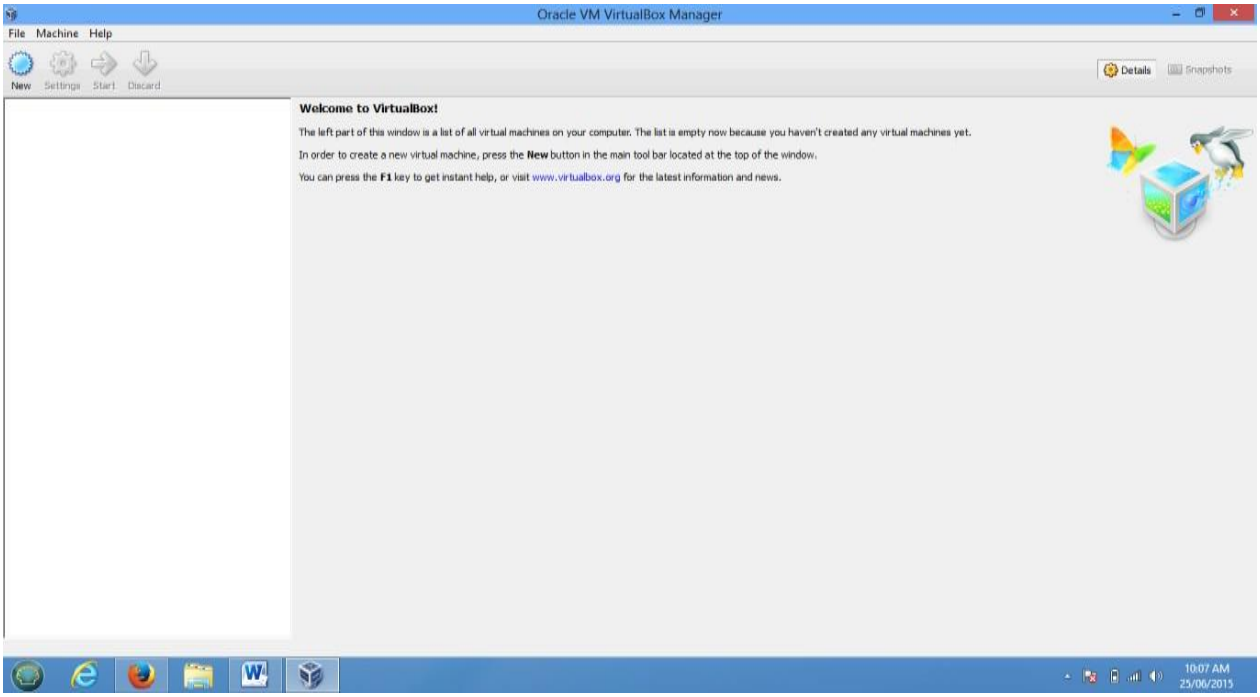
1. Hosted Virtualization on Oracle Virtual Box Hypervisor

