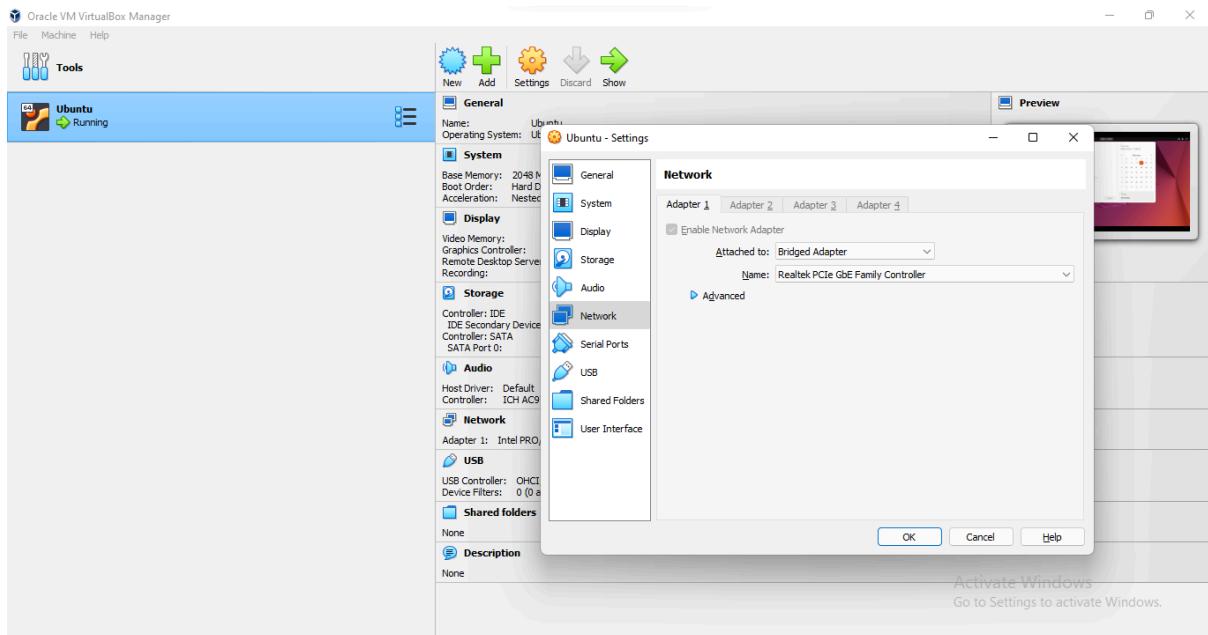


### Experiment No.: 3

Aim: To Connect OS to the network change network Mode to Bridge Adaptor



### INSTALLATION OF KVM:

Step 1: Firstly, update the repositories

**sudo apt update**

Step 2: To install CPU checker, run the following command

**sudo apt install cpu-checker**

Step 3: Then, install essential KVM packages with the following command:

**sudo apt install qemu-kvm libvirt-daemon-system libvirt-clients bridge-utils**

This will start the installation of four KVM packages:

```
ubuntu@Ubuntu:~$ sudo apt install cpu-checker
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
cpu-checker is already the newest version (0.7-1.3build1).
0 upgraded, 0 newly installed, 0 to remove and 55 not upgraded.
ubuntu@Ubuntu:~$ sudo apt install qemu-kvm libvirt-daemon-system libvirt-clients bridge-utils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'qemu-system-x86' instead of 'qemu-kvm'
bridge-utils is already the newest version (1.7-1ubuntu3).
libvirt-clients is already the newest version (8.0.0-1ubuntu7.8).
libvirt-daemon-system is already the newest version (8.0.0-1ubuntu7.8).
qemu-system-x86 is already the newest version (1:6.2+dfsg-2ubuntu6.16).
0 upgraded, 0 newly installed, 0 to remove and 55 not upgraded.
ubuntu@Ubuntu:~$ ^C
ubuntu@Ubuntu:~$
```

