Installing vWLC and KVM with Ubuntu

This chapter contains the following topics:

Installing Ubuntu and KVM

To install Ubuntu and KVM, perform the following steps:

Step 1 Install Ubuntu Server 13.10 or later, select virtualization module/package during installation.

Step 2 Install QEMU/KVM/Open vSwitch packages:

```
apt-get install qemu-kvm qemu-utils uml-utilities bridge-utils socat vnc4server vncviewer
apt-get install kvm libvirt-bin virtinst
apt-get install openvswitch-controller  openvswitch-switch openvswitch-datapath-source
```

Step 3 Start the open vswitch service.

```
service openvswitch-switch start
```

Step 4 Reboot the system.

One Time Network Configuration on Ubuntu

To execute one time network configuration on Host Linux, perform the following steps:

Step 1   Create two open vswitch bridges and map eth0, eth1 to the corresponding bridges:

```
ovs-vsctl add-br ovsbr0 [bridge name]
ovs-vsctl add-port ovsbr0 eth0
ovs-vsctl add-br ovsbr1[bridge name]
ovs-vsctl add-port ovsbr1 eth1
ovs-vsctl set bridge ovsbr1 other-config:forward-bpdu=true [Required for CDP packets forwarding from
 Open Vswitch]
```

Step 2   To define a management network, create an XML file [mgmt.xml] as follows:

```
<network>
  <name>VM-Mgmt-Nw</name>
  <forward mode='bridge'/>
  <bridge name='ovsbr'/>
  <virtualport type='openvswitch'/>
    <!--
      If the linux host port[For eg, eth1] is connected in trunk mode to the
      downstream switch[which is also connected to the openvswitch bridge ovsbr],
      then by choosing the following portgroup,traffic from all vlan is passed up
      to the vWLC.The management interface should be in vlan tagged mode. And
      multiple interfaces can also be created with different vlans.
      If the linux host port is connected in untagged mode to the downstream switch,
      then on choosing this portgroup,untagged frames are passed up to the vWLC.
      Hence management interface has to be untagged.
    -->
    <portgroup name='default-portgroup' default='yes'>
    </portgroup>
  <!--
      If the linux host port is connected in trunk mode to the downstream switch
      [which is also connected to openvswitch bridge ovsbr],and if only certain
      vlans are to be allowed, choose this portgroup.
      Uncomment the following portgroup and edit the tag ids to the vlans allowed.
      You are free to add as many vlan ids as needed.
    -->
    <!--
    <portgroup name='Management-Portgroup'>
      <vlan trunk='yes'>
        <tag id='4092'/>
        <tag id='4093'/>
      </vlan>
    </portgroup>
    -->
</network>
```

Note   Edit the vlan tags as per requirement.

Step 3   Run the following commands to create the management network:

```
virsh net-define mgmt.xml
virsh net-start  VM-Mgmt-Network
```

Step 4 Repeat step 2 for creating a service port network. To define the service port network, create an XML file [service.xml] as follows:

```
<network>
  <name>VM-SP-Nw</name>
  <forward mode='bridge'/>
  <bridge name='ovsbr'/>
  <virtualport type='openvswitch'/>
    <!--
        If this portgroup is chosen, it is presumed that the linux host port
        [For eg :eth0, connected to the openvswitch bridge "ovsbr"] is connected in access
        mode to the neighboring switch.
    -->
    <portgroup name='default-portgroup' default='yes'>
    </portgroup>
  <!--
        If the same linux host port[connected to the openvswitch bridge "ovsbr"]
        as that of management interface is mapped to Service interface in vWLC
        and if the linux host port is in trunk mode ,then choose the following
        portgroup to have untagged packets for service port access.
        Uncomment the following portgroup and create the network.
        Also, edit the native-vlan as per your network settings.
    -->
    <!--
    <portgroup name='Service-portgroup'>
      <vlan>
        <vlan mode='native-untagged'/>
          <tag id='4094'/>
      </vlan>
    </portgroup>
    -->
</network>
```

Note Edit the vlan tags as per requirement.

Step 5 Run the following commands to create the service network:
```
 virsh net-define mgmt.xml
 virsh net-start  VM-Service-Network
```

Step 6 Check the virtual network status by using the following command:
```
virsh net-list --all
```
All the created networks are listed as active.

Launching vWLC Using VMM

To launch vWLC using VMM, perform the following steps:

✎

Note This is similar to installation using Fedora.

Step 1 Launch Virtual Machine Manager (VMM):

a) Launch VMM from GUI or type **virt-manager** from shell.
The GUI takes you through the following steps to create the vWLC instance easily.
b) Choose an ISO image.
c) Choose Memory = 4 GB.
d) Choose CPU = 1.
e) Provide a qcow2 image or raw image.
f) Click **Customize configuration before install**.
g) Click **NIC**, change device model to **virtio**, and change host device to **VM-Service-Network**.
h) Click **Add hardware**.
i) In the new window, click **Network**, and change host device to **VM-Mgmt-network** and device model to **virtio**.
j) Click **Begin installation**.

Step 2 From the command prompt, vWLC can be instantiated from shell as well with the following command (modify the filename and path as needed):

```
virt-install --connect=qemu:///system --network=network:VM-Service-network,model=virtio
--network=network:VM-Mgmt-network,model=virtio --name=vm1
--cdrom=/home/user/vWLC/images/<AS_CTVM_8_1_xx_xx.iso> --disk path=/var/lib/libvirt/images/4.img,size=8
--ram 2048 --vcpus=1 --vnc --vncport=5926
```

Accessing vWLC

Virtual WLC (vWLC) can be accessed in following ways:

Step 1 virsh console <Virtual Machine name>

Step 2 VNCviewer: For example, check the VNC details of vWLC through"virsh vncviewer <VirtualMachine name>" and then use that VNC connection details and access vWLC as "vncviewer 127.0.0.1:11".

Step 3 Console from VMM.