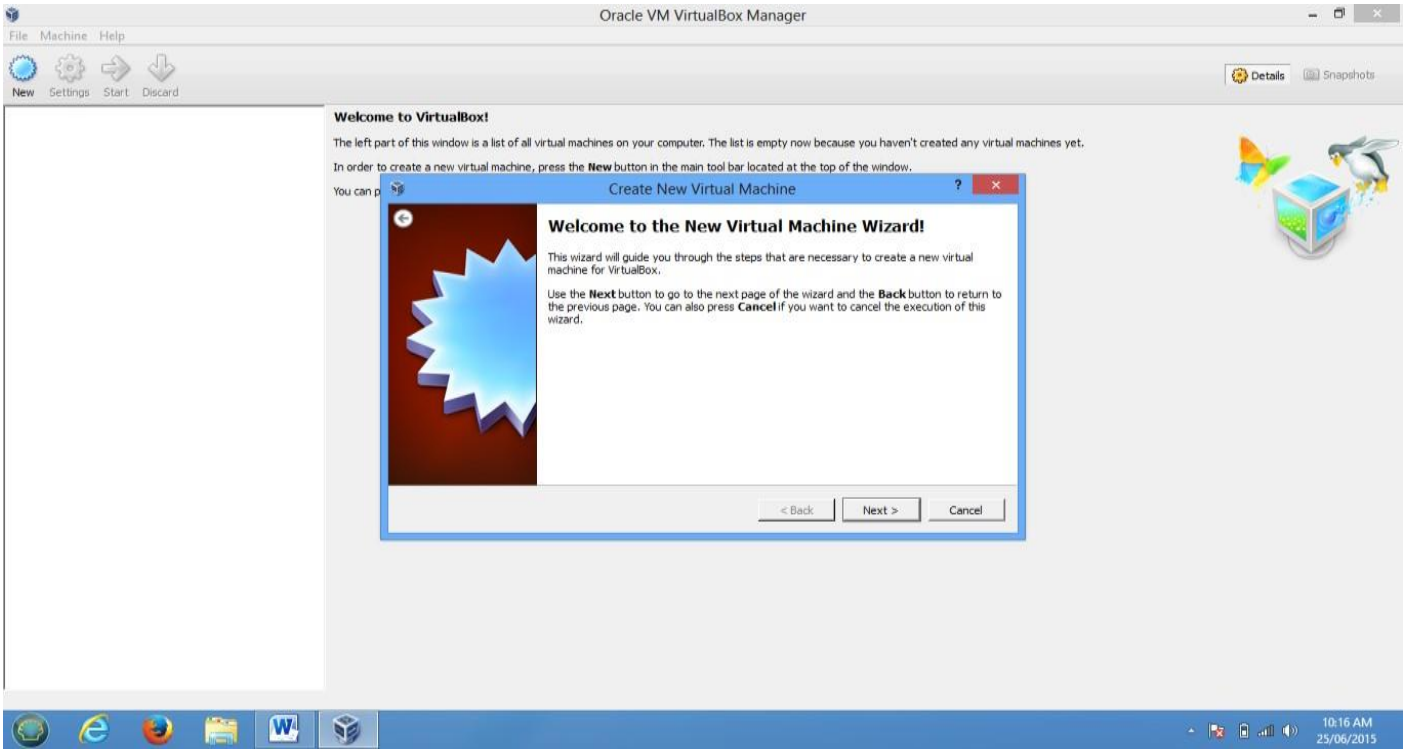
The Steps to Create and run Virtual machines in VirtualBox are as follows

STEP 1: Download Oracle Virtual box from https://www.virtualbox.org/wiki/Downloads

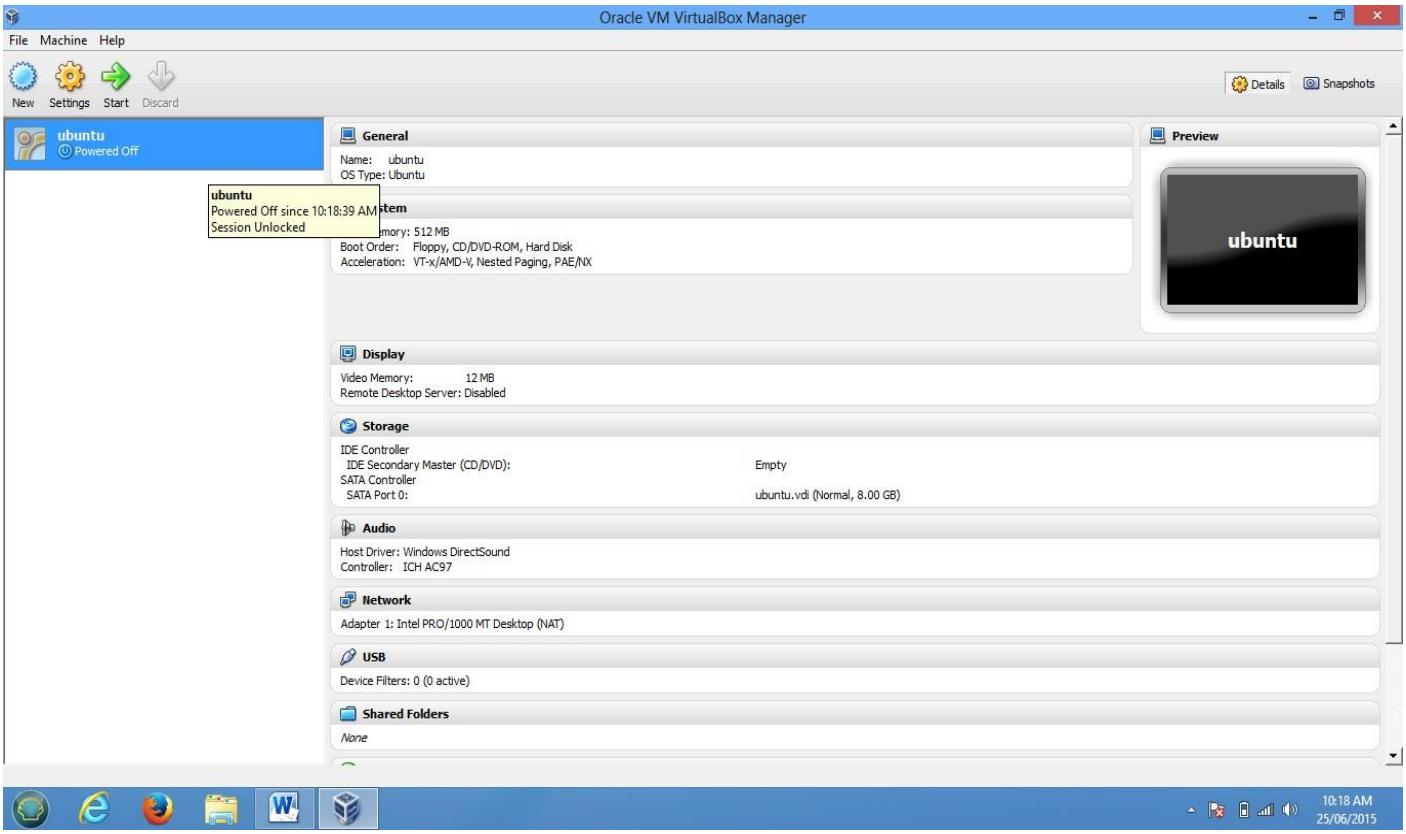
STEP 2: Install it in Windows, Once the installation has done open it.



