KVM

Installation

Install all the required for the installation of Qemu, KVM hypervisor, and Libvirt

```
# apt install qemu-system libvirt-daemon-system qemu-utils virt-manager
```

- qemu-system: is an open source virtualizer that provides hardware emulation for the KVM hypervisor. It acts as a virtual machine monitor together with the KVM kernel modules, and emulates the hardware for a full system such as a PC and its associated peripherals.
- virt-manager: Virt-Manager is a graphical user interface (GUI) tool for managing virtual machines through libvirt-daemon.
- libvirt-daemon-system: provides API libraries that enables GUI apps such as virt-manager to communicate with libvirtd daemon, a system service libvirtd , and a virsh CLI tool
- qemu-utils: Various utilities e.g. for manipulating disk images
- virtinst: Allows to create Virtual Machines (VMs) from the command-line.

Verify that the virtualization daemon, libvritd-daemon, is operating before moving on. Execute the command to achieve this.

```
#  systemctl status libvirtd

Output:

● libvirtd.service - Virtualization daemon
     Loaded: loaded (/lib/systemd/system/libvirtd.service; enabled; preset:
enabled)
     Active: active (running) since Sun 2023-08-06 10:57:02 CEST; 1min 30s
ago
TriggeredBy: ● libvirtd-ro.socket
             ● libvirtd-admin.socket
             ● libvirtd.socket
       Docs: man:libvirtd(8)
             https://libvirt.org
   Main PID: 7999 (libvirtd)
      Tasks: 19 (limit: 32768)
     Memory: 15.7M
        CPU: 188ms
     CGroup: /system.slice/libvirtd.service
             └─7999 /usr/sbin/libvirtd --timeout 120
Aug 06 10:57:02 pcwerkkamer systemd[1]: Starting libvirtd.service -
Virtualization daemon...
Aug 06 10:57:02 pcwerkkamer systemd[1]: Started libvirtd.service -
Virtualization daemon.
```

Check if libvirtd service will start automatically at boot time.

```
# systemctl is-enabled libvirtd

Output:
enabled
```

If disabled run the following command to have it boot automatically:

```
# systemctl enable --now libvirtd
```

Use the following command to determine whether the KVM modules are loaded:

```
$ lsmod | grep -i kvm
kvm_intel             380928  0
kvm                  1142784  1 kvm_intel
irqbypass              16384  1 kvm
```

Configuration

In order to manage virtual machines as a regular user, that user needs to be added to the libvirt group:

```
# adduser <youruser> libvirt
```