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LP-II Mock Practical

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
```

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```
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

Fetchd 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](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](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](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](http://in.archive.ubuntu.com/ubuntu/focal-updates/main/amd64/qemu-system-gui)  
amd64 1:4.2-3ubuntu6.25 [40.7 kB]

Fetches 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 1 of 5

Connection: QEMU/KVM

Choose how you would like to install the operating system

☒ Local install media (ISO image or CDROM)

☐ Network Install (HTTP, HTTPS, or FTP)

☐ Network Boot (PXE)

☐ Import existing disk image

Cancel

Back

Forward

## New VM



### Create a new virtual machine

Step 2 of 5

Choose ISO or CDROM install media:

'pict/Downloads/ubuntu-6.06.1-desktop-i386.iso' ▼

Browse...

Choose the operating system you are installing:

Q Waiting for install media / source



☒ Automatically detect from the installation media / source

Cancel

Back

Forward

## New VM



### Create a new virtual machine

Step 3 of 5

Choose Memory and CPU settings:

Memory:

Up to 7857 MiB available on the host

CPUs:

Up to 8 available

Cancel

Back

Forward



## New VM



### Create a new virtual machine

Step 4 of 5

- ☒ Enable storage for this virtual machine
- ☒ Create a disk image for the virtual machine

20.0    —    +    GiB

873.6 GiB available in the default location

- ☐ Select or create custom storage

Manage...

Cancel

Back

Forward

## New VM



### Create a new virtual machine

Step 5 of 5

Ready to begin the installation

Name:

OS: Ubuntu 6.06 LTS

Install: Local CDROM/ISO

Memory: 1024 MiB

CPUs: 1

Storage: 20.0 GiB ../libvirt/images/ubuntu6.06-2.qcow2

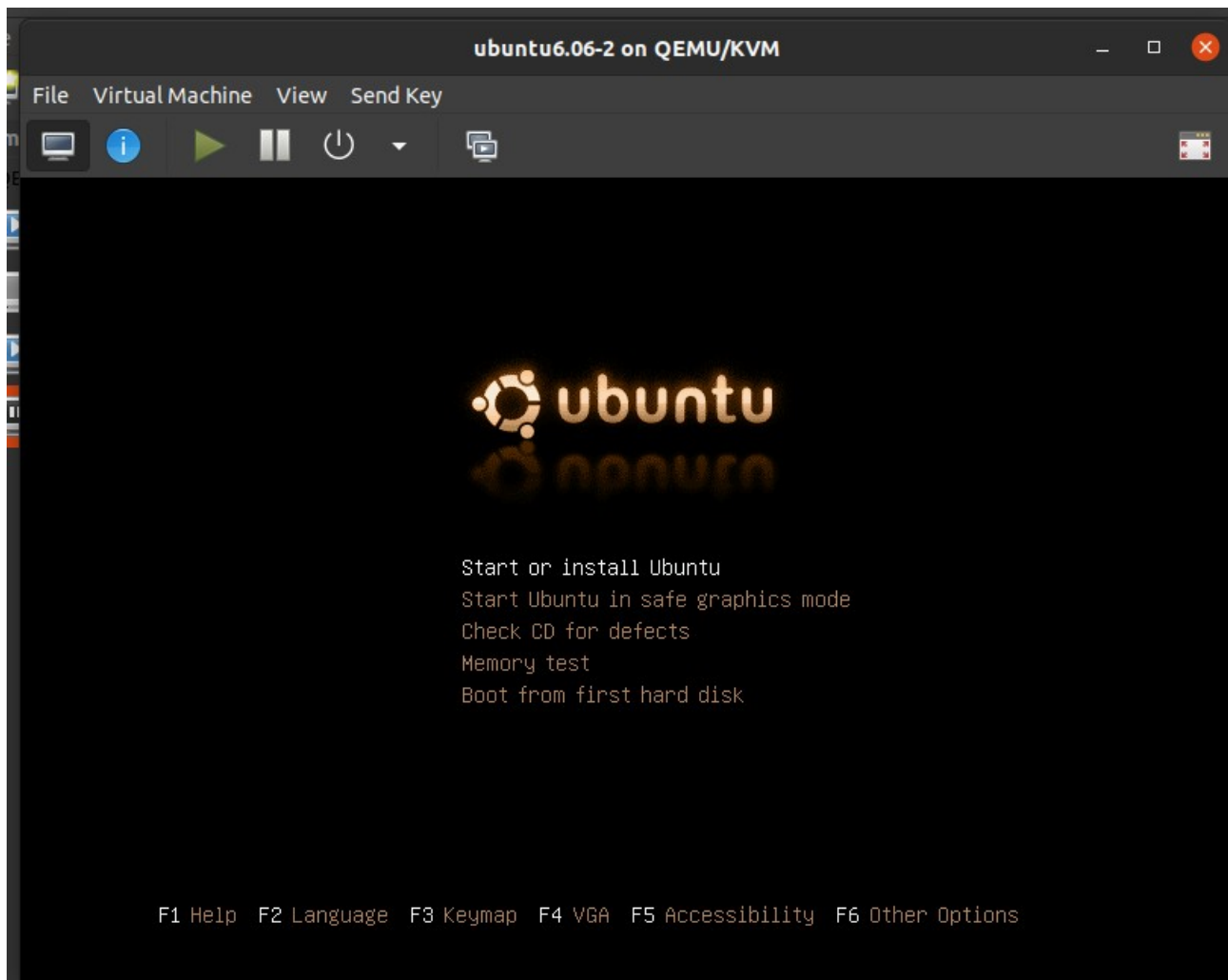
☐ Customize configuration before install

► Network selection

Cancel

Back

Finish



```
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