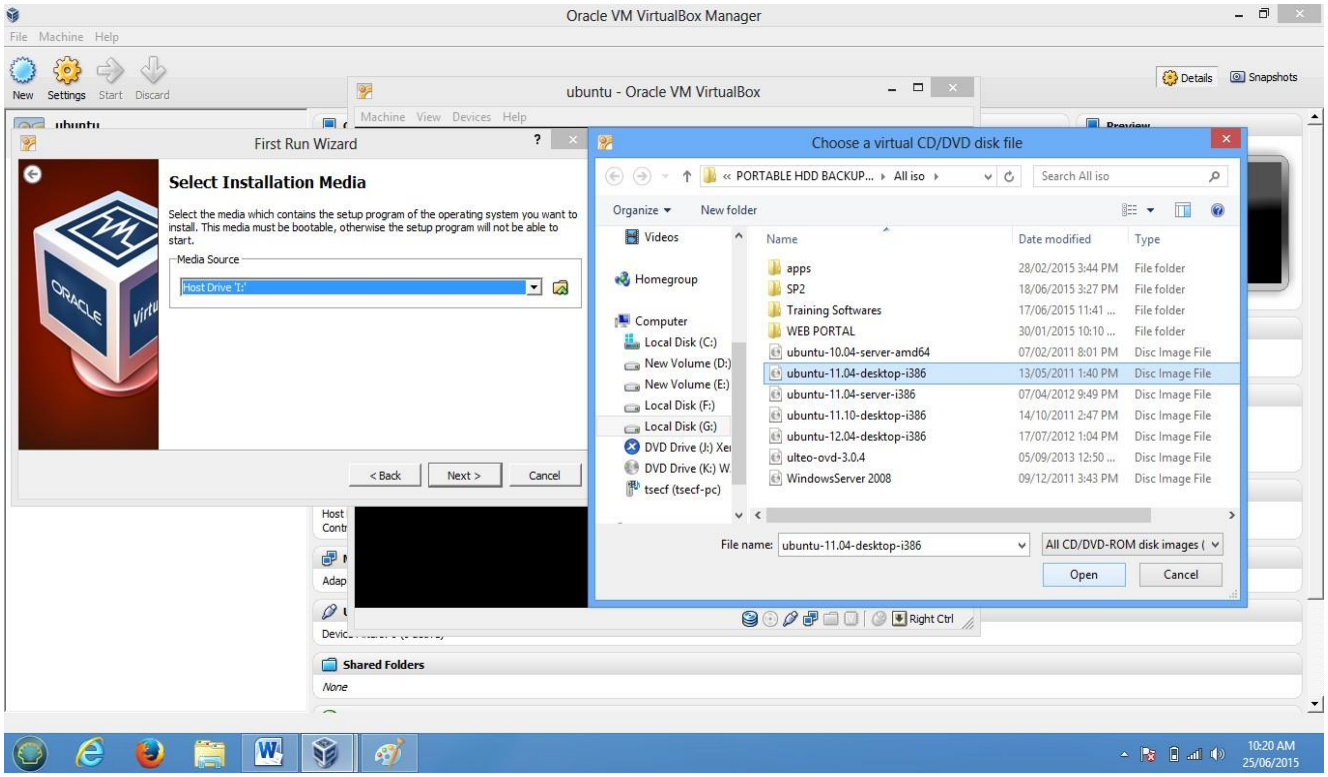
STEP 3: Create Virtual Machine by clicking on New



