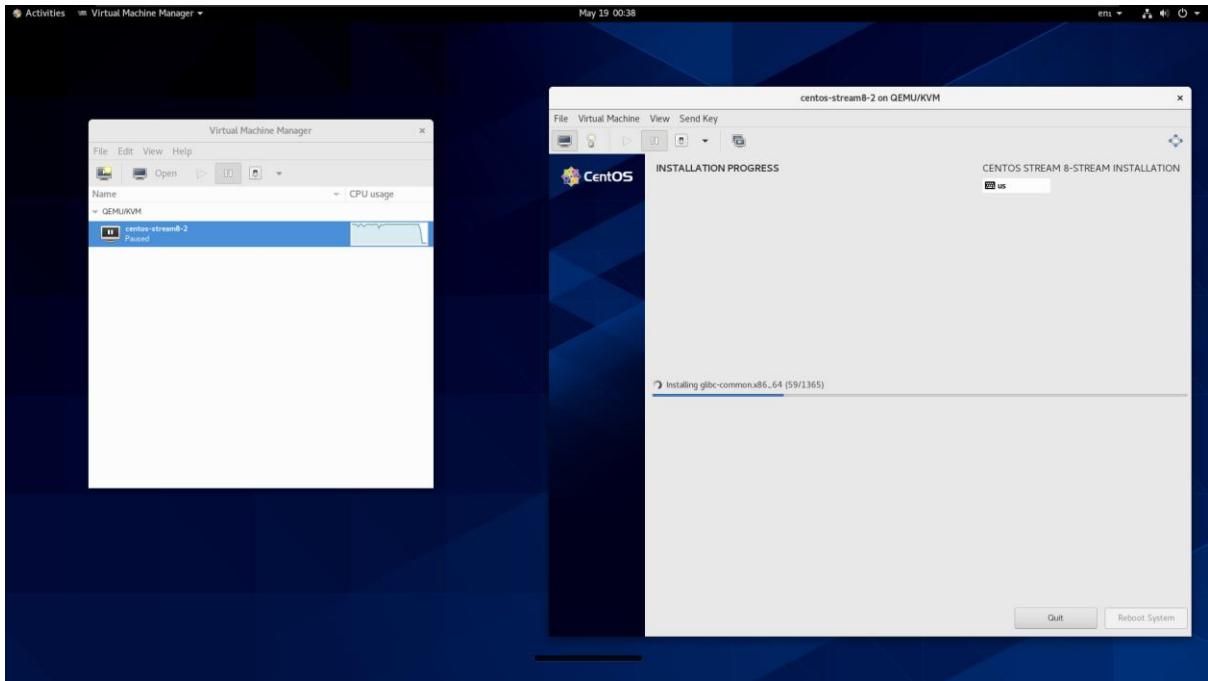
- On the vmm of kvm there is a screenshot button on the tab where you press the button.click the plus button (On the bottom left)and you will get dialog box where you should fill the name of the screenshot and description button



- When you click on the play button To start back on the screenshot

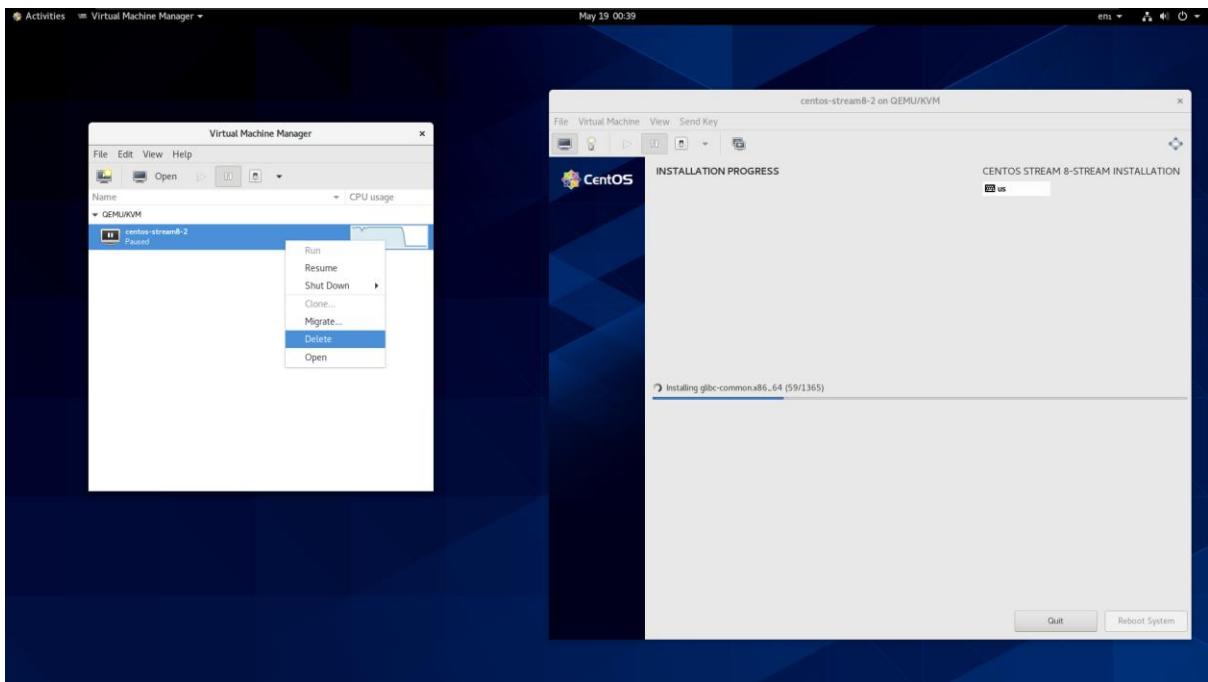


- PAUSE/SUSPEND VM in KKVM when you click the pause button it suspend/pause the vm