Step 4: Verify the Installation

1. Confirm the installation was successful by using the virsh command:

## **virsh list --all**

You can expect an output as seen below:

```
ubuntu@Ubuntu:~$ virsh list --all
error: failed to connect to the hypervisor
error: Failed to connect socket to '/var/run/libvirt/libvirt-sock': Permission
denied

ubuntu@Ubuntu:~$ ^C
ubuntu@Ubuntu:~$ sudo usermod -aG libvirt $USER
ubuntu@Ubuntu:~$ sudo usermod -aG libvirt $USER
ubuntu@Ubuntu:~$ sudo ls -l /var/run/libvirt/libvirt-sock
srw-rw---- 1 root libvirt 0 Feb  8 12:16 /var/run/libvirt/libvirt-sock
ubuntu@Ubuntu:~$ sudo chmod 777 /var/run/libvirt/libvirt-sock
ubuntu@Ubuntu:~$ sudo service libvirtd restart
ubuntu@Ubuntu:~$ virsh list --all
  Id  Name    State
  --  --
 -  win10   shut off
ubuntu@Ubuntu:~$
```

**OR**

2. Or use the **systemctl** command to check the status of libvirtd:  
**sudo systemctl status libvirtd**

If everything is functioning properly, the output returns an active (running) status



```
ubuntu@Ubuntu:~$ sudo systemctl status libvirtd
● libvirtd.service - Virtualization daemon
   Loaded: loaded (/lib/systemd/system/libvirtd.service; enabled; vendor pr
   Active: active (running) since Thu 2024-02-08 12:39:20 IST; 1min 20s ago
TriggeredBy: ● libvirtd.socket
   ○ libvirtd-admin.socket
   ○ libvirtd-ro.socket
   Docs: man:libvirtd(8)
         https://libvirt.org
 Main PID: 45834 (libvirtd)
   Tasks: 19 (limit: 32768)
  Memory: 10.8M
     CPU: 336ms
    CGroup: /system.slice/libvirtd.service
            └─45834 /usr/sbin/libvirtd

Feb 08 12:39:20 Ubuntu systemd[1]: Starting Virtualization daemon...
Feb 08 12:39:20 Ubuntu systemd[1]: Started Virtualization daemon.
Feb 08 12:39:20 Ubuntu libvirtd[45834]: libvirt version: 8.0.0, package: 1ubu
Feb 08 12:39:20 Ubuntu libvirtd[45834]: hostname: Ubuntu
Feb 08 12:39:20 Ubuntu libvirtd[45834]: Unable to open /dev/kvm: No such file o
Feb 08 12:39:21 Ubuntu libvirtd[45834]: Unable to open /dev/kvm: No such file o
lines 1-21/21 (END)
Press ENTER... Wait for the installation to finish
```

3. Press Q to quit the status screen.
4. If the virtualization daemon is not active, activate it with the following command:  
**sudo systemctl enable --now libvirtd**

## **CREATING A VIRTUAL MACHINE ON UBUNTU 20.04**

Step 1: Before you choose one of the two methods listed below, install virt-manager, a tool for

creating and managing VMs:

**sudo apt install virt-manager**

```
ubuntu@Ubuntu:~$ sudo apt install virt-manager
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
virt-manager is already the newest version (1:4.0.0-1).
0 upgraded, 0 newly installed, 0 to remove and 55 not upgraded.
ubuntu@Ubuntu:~$
```

Step 2: Type **Y** and press ENTER. Wait for the installation to finish.

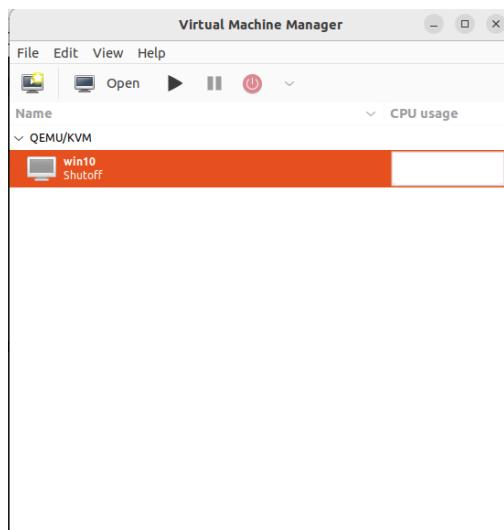
Make sure you download an ISO containing the OS you wish to install on a VM and proceed to pick an installation method.