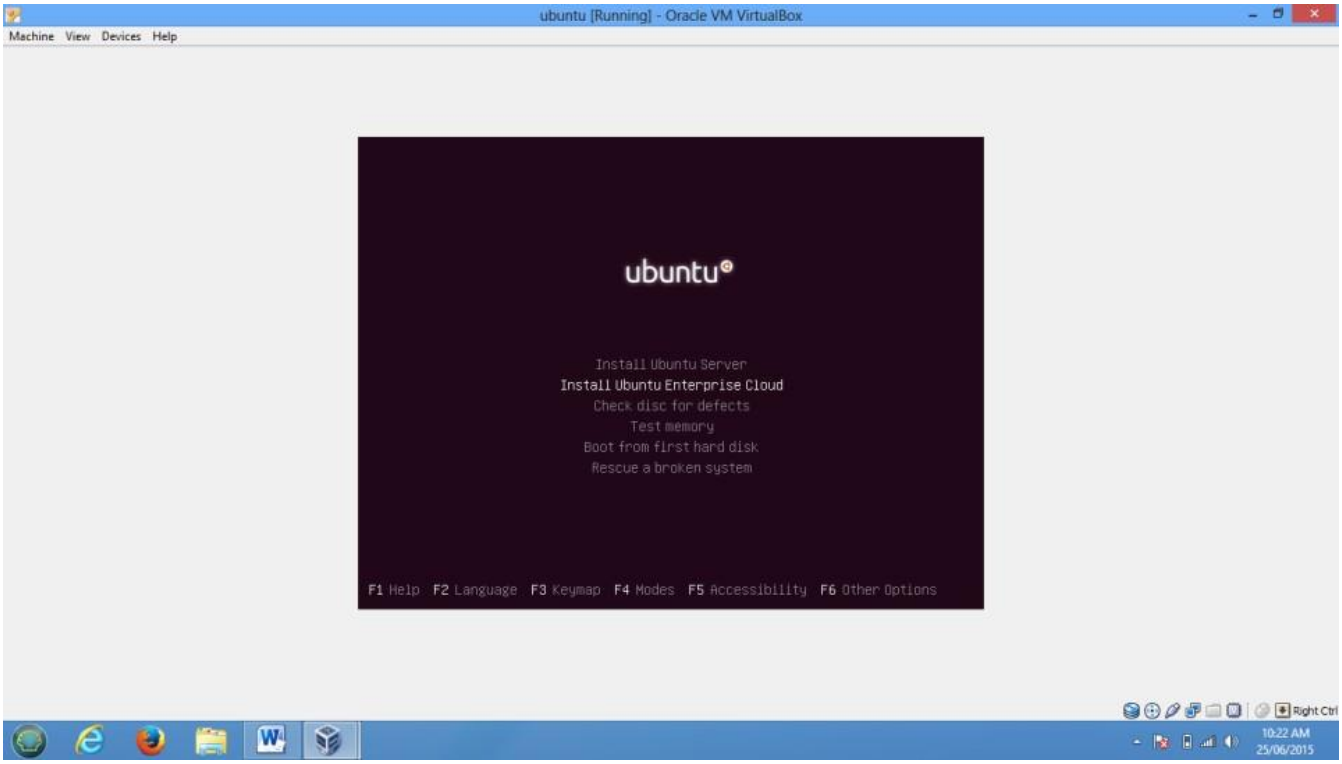
STEP 4: Specify RAM Size, HDD Size, and Network Configuration and Finish the wizard