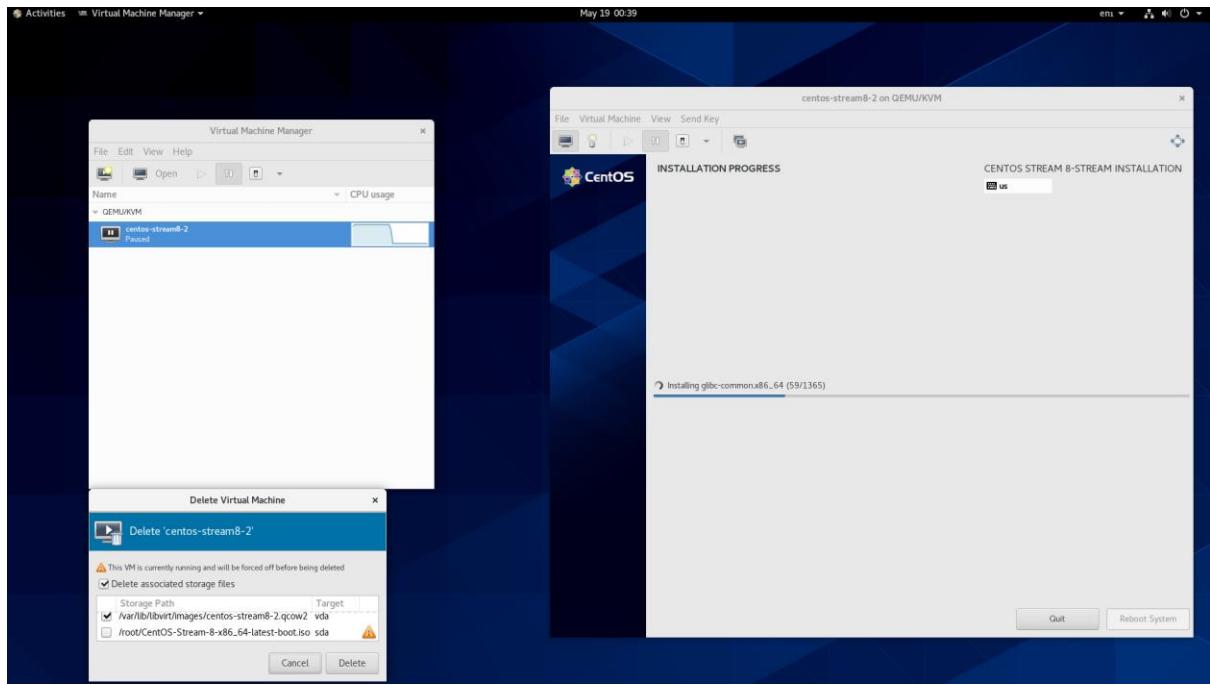


DELETE A VM IN KVM

- Write click on the vm you want to delete and press the delete button



- If you want to delete the disk to you should tick on the qcow2 file and click delete



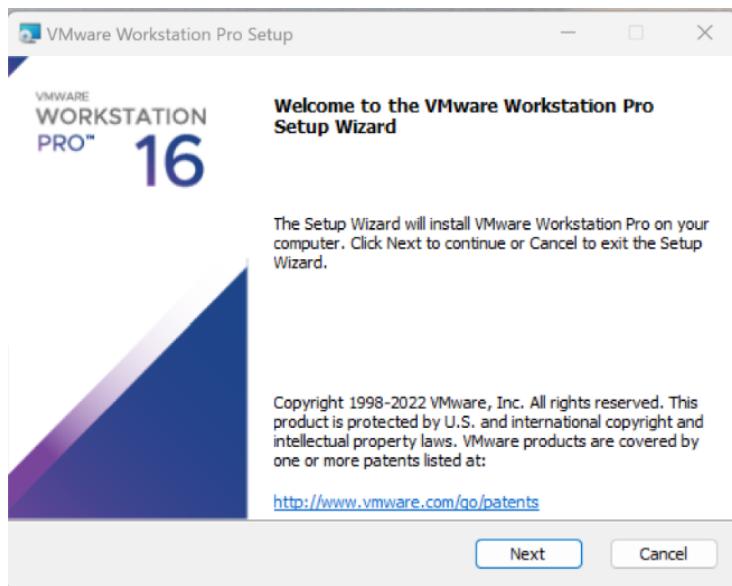
➤ Install VMWare

Maedeh Abedrashidi(500236066)

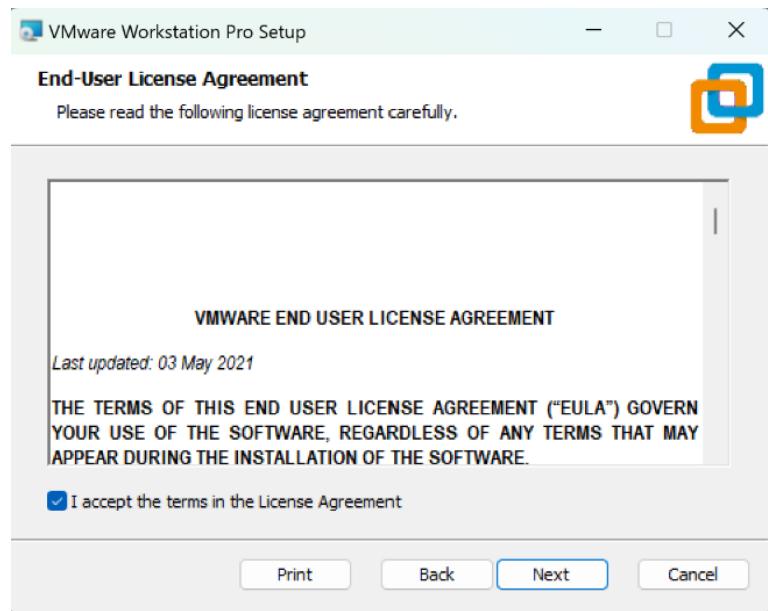
NOTE: Since Broadcom acquisition of VMware we couldn't download VMware player so we used workstation pro 16 which was available to us

- VirtualBox is an open-source virtualization software that enables the running of multiple operating systems on a single physical machine.
In this part I will show how to install a VMWare step by step:

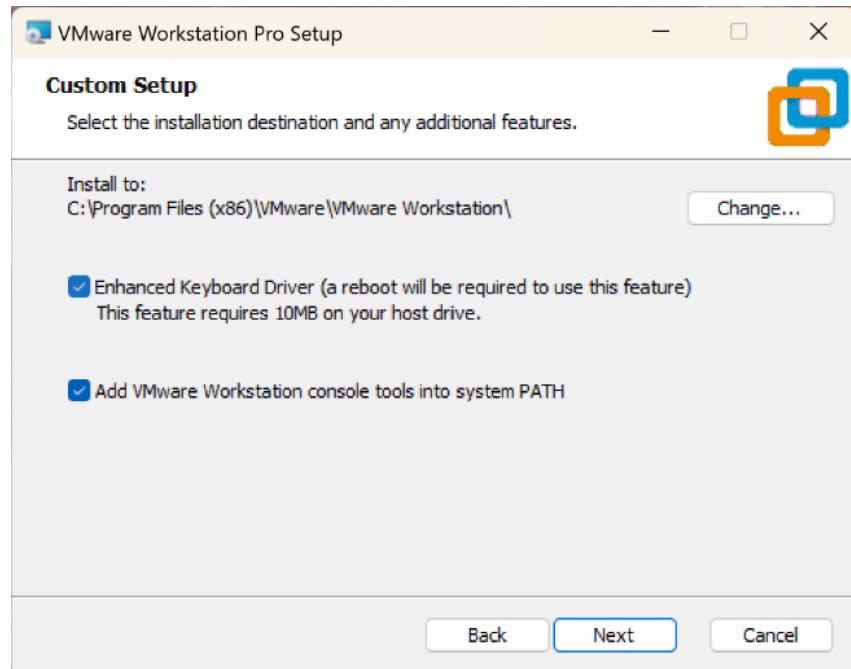
1. Download the installer.
2. Run the downloaded setup file.
3. Click Next to start the installation wizard.



