



KVM, Libvirt, VirtManager, OpenVswitch Installation & Configuration

= Installation of KVM Virtualization Packages

```
apt install -y qemu qemu-kvm libvirt-bin openvswitch-switch cpu-checker virt-manager qemu-utils \
ssh-askpass-gnome
```

Now run the following command to check the KVM option is enabled or disabled from BIOS

```
kvm-ok
```

Output should be as follows;

```
INFO: /dev/kvm exists
KVM acceleration can be used
```

If the output says otherwise, then we have to enable KVM option from BIOS (like enable VT-X or Intel Virtualization Technology)

It can be also checked with

```
egrep -c '(vmx|svm)' /proc/cpuinfo
```

If the value shows more than 1 then it means the system has support for virtualization.

Now check Libvirt service status.

```
service libvirtd status
```

= Prepare Virt-Manager for KVM

Network Preparation by open-vswitch,

To create bridge with OpenVswitch we have to identify ethernet interface name; Suppose, here it is **enp1s0**
You are suppose to already found it from Installation Session.

```
syntax      : ovs-vsctl add-br <bridge name>
syntax      : ovs-vsctl add-port <bridge name> <physical ethernet port name>
```

Run,

```
ovs-vsctl add-br bridge0
ovs-vsctl add-port bridge0 enp1s0
```

Now add the physical and bridge interface on a network startup script

```
vim /etc/network/if-up.d/netup-script.sh
#!/bin/bash
ip link set enp1s0 up
ip link set bridge0 up

chmod +x /etc/network/if-up.d/netup-script.sh
```

Now run the command from console,

```
ip link set enp1s0 up
ip link set bridge0 up
```

Now add the bridge created by OpenVswitch to libvirt.

```
vim /etc/network/bridge0.xml
```

```
<network>
  <name>bridge0</name>
  <forward mode='bridge' />
  <bridge name='bridge0' />
  <virtualport type='openvswitch' />
</network>
```

```
cd /etc/network/
```

```
virsh net-define bridge0.xml
```

```
virsh net-start bridge0
```

```
virsh net-autostart bridge0
```

Up the bridge and switch IP address from physical-interface to the bridge-interface.

```
ip link set bridge0 up
```

```
ifconfig enp1s0 0
```

```
ifconfig bridge0 192.168.108.11 netmask 255.255.255.0 up
```

```
ip route add default via 192.168.108.1 dev bridge0
```

Now modify the `/etc/network/interfaces` file to make the change permanently.

vim /etc/network/interfaces

The file need to be look like following

```
# interfaces(5) file used by ifup(8) and ifdown(8)

auto lo
iface lo inet loopback
    post-up /etc/network/if-up.d/netup-script.sh

auto enp1s0
iface enp1s0 inet manual

auto bridge0
iface bridge0 inet static
    address 192.168.108.11
    netmask 255.255.255.0
    gateway 192.168.108.1
```

= Prepare Content/Storage Location for Virt-Manager

```
mkdir /opt/iso  
mkdir /opt/kvm
```

Download an ISO image

```
cd /opt/iso  
wget -c http://192.168.108.8/iso/ubuntu-18.04-server-amd64.iso
```

Run **Virt-Manager** and **add iso & kvm** storage directory.
Create your first virtual machine.