oVirt in a Home Lab

Also on a laptop
Paul Staniforth

Leeds Beckett University

Networked Systems Analyst
Working in the BEC school
Why run a home lab?

- Working from home
- Checking out new ideas
- Reduced policy requirements
- Network requirements
Using a Laptop

- All in one solution
- Mobile
- standalone
- Demonstration purposes
Bare Metal or Virtual

- Running on Hardware
- Nested Virtualised system
- Hybrid model
Hardware Requirements

- Memory
- CPU
- Storage
- Networking
Automation and Provisioning

- Use a solution that works for baremetal and Virtual.
- Ansible
- Puppet
- scripting/python
- Foreman/Katello
- RH Satelite
- manageiq
Virtual Solutions

- Libvirt
- Nested Virtualisation
- Vmware
- Azure
- VirtualBox
Networking

- Isolated network
- Separate Segment
- Try to not interfere with rest of the household network.
- VLAN switch if possible
- Laptop can work without extra hardware using NAT
Solution based on KVM and Libvirt

- Free and Open Source
- uses same tech as oVirt
- quite easy to automate
- Familiar to Linux users
- Can use different tools
  - virt-manager
  - machines in cockpit
  - virsh command line
Requirements to run nested.

- Turn on Nested virtualisation
- Turn on hardware Virtualisation in BIOS
- Turn on Nested Virtualisation in Kernal
- Enable Virtualisation in oVirt nodes

```bash
cat /sys/module/kvm_intel/parameters/nested
N  # or 0 disabled
vi /etc/modprobe.d/kvm.conf
# uncomment either of the line
# for Intel CPU, select [kvm_intel], for AMD CPU, select [kvm_amd]
options kvm_intel nested=1
#options kvm_amd nested=1
modprobe -r kvm_intel
modprobe kvm_intel
cat /sys/module/kvm_intel/parameters/nested
Y  # or 1 just enabled

virsh edit centos8
<cpu mode='host-model'>
Components required

- Networking
  - Bridged
  - Nat
- DNS
  - Separate server
  - Libvirt dnsmasq
- Storage
  - Libvirt pools
  - Libvirt volumes
  - NAS or SAN
Storage Domains

- Can be on the Host server
  - Libvirt has a firewall zone by default
- Could be external
  - Use bridged networking
- Could be on virtual nodes
  - NFS
  - iSCSI
  - Gluster
Demo next
Thanks for watching my presentation

p.staniforth@leedsbeckett.ac.uk