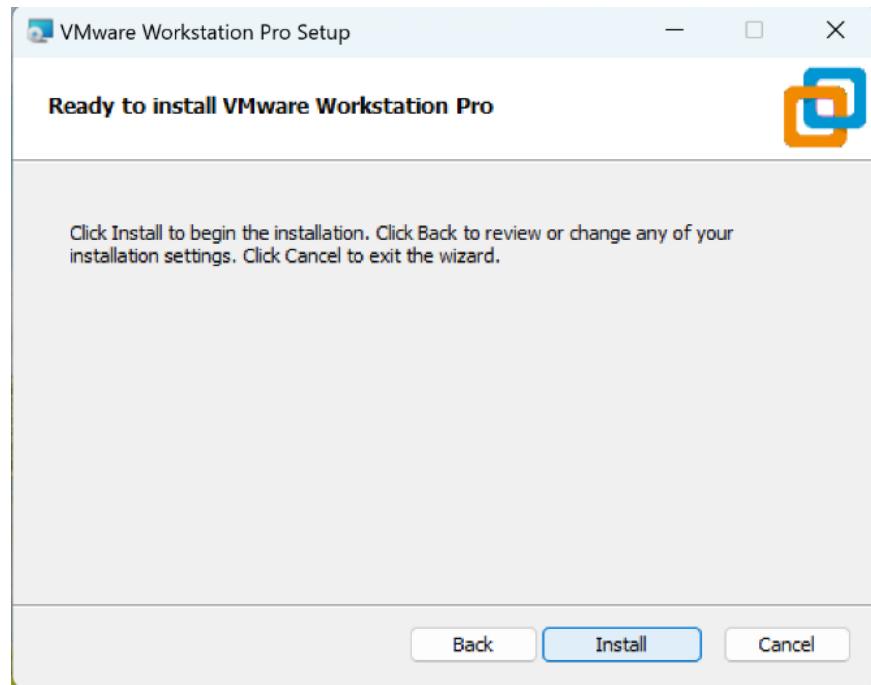
4. \Read and accept the End User License Agreement.



5. Choose whether to enable product startup and join the VMware Customer Experience Improvement Program



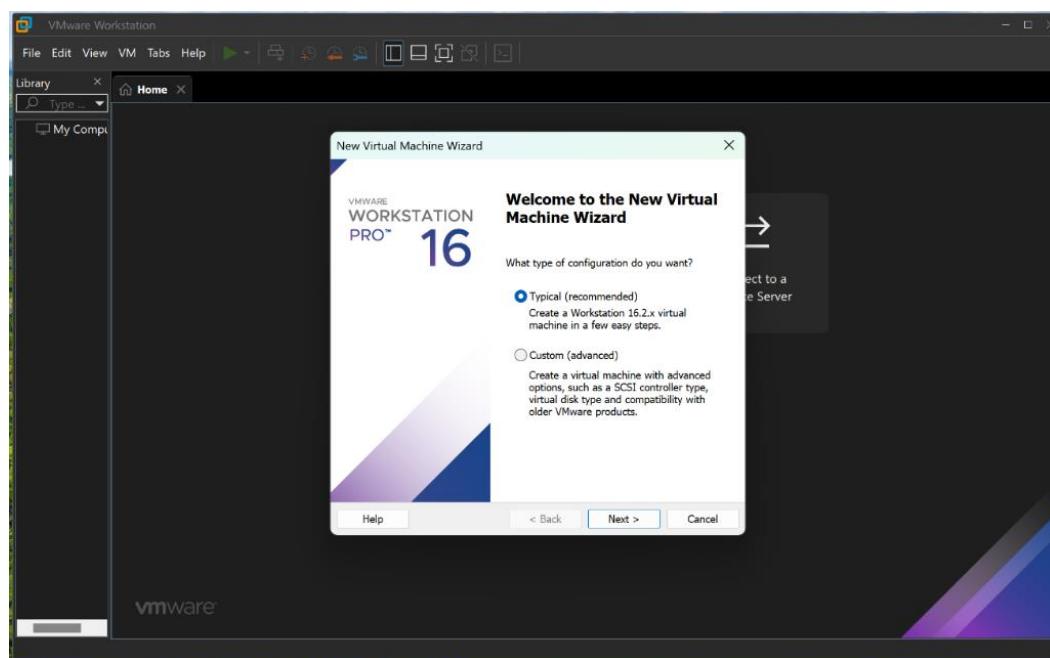
6. Click **Install** to begin the installation.



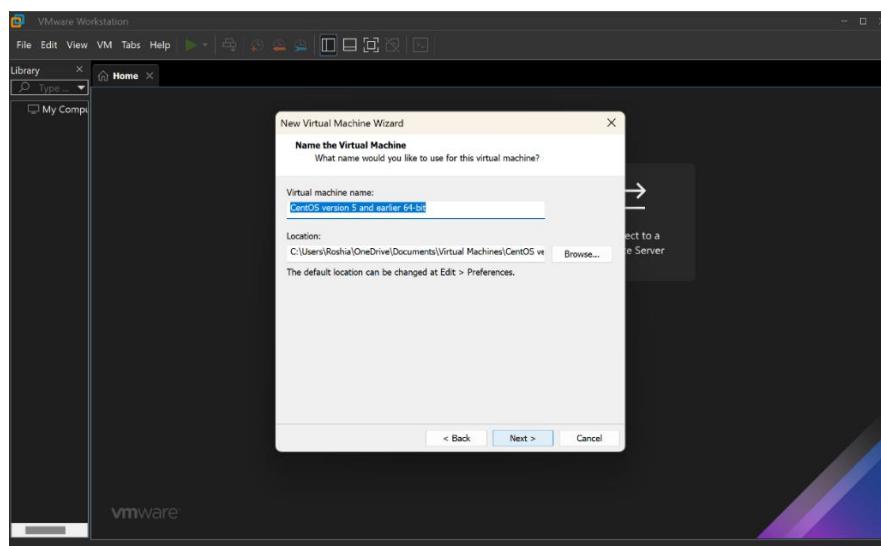
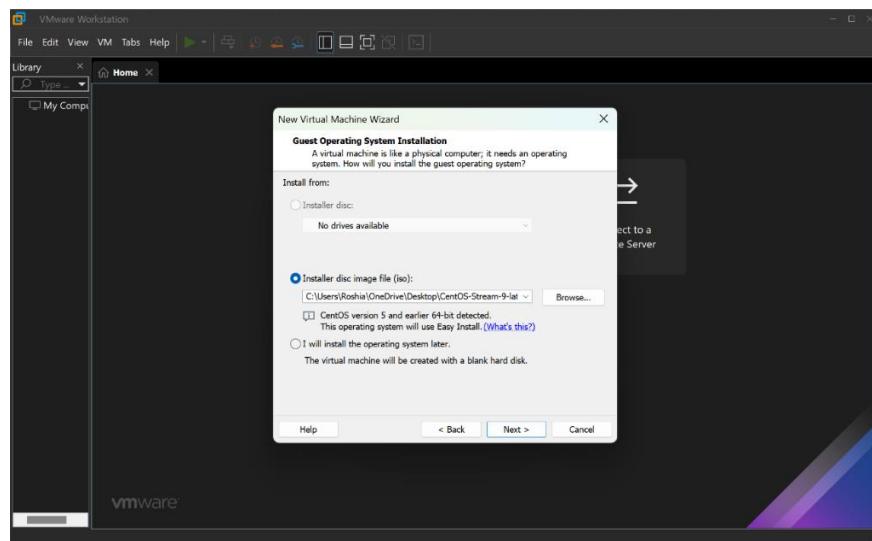
CREATE VM in VMWARE

To create VM in VMWare:

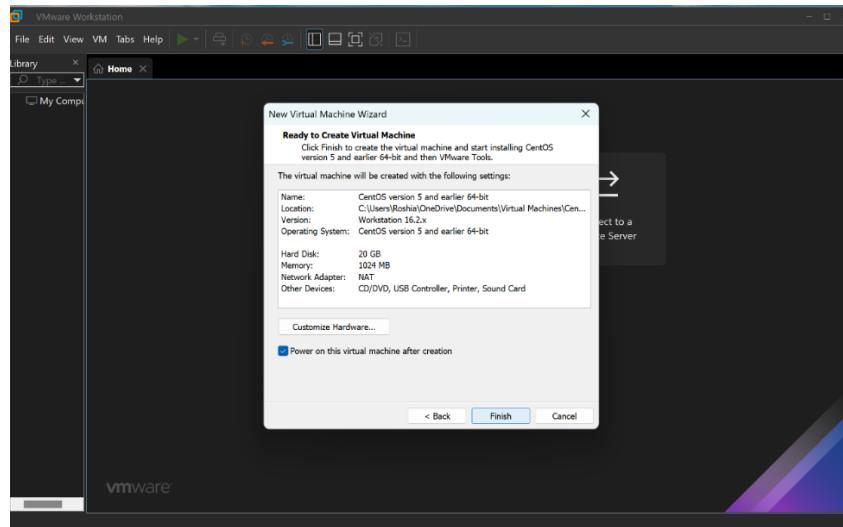
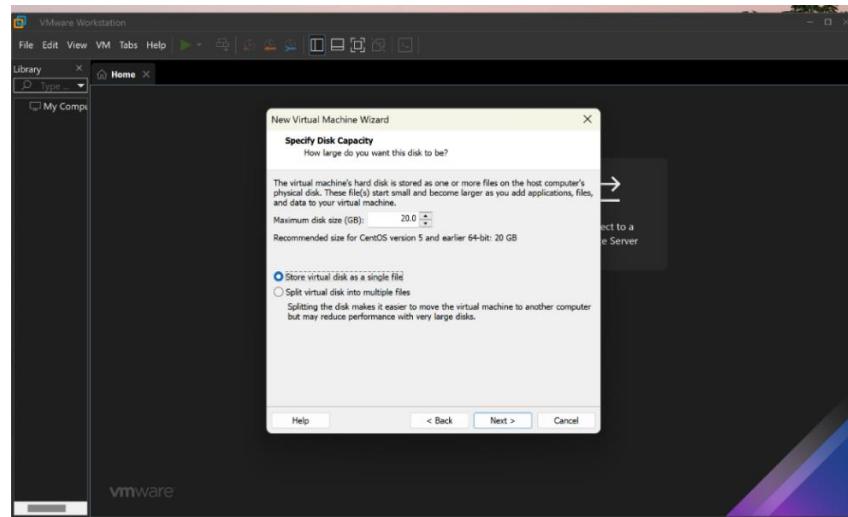
1. Launch VirtualBox
2. Click the “Create a New Virtual Machine” button



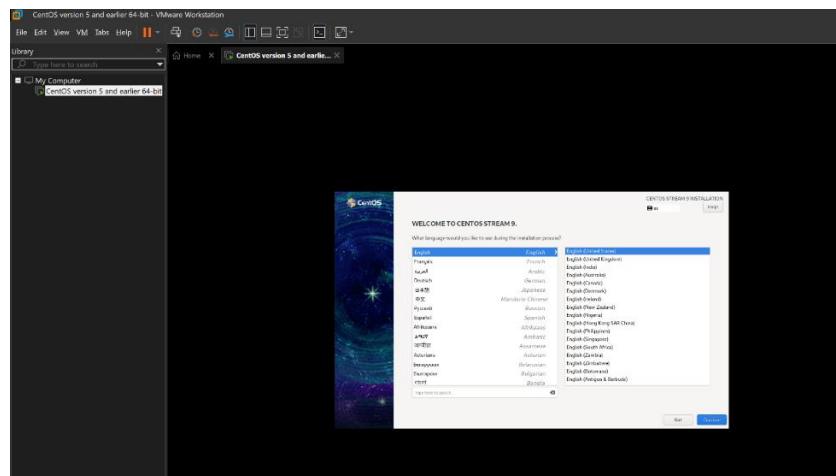
3. specify the operating system.