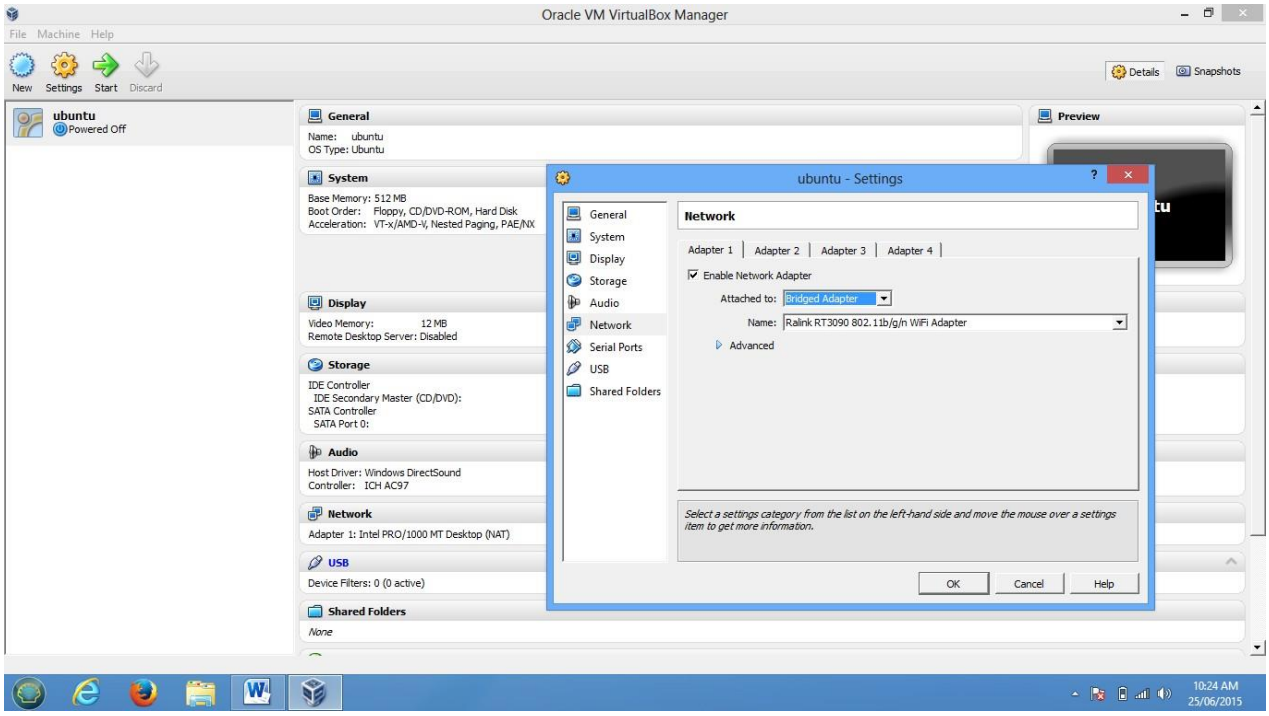
STEP 5: To Select the media for installation Click on start and browse for iso file



STEP 6: Complete the Installation and use it.



