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Installing and Configuring QEMU/KVM

This documentation will take you through installing and configuring QEMU/KVM. QEMU (Quick EMUlator) is an open-source machine emulator and virtualizer. It allows you to run operating systems and applications made for different hardware architectures on your computer.

NOTE: this step it important for setting up the splunk cluster because I will be virtualizing 3 different machines on the host that all work together to perform the required tasks in hand.

Step 1: Installing QEMU/KVM and Virt-Manager

open the terminal and run:

```
sudo apt update && sudo apt upgrade
sudo apt install qemu-kvm libvirt-client libvirt-daemon-system bridge-utils virt-manager
```

- **qemu-kvm:** the QEMU/KVM emulator with KVM support
- **libvirt-client & libvirt-deamon-system:** manages virtual machines
- **bridge-utils:** allows networking for VMs
- **virt-manager:** a GUI tool for managing Virtual machines

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Step 2: Verify Installation

check if KVM is enabled:

```
Kvm-ok
```

- if you see "KVM acceleration can be used", the host system supports KVM

check if QEMU service is running with the following commands:

```
systemctl stutas libvirtd
```

- if not, then run the following commands to start and enable QEMU at boot:

```
sudo systemctl start libvirt
sudo systemctl enable libvirt
```

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Step 3: Add your user to the libvirt group
to avoid using sudo every time, add yourself to the libvirt group with the following commands:

```
sudo usermod -aG libvirt $(whoami)
sudo usermod -aG kvm $(whoami)
```

- then restart your session by logging out and for setting to take effect

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Step 4: fix socket permissions
it's mostly likely that you will run into permission problems so run this command to fix that issues:

```
sudo chmod 777 /var/run/libvirt/libvirt-sock
```

- this command allows the user to be added to the group to access the libvirt socket
- the next step is to restart the libvirt service:

```
sudo systemctl restart libvirtd
```

- Now try to open the Virt-Manager:

```
virt-manager
```