Name: Rohit Vilas Patil
Roll No.: 31353
Assignment : Virtualization using KVM (install and configure KVM)

Step 1: Check if system is compatible or not for virtualization
pict@pict-OptiPlex-9020:~$ egrep -c '(vmx|svm)' /proc/cpuinfo
16
pict@pict-OptiPlex-9020:~$ sudo kvm-ok
[sudo] password for pict:
INFO: /dev/kvm exists
KVM acceleration can be used
Step 2: Update Packages
pict@pict-OptiPlex-9020:~$ sudo apt update
Get:1 http://packages.microsoft.com/repos/code stable InRelease [3,569 B]
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:3 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu focal InRelease
Hit:5 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease
Fetched 117 kB in 1s (139 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
110 packages can be upgraded. Run 'apt list --upgradable' to see them.
Step 3: Install required packages

pict@pict-OptiPlex-9020:~$ sudo apt install qemu-kvm libvirt-daemon-system libvirt-clients bridge-utils

Reading package lists... Done
Building dependency tree

Reading state information... Done
bridge-utils is already the newest version (1.6-2ubuntu1).
libvirt-clients is already the newest version (6.0.0-0ubuntu8.16).
libvirt-daemon-system is already the newest version (6.0.0-0ubuntu8.16).
The following packages were automatically installed and are no longer required:
libfprint-2-tod1 libfwupdplugin1
Use 'sudo apt autoremove' to remove them.
Suggested packages:
samba vde2 qemu-block-extra
The following packages will be upgraded:
qemu-kvm qemu-system-data qemu-system-gui qemu-system-x86
4 upgraded, 0 newly installed, 0 to remove and 106 not upgraded.

Need to get 7,337 kB of archives.
After this operation, 0 B of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 qemu-system-data all 1:4.2-3ubuntu6.25 [563 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 qemu-kvm amd64 1:4.2-3ubuntu6.25 [13.1 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 qemu-system-x86 amd64 1:4.2-3ubuntu6.25 [6,721 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 qemu-system-gui amd64 1:4.2-3ubuntu6.25 [40.7 kB]
Fetched 7,337 kB in 6s (1,236 kB/s)
(Reading database ... 254793 files and directories currently installed.)
Preparing to unpack .../qemu-system-data_1%3a4.2-3ubuntu6.25_all.deb ...
Unpacking qemu-system-data (1:4.2-3ubuntu6.25) over (1:4.2-3ubuntu6.24) ...
Preparing to unpack .../qemu-kvm_1%3a4.2-3ubuntu6.25_amd64.deb ...
Unpacking qemu-kvm (1:4.2-3ubuntu6.25) over (1:4.2-3ubuntu6.24) ...

Preparing to unpack .../qemu-system-x86_1%3a4.2-3ubuntu6.25_amd64.deb ...
Unpacking qemu-system-x86 (1:4.2-3ubuntu6.25) over (1:4.2-3ubuntu6.24) ...
Preparing to unpack .../qemu-system-gui_1%3a4.2-3ubuntu6.25_amd64.deb ...
Unpacking qemu-system-gui:amd64 (1:4.2-3ubuntu6.25) over (1:4.2-3ubuntu6.24) ...
Setting up qemu-system-gui:amd64 (1:4.2-3ubuntu6.25) ...
Setting up qemu-system-data (1:4.2-3ubuntu6.25) ...
Setting up qemu-system-x86 (1:4.2-3ubuntu6.25) ...
Setting up qemu-kvm (1:4.2-3ubuntu6.25) ...
Processing triggers for desktop-file-utils (0.24-1ubuntu3) ...
Processing triggers for mime-support (3.64ubuntu1) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu1) ...
Processing triggers for man-db (2.9.1-1) ...
Step 4: Add currentuser in libvirt and kvm group
pict@pict-OptiPlex-9020:~$ sudo adduser 'pict' libvirt
The user `pict' is already a member of `libvirt'.
pict@pict-OptiPlex-9020:~$ sudo adduser 'pict' kvm
Adding user `pict' to group `kvm' ...
Adding user pict to group kvm
Done.
Step 5: check service status of Virtualization Daemon Service
pict@pict-OptiPlex-9020:~$ sudo systemctl status libvirtd
● libvirtd.service - Virtualization daemon
Loaded: loaded (/lib/systemd/system/libvirtd.service; enabled; vendor pres>
Active: active (running) since Thu 2023-04-20 11:05:39 IST; 36min ago
TriggeredBy: ● libvirtd.socket