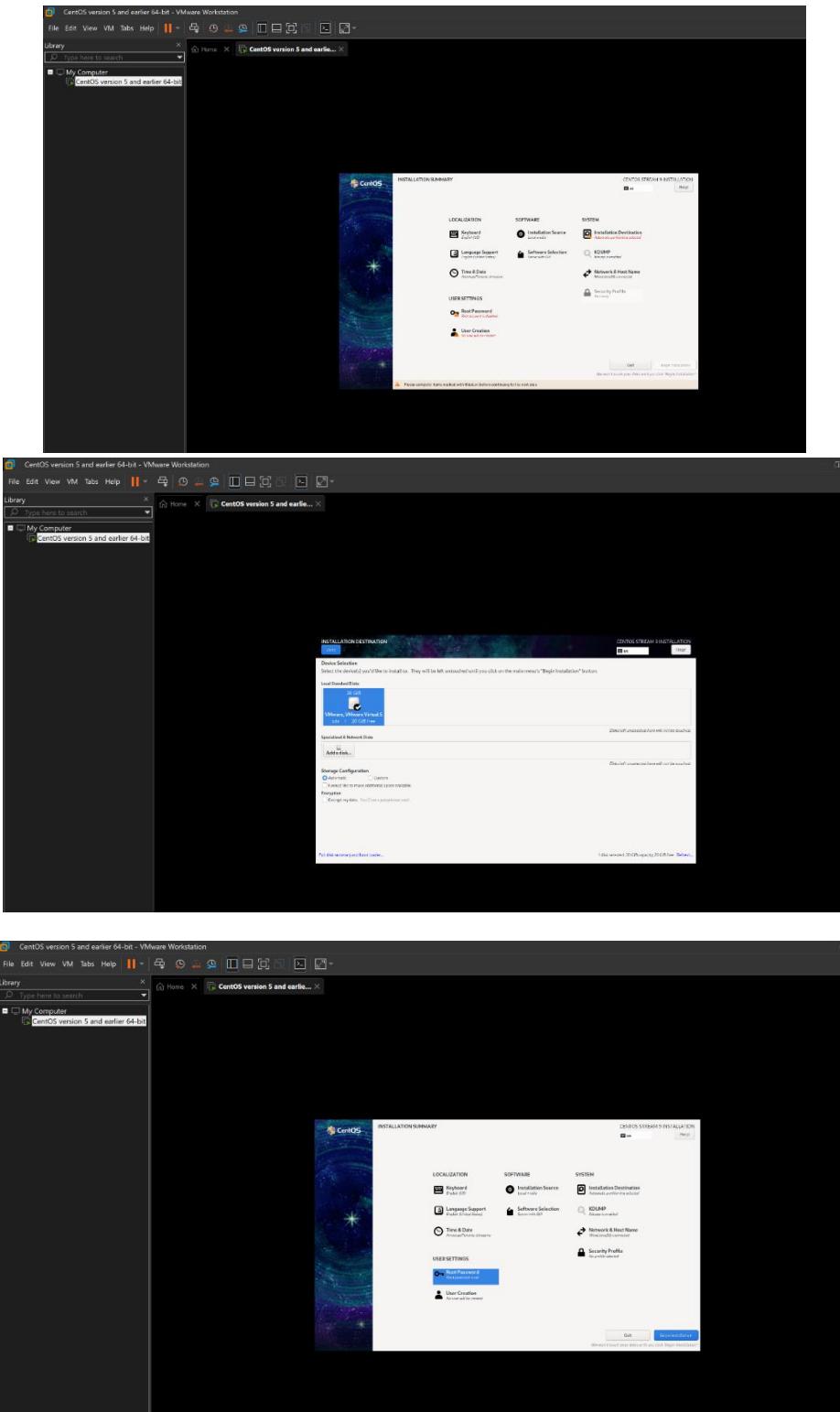


4. Specify the disk capacity

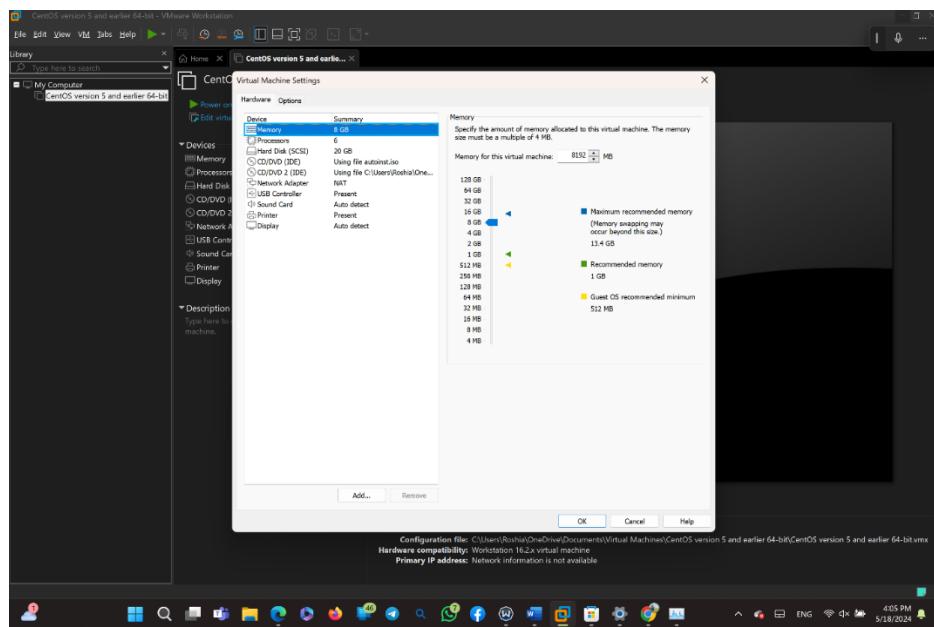
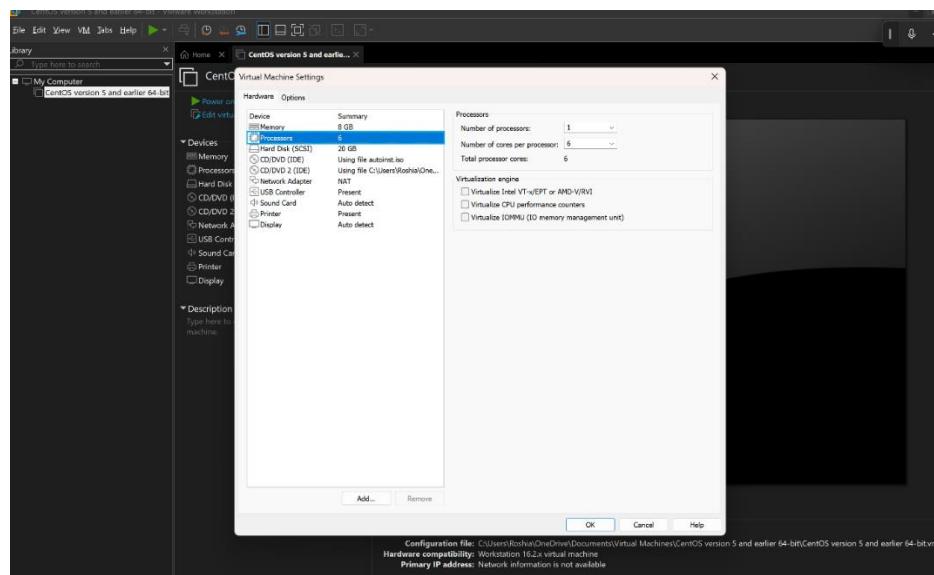