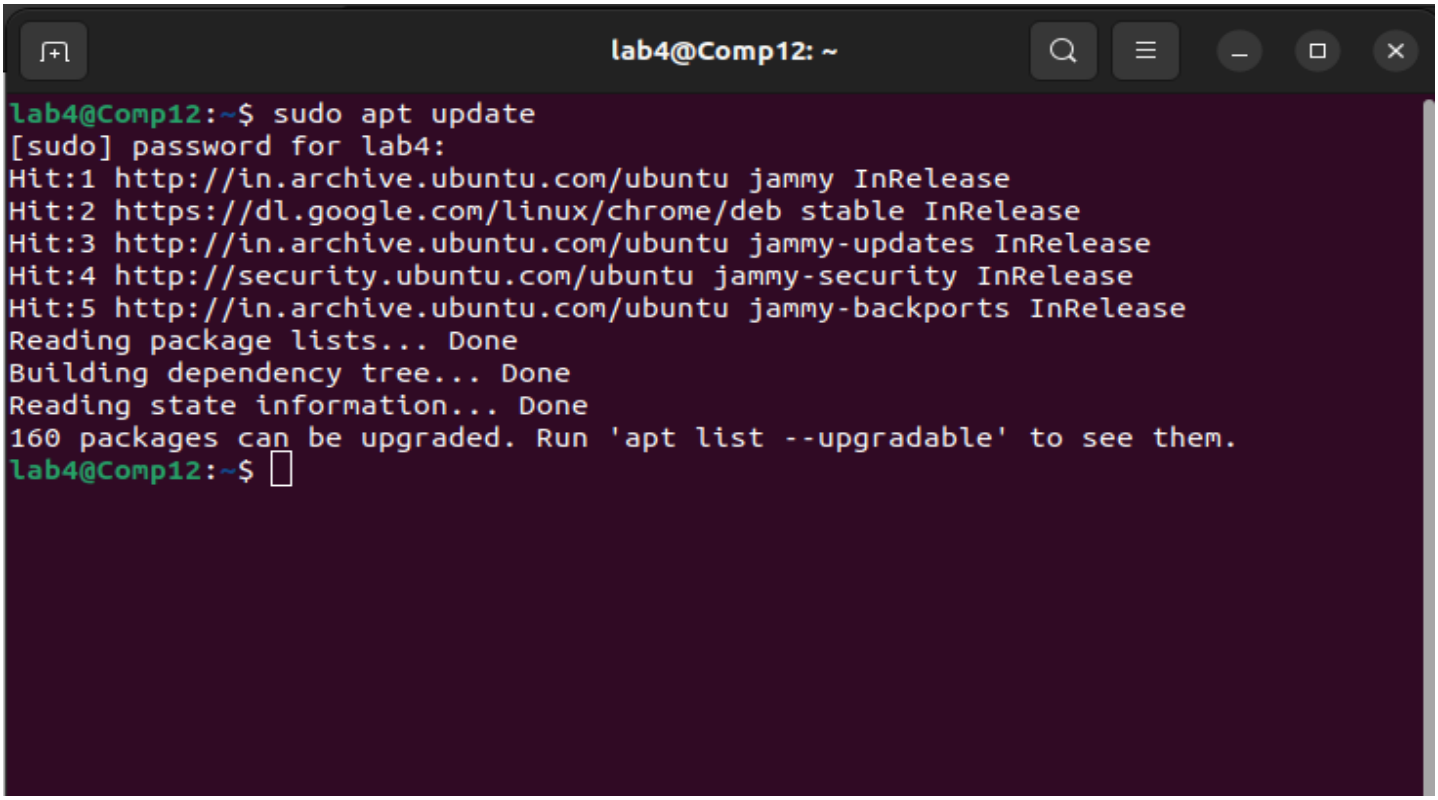
STEP 7: To Connect OS to the network change network Mode to Bridge Adaptor



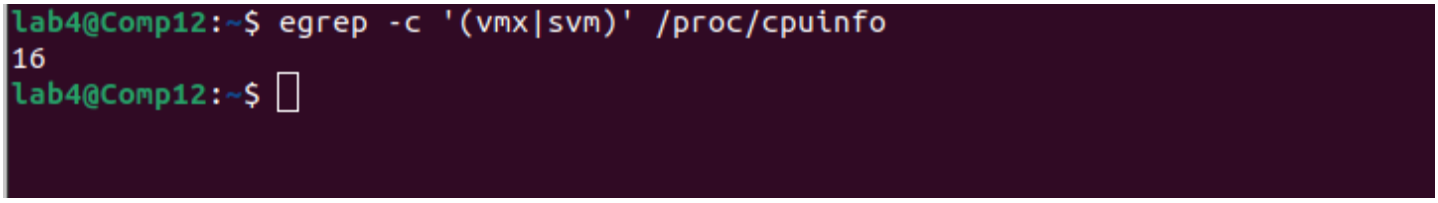
2. Hosted Virtualization on KVM Hypervisor