● libvirtd-ro.socket
● libvirtd-admin.socket
Docs: man:libvirtd(8)
https://libvirt.org
Main PID: 876 (libvirtd)
Tasks: 19 (limit: 32768)
Memory: 39.7M
CGroup: /system.slice/libvirtd.service
├─ 876 /usr/sbin/libvirtd
├─1258 /usr/sbin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq/defa>
└─1259 /usr/sbin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq/defa>

Apr 20 11:05:42 pict-OptiPlex-9020 dnsmasq-dhcp[1258]: DHCP, sockets bound excl>
Apr 20 11:05:42 pict-OptiPlex-9020 dnsmasq[1258]: reading /etc/resolv.conf
Apr 20 11:05:42 pict-OptiPlex-9020 dnsmasq[1258]: using nameserver 127.0.0.53#53
Apr 20 11:05:42 pict-OptiPlex-9020 dnsmasq[1258]: read /etc/hosts - 7 addresses
Apr 20 11:05:42 pict-OptiPlex-9020 dnsmasq[1258]: read /var/lib/libvirt/dnsmasq>
Apr 20 11:05:42 pict-OptiPlex-9020 dnsmasq-dhcp[1258]: read /var/lib/libvirt/dn>
Apr 20 11:06:18 pict-OptiPlex-9020 dnsmasq[1258]: reading /etc/resolv.conf
Step 6: Install Virtual Manager
pict@pict-OptiPlex-9020:~$ sudo apt install virt-manager
Reading package lists... Done
Building dependency tree
Reading state information... Done
virt-manager is already the newest version (1:2.2.1-3ubuntu2.1).
The following packages were automatically installed and are no longer required:

libfprint-2-tod1 libfwupdplugin1
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 106 not upgraded.

Step 7: Launch Virtual manager and import ISO file to install Guest OS
pict@pict-OptiPlex-9020:~$ sudo virt-manager
[sudo] password for pict:
pict@pict-OptiPlex-9020:~$ virsh list -all
error: unexpected data '-all'
pict@pict-OptiPlex-9020:~$ virsh list --all
Id Name State
----
1 vm1 paused
2 fossapup running

New VM

Create a new virtual machine
Step 3 of 5

Choose Memory and CPU settings:

Memory: 1024   —   +

Up to 7857 MiB available on the host

CPUs: 1   —   +

Up to 8 available

Cancel   Back   Forward

New VM

Create a new virtual machine
Step 5 of 5

Ready to begin the installation

Name: ubuntu6.06-2

OS: Ubuntu 6.06 LTS
Install: Local CDROM/ISO
Memory: 1024 MiB
CPUs: 1
Storage: 20.0 GiB   /libvirt/images/ubuntu6.06-2.qcow2

☐ Customize configuration before install

▸ Network selection

Cancel   Back   Finish

ubuntu6.06-2 on QEMU/KVM

File   Virtual Machine   View   Send Key

ubuntu

Start or install Ubuntu
Start Ubuntu in safe graphics mode
Check CD for defects
Memory test
Boot from first hard disk