5. Install VMware tool



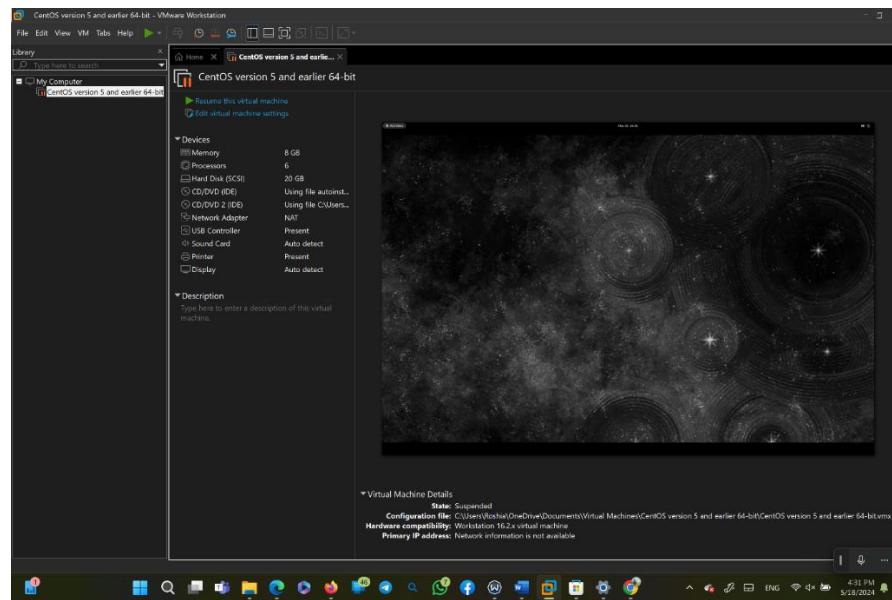


6. Adjust the number of processors, memory, and other hardware settings as needed.



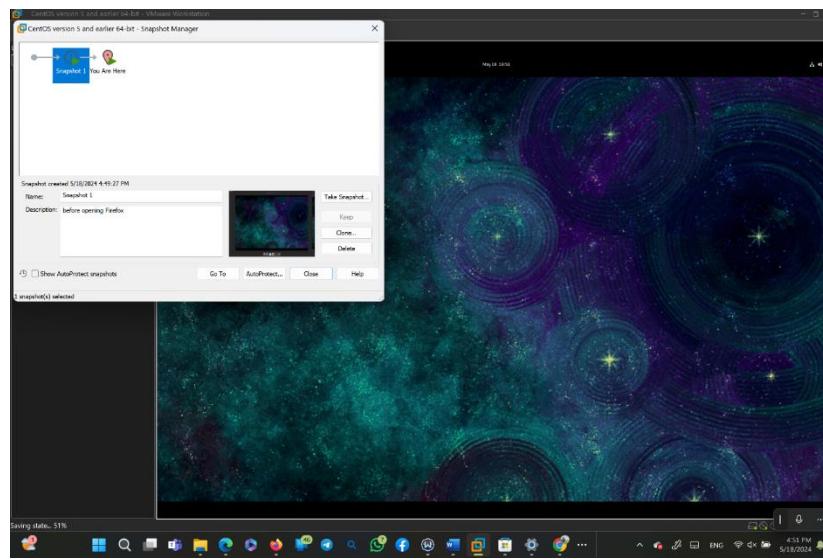
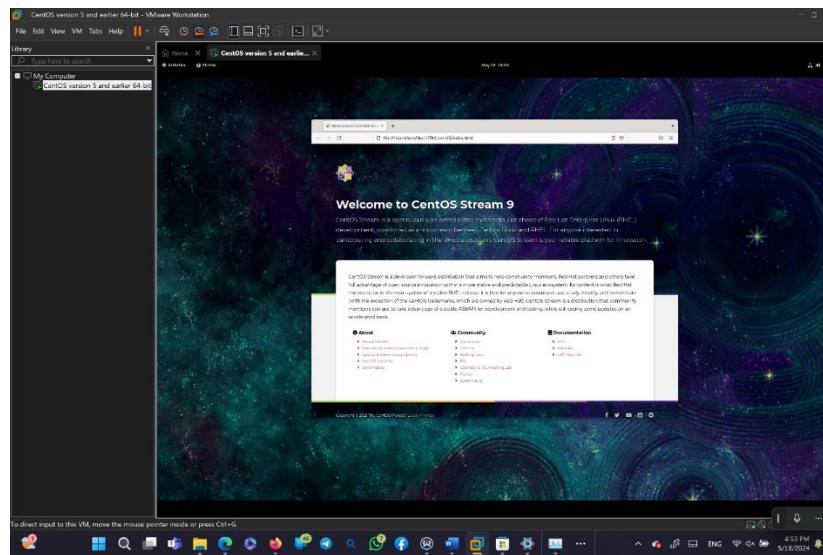
Suspend VM

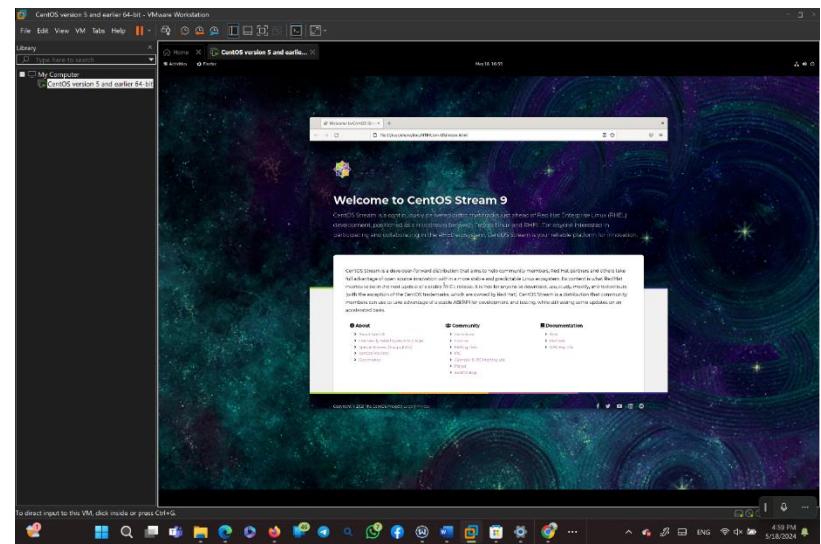
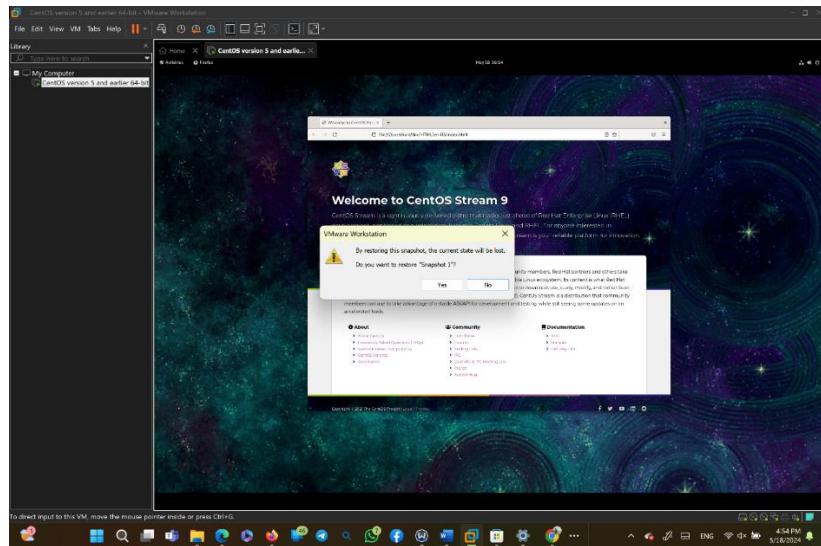
- To Suspend a Virtual Machine (VM) without completely shutting it down by ensuring it's running:
- selecting "Pause" or "Save State" in the "Machine" menu and saving its state for later restarting.



Create a snapshot

- Snapshots are virtual machines that capture the current state of the VM, including memory, disk, and settings.
- To create a snapshot:
 - select the VM in VirtualBox Manager, click "Machine" > "Take Snapshot".

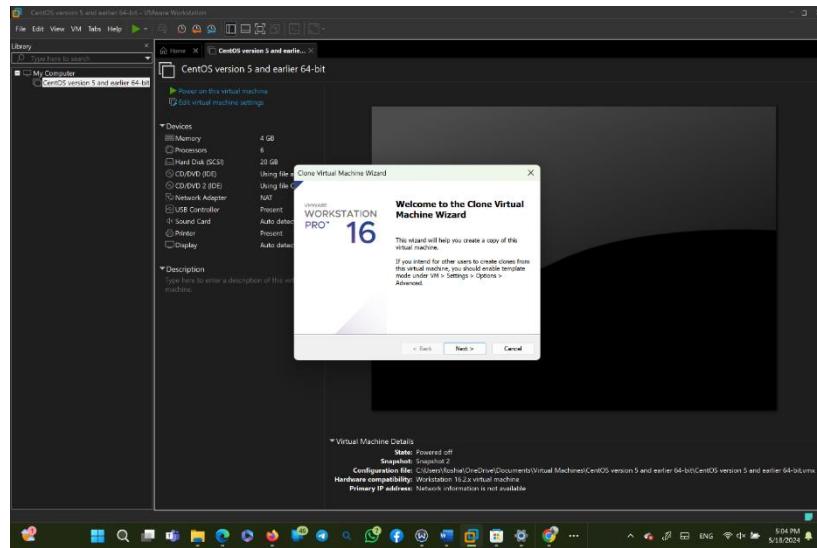
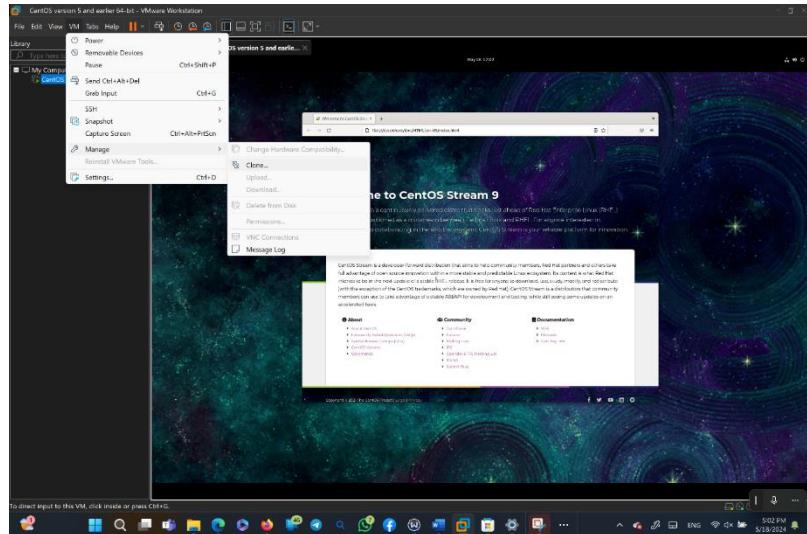