The Steps to Create and run Virtual machines in KVM are as follows

STEP 1



STEP 2



STEP 3

STEP 4

```
lab04@Comp09:~$ sudo apt install -y qemu-kvm virt-manager libvirt-daemon-system virtinst 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).
virt-manager is already the newest version (1:4.0.0-1).
virtinst is already the newest version (1:4.0.0-1).
libvirt-clients is already the newest version (8.0.0-1ubuntu7.4).
libvirt-daemon-system is already the newest version (8.0.0-1ubuntu7.4).
qemu-system-x86 is already the newest version (1:6.2+dfsg-2ubuntu6.6).
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libaacs0 libaom3 libass9 libavcodec58 libavformat58 libavutil56 libbdplus0 libblas3
  libbluray2 libbs2b0 libchromaprint1 libcodec2-1.0 libdav1d5 libflite1 libgme0 libgsm1 libgstreamer-plugins-bad1.0-0 liblilv-0-0 libmfx1
  libmysofa1 libnorm1 libopenmpt0 libpgm-5.3-0 libpostproc55 librabbitmq4 librubberband2 libserd-0-0 libshine3 libsnappy1v5 libsord-0-0
  libsratom-0-0 libsrt1.4-gnutls libssh-gcrypt-4 libswresample3 libswscale5 libudfread0 libva-drm2 libva-wayland2 libvdpau1 libvidstab1.1
  libx265-199 libxvidcore4 libzimg2 libzmq5 libzvbi-common libzvbi0 mesa-vdpau-drivers pocketsphinx-en-us vdpau-driver-all
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 144 not upgraded.
lab04@Comp09:~$
```

STEP 5

```
lab04@Comp09:~$ sudo systemctl enable --now libvirtd
```

STEP 6

```
lab04@Comp09:~$ sudo systemctl start libvirtd
```

STEP 7

```
lab04@Comp09:~$ sudo systemctl status libvirtd
● libvirtd.service - Virtualization daemon
     Loaded: loaded (/lib/systemd/system/libvirtd.service; enabled; vendor preset: enabled)
     Active: active (running) since Fri 2023-01-20 14:28:36 IST; 55min ago
TriggeredBy: ● libvirtd.socket
             ● libvirtd-admin.socket
             ● libvirtd-ro.socket
       Docs: man:libvirtd(8)
             https://libvirt.org
   Main PID: 867 (libvirtd)
      Tasks: 21 (limit: 32768)
     Memory: 17.4M
        CPU: 571ms
     CGroup: /system.slice/libvirtd.service
             ├─ 867 /usr/sbin/libvirtd
             ├─1174 /usr/sbin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq/default.conf --leasefile-ro --dhcp-script=/usr/lib/libvirt/libvirt>
             └─1175 /usr/sbin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq/default.conf --leasefile-ro --dhcp-script=/usr/lib/libvirt/libvirt>

Jan 20 14:28:36 Comp09 systemd[1]: Started Virtualization daemon.
Jan 20 14:28:42 Comp09 dnsmasq[1174]: started, version 2.86 cachesize 150
Jan 20 14:28:42 Comp09 dnsmasq[1174]: compile time options: IPv6 GNU-getopt DBus no-UBus i18n IDN2 DHCP DHCPv6 no-Lua TFTP conntrack ipset au>
Jan 20 14:28:42 Comp09 dnsmasq-dhcp[1174]: DHCP, IP range 192.168.122.2 -- 192.168.122.254, lease time 1h
Jan 20 14:28:42 Comp09 dnsmasq-dhcp[1174]: DHCP, sockets bound exclusively to interface virbr0
Jan 20 14:28:42 Comp09 dnsmasq[1174]: reading /etc/resolv.conf
Jan 20 14:28:42 Comp09 dnsmasq[1174]: using nameserver 127.0.0.53#53
Jan 20 14:28:42 Comp09 dnsmasq[1174]: read /etc/hosts - 7 addresses
Jan 20 14:28:42 Comp09 dnsmasq[1174]: read /var/lib/libvirt/dnsmasq/default.addnhosts - 0 addresses
Jan 20 14:28:42 Comp09 dnsmasq-dhcp[1174]: read /var/lib/libvirt/dnsmasq/default.hostsfile
lab04@Comp09:~$
```

STEP 8


lab04@Comp09:~$ sudo usermod -aG kvm $USER

STEP 9


lab04@Comp09:~$ sudo usermod -aG libvirt $USER
lab04@Comp09:~$