### Method: Virt Manager GUI

1. Start virt-manager with:

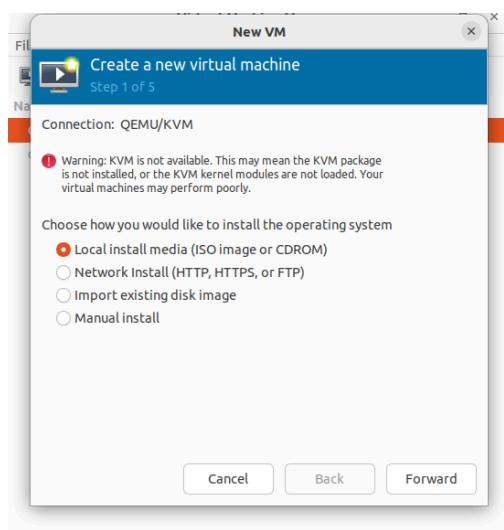
```
sudo virt-manager
```

2. In the first window, click the computer icon in the upper left corner.

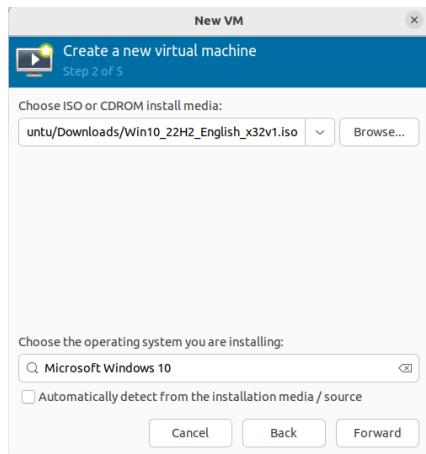


3. In the dialogue box that opens, select the option to install the VM using an ISO image.

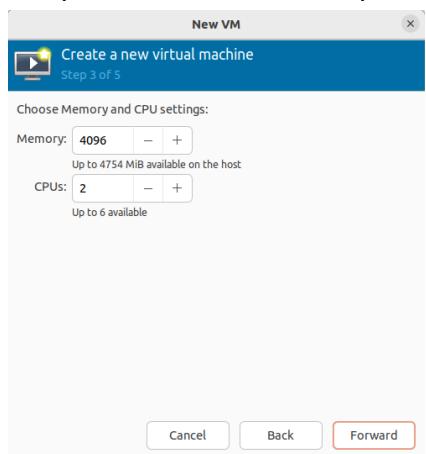
Navigate to the path where you stored the ISO you wish to install.  
Then click Forward.



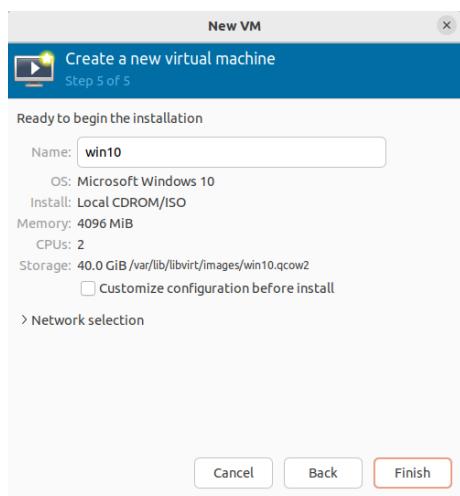
4. The ISO you chose in the previous window populates the field. Proceed by clicking Forward.

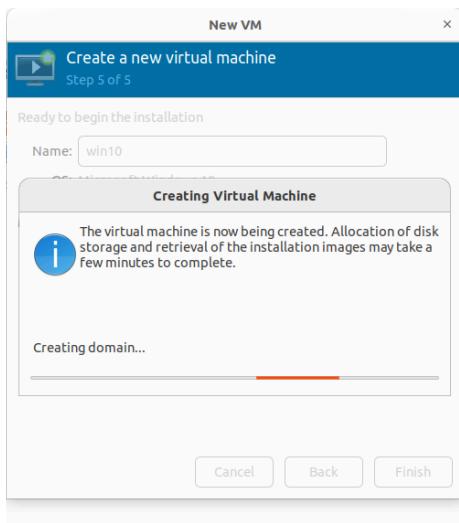


5. Enter the amount of RAM and the number of CPUs you wish to allocate to the VM and proceed to the next step.



6. Finish the installation





## 7. Verify that the virtual machine is running.