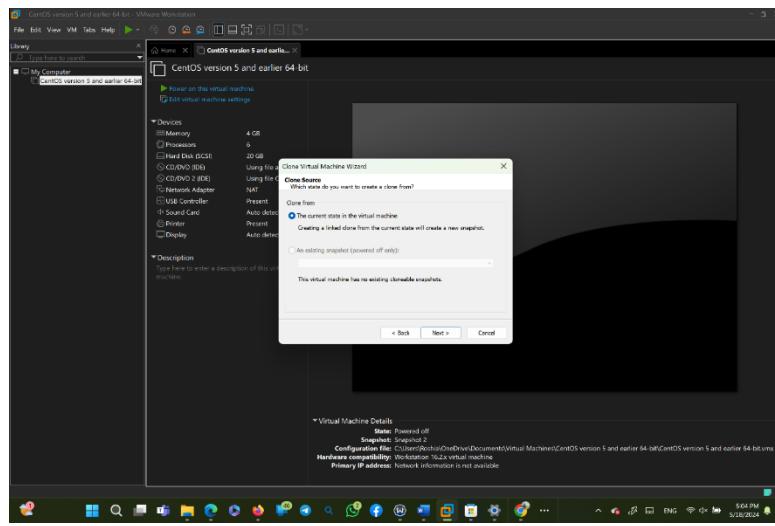
Create a snapshot

To create a VM clone:

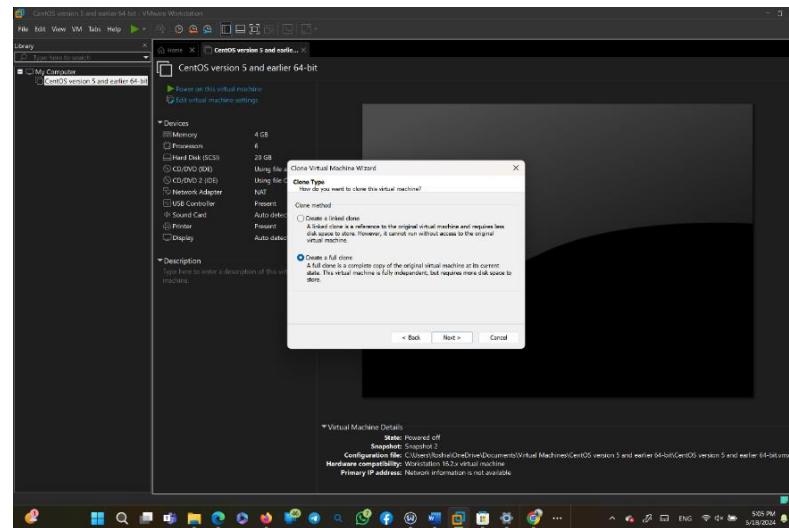
1. Right-click on the virtual machine and select Clone from the context menu.