F1 Help F2 Language F3 Keymap F4 VGA F5 Accessibility F6 Other Options
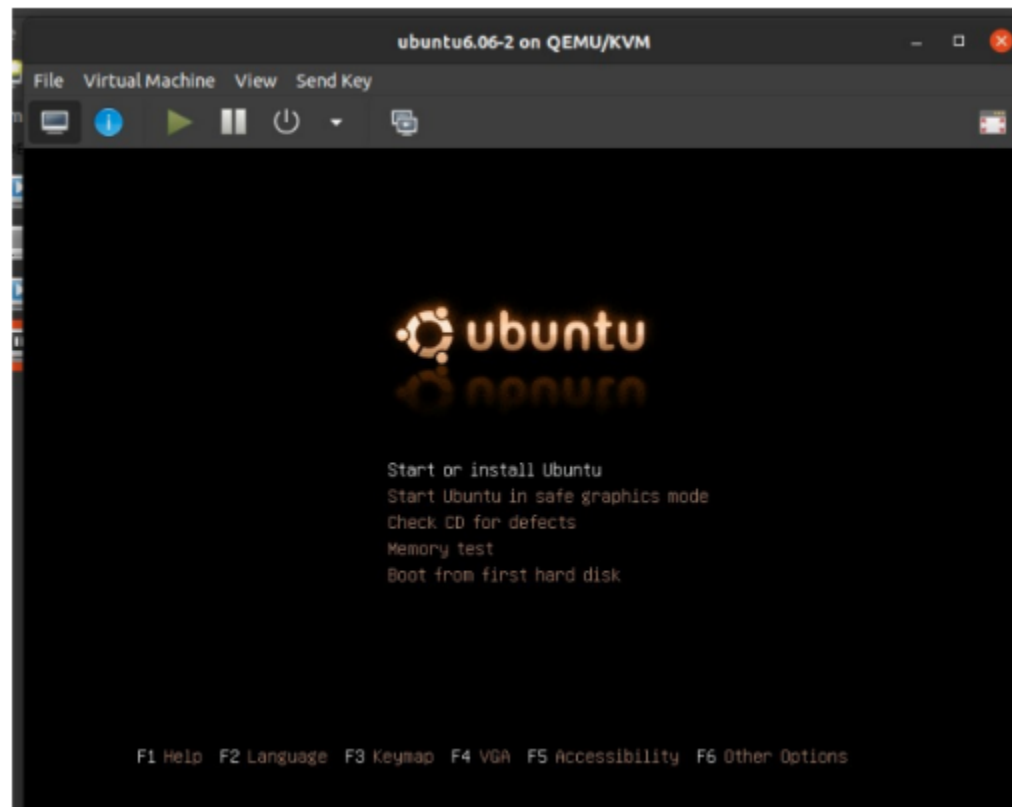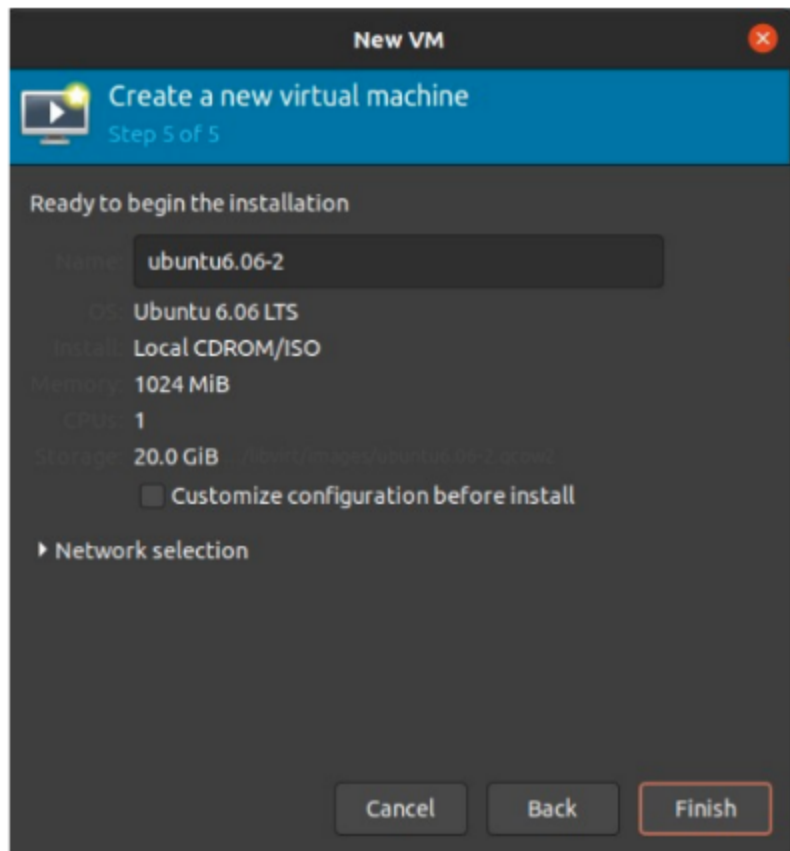
```
pict@pict-OptiPlex-9020:~$ virsh list --all
Id Name State
--------------------------------
1 vm1 paused
2 fossapup paused
5 ubuntu6.06-2 paused
- ubuntu6.06 shut off
```