

# Headless Linux KVM

Presentation by Wyatt Zacharias  
2023



Except where otherwise noted this work is licensed under the Creative Commons Attribution-ShareAlike 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/4.0/>.

# Isn't Headless Normal?

while most of us are accustomed to spending most of our day in an SSH/Terminal session, the KVM FAQ thinks otherwise...

---

How do I use KVM on a headless machine (without a local GUI?)

Install a management tool such as virt-manager on a remote machine.

---

From:

[https://www.linux-kvm.org/page/FAQ#How do I use KVM on a headless machine .28without a local GUI.3F.29](https://www.linux-kvm.org/page/FAQ#How_do_I_use_KVM_on_a_headless_machine_28without_a_local_GUI.3F.29)

# KVM, QEMU, Libvirt?

- KVM is primarily a kernel module to provide hardware acceleration for virtual machines.
- QEMU provides the userspace functions to virtualize devices such as disks and networks.
- libvirt abstracts QEMU and other virtualization tools to provide universal configuration and management of VMs.

# Packages

- **kvm** - Kernel module is included in the mainline kernel.
- **qemu-kvm** - QEMU driver for KVM.
- **libvirt-daemon** - Daemon to handle creation and booting VMs.
- **libvirt-daemon-system** - SystemD units for libvirt-daemon.
- **libvirt-clients** - Command line tools to interact with libvirtd.
- **virtinst** - Command line tools to create libvirt domains.

# libvirtd

- Does the heavy lifting for us and provisions virtual machines/networks as required.
- Defines virtual machines (domains) in a standard XML format
- Defines virtual networks with the flexibility of host-only, bridged, or nat routing.

# OS Install

- Most distro ISOs do not automatically support a serial console for the installer.
- Anaconda (used by many EL distros) supports a text installer through a serial console.
- Distros do not set their Kernel to use a serial console. This needs to be added to the boot options.
- virt-install can only set kernel options when a kernel image is provided.
- Other workarounds: use VNC or rebuild your ISO with the right boot options.

# Demo

Lets see it in action