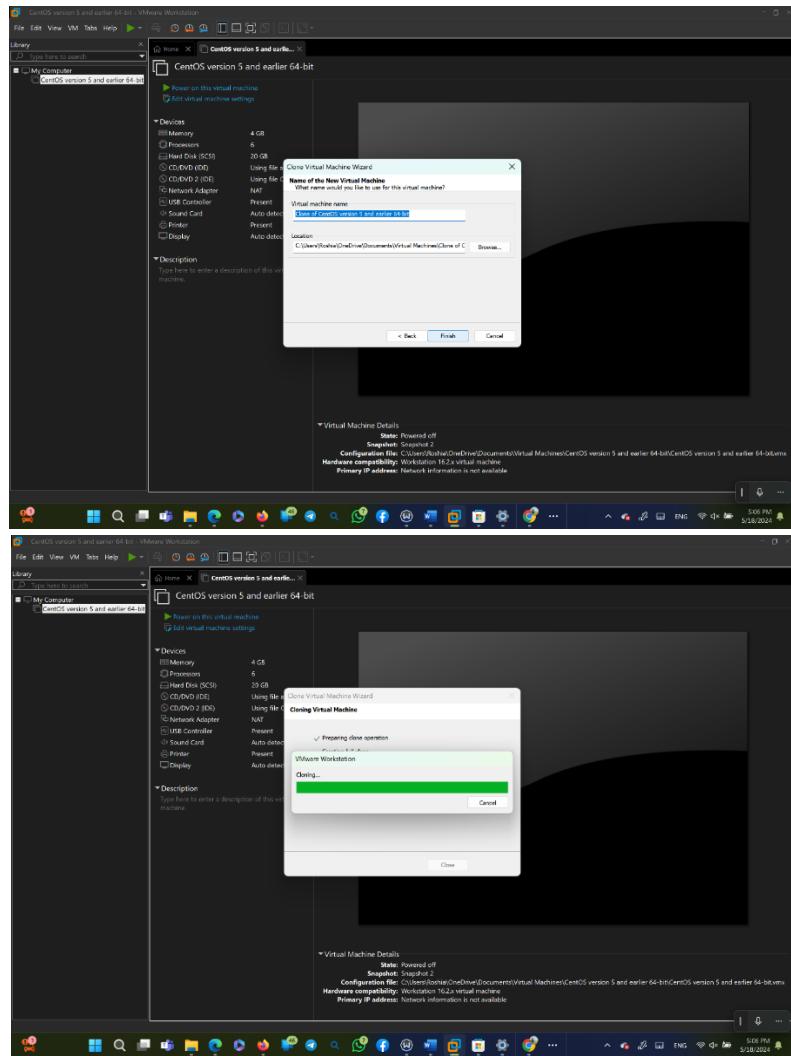


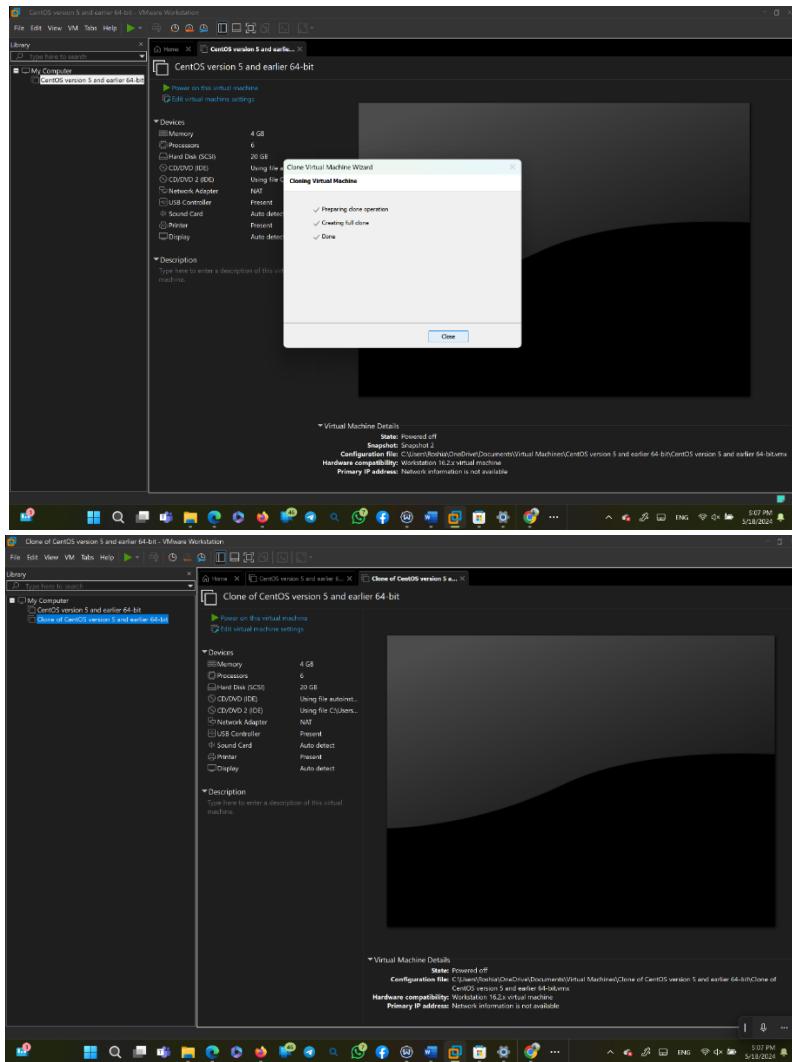
2. Select the state of the parent virtual machine from which you want to create the clone



3. Specify whether you want to create a linked clone (which shares virtual disks with the original) or a full clone (which creates independent virtual disks).



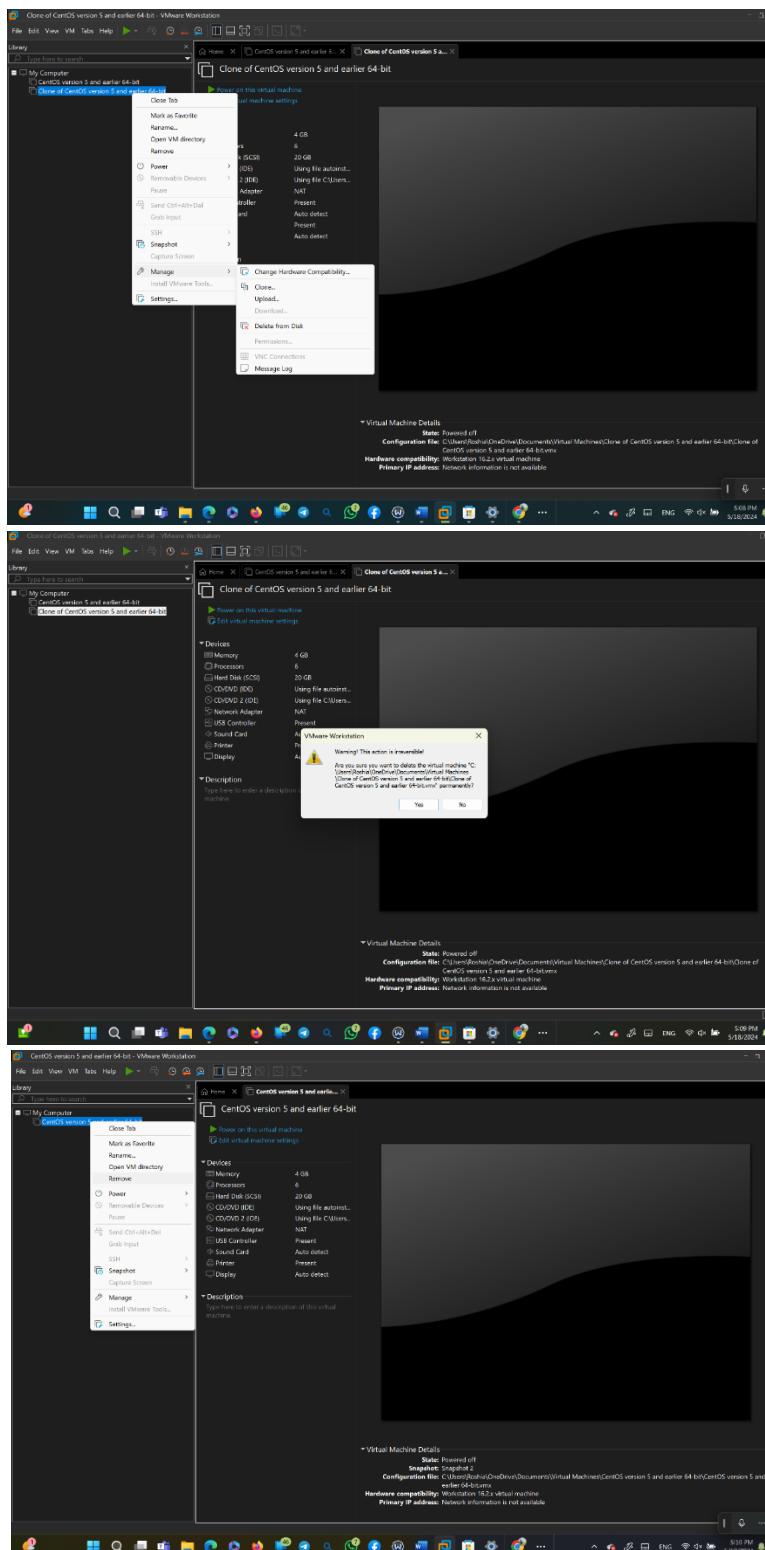




Delete Clone and VM

To remove a Virtual Machine (VM)

1. shut down the VM
2. right-click on it
3. select "Remove" choose to delete only the VM or its associated files, and confirm the deletion to remove the VM from VirtualBox.



➤ **Difference between VirtualBox, VMWare Workstation Player And KVM:** **(Shikhar Gupta-500236676)**

Feature	VirtualBox	VMware Player	KVM
Supported Host OS	Windows, macOS, Linux	Windows, Linux	Linux
Guest OS Compatibility	Windows, macOS, Linux, and others	Windows, Linux	Linux, Windows, macOS, and others
Integration	Integrates with host operating system's features to ensure seamless performance	Integrates with host OS features	Works seamlessly with the Linux kernel and its tools
Performance	Good performance across various host platforms	Good performance on Windows hosts	Excellent performance on Linux hosts
User Interface	Functional interface with a less refined appearance	User-friendly interface	A text-based interface with graphical user interface
3D Graphics Support	Provides fundamental support for 3D graphics.	Offers satisfactory 3D graphics support	Provides advanced 3D graphics support when using suitable hardware.
Snapshots	Provides snapshot functionality for managing VM states	Allows the creation and use of snapshots	Supports snapshot functionality
Virtual Machine Import/Export	Provides import/export options for managing VMs	Offers limited import/export options	Supports VM import/export
Cloning	Provides the ability to duplicate VMs	Allows cloning of virtual machines	Supports VM cloning for quick replication
USB Support	Supports USB devices for connectivity	Provides good USB support	Supports USB devices for connectivity
Networking Options	It offers different choices for setting up networks in virtual machines	Provides various network choices	Provides flexible network configuration
License Cost	Software that is free to use and doesn't require payment for a license	Available at no cost for personal use	Free and open source without any fees