VxLAN and HW-VTEP configuration example

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Figure 1.1. VNI and VLAN mapping in VTEP
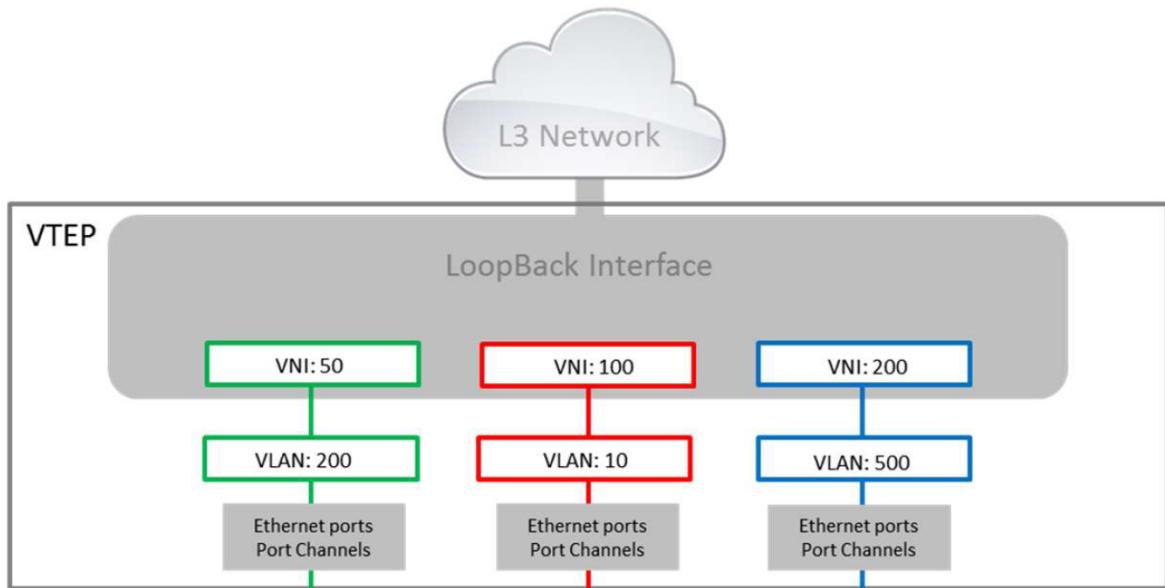
1.1. Configuration example

Figure 1.2. VTEP1 to VTEP2
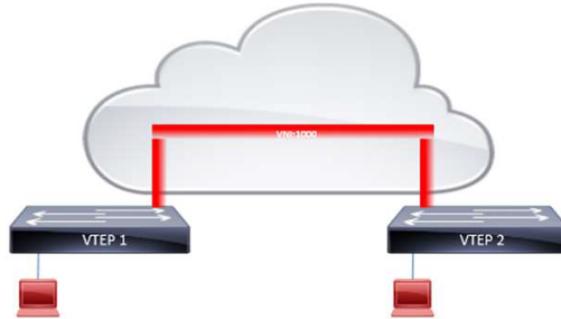
1.1.1. Configure VTEP 1:

Setting loopback interface 1 as VxLAN source interface.

```
switch# configure terminal
switch(config)# vxlan source-interface loopback 1
```

Configure IP address of loopback interface 1.

```
switch(config)# interface loopback 1
switch(config-loopback-if)# ip address 1.1.1.1/32
```

Create VLAN 100 and VNI 1000, binding VLAN 100 to VNI 1000

```
switch(config)# vlan 100
switch(config-vlan)# no shutdown
switch(config-vlan)# exit
switch(config)# vni 1000
switch(config-vni)# vlan 100
```

Configure interface 1 to VLAN access mode and access VLAN to 100

```
switch(config)# interface 1
switch(config-if)# no routing
switch(config-if)# vlan access 100
```

Create VxLAN tunnel 1 and binding to VNI 1000

```
switch(config)# interface tunnel 1 mode vxlan
switch(config-vxlan-if)# vxlan-vni 1000
switch(config-vxlan-if)# destination ip 2.2.2.2
```

Configure default route to destination IP 2.2.2.2.

```
switch(config)#interface 49
switch(config-if)#no shutdown
switch(config-if)#autonegotiation off
switch(config-if)#ip address 192.168.1.1/24
```

```
switch(config-if)#exit
switch(config)#ip route 0.0.0.0/0 192.168.1.2
```

1.1.2. Configure VTEP 2:

Setting loopback interface 1 as VxLAN source interface.

```
switch# configure terminal
switch(config)# vxlan source-interface loopback 1
```

Configure IP address of loopback interface 1.

```
switch(config)# interface loopback 1
switch(config-loopback-if)# ip address 2.2.2.2./32
```

Create VLAN 100 and VNI 1000, binding VLAN 100 to VNI 1000

```
switch(config)# vlan 100
switch(config-vlan)# no shutdown
switch(config-vlan)# exit
switch(config)# vni 1000
switch(config-vni)# vlan 100
```

Configure interface 1 to VLAN access mode and access VLAN to 100

```
switch(config)# interface 1
switch(config-if)# no routing
switch(config-if)# vlan access 100
```

Create VxLAN tunnel 1 and binding to VNI 1000

```
switch(config)# interface tunnel 1 mode vxlan
switch(config-vxlan-if)# vxlan-vni 1000
switch(config-vxlan-if)# destination ip 1.1.1.1
```

Configure default route to destination IP 2.2.2.2.

```
switch(config)#interface 49
switch(config-if)#no shutdown
switch(config-if)#autonegotiation off
switch(config-if)#ip address 192.168.1.2/24
switch(config-if)#exit
switch(config)#ip route 0.0.0.0/0 192.168.1.1
```

Chapter 2. HW-VTEP configuration

2.1. Application example

Setting loopback interface 1 as VxLAN source interface.

```
switch# configure terminal
switch(config)# vxlan source-interface loopback 1
```

Configure IP address of loopback interface 1.

```
switch(config)# interface loopback 1
switch(config-loopback-if)# ip address 1.1.1.1/32
```

Set interface 1 and as access port

```
switch(config)# interface 1
switch(config-if)# no shutdown
switch(config-if)# no routing
switch(config-if)# interface 2
switch(config-if)# no shutdown
switch(config-if)# no routing
```

Configure default route

```
switch(config)#interface 49
switch(config-if)#no shutdown
switch(config-if)#autonegotiation off
switch(config-if)#ip address 192.168.1.1/24
switch(config-if)#exit
switch(config)#ip route 0.0.0.0/0 192.168.1.2
```

Configure VXLAN via tool 'vtep-ctl' in Linux shell

```
root@switch:~# vtep-ctl add-ls ls0
root@switch:~# vtep-ctl set Logical_Switch ls0 tunnel_key=1000
```

Check vxlan status with command "show vxlan" in vtysh

```
switch# show vxlan
VxLAN source interface: lo1
VxLAN source IP address: 1.1.1.1
VNID VLAN Tunnel Remote VTEP
----------------------------------------------
1000 N/A
```

Add three remote mac address and binding to remote tunnel

```
root@switch:~#vtep-ctl add-ucast-remote ls0 00:00:00:00:00:aa 2.2.2.2
root@switch:~#vtep-ctl add-ucast-remote ls0 00:00:00:00:00:ab 2.2.2.2
root@switch:~#vtep-ctl add-ucast-remote ls0 00:00:00:00:00:ac 2.2.2.3
```

Check VXLAN tunnel status with command 'show vxlan tunnel' in vtysh

```
switch# show vxlan tunnel
```

```
Tunnel VNID Local IP Remote IP Status
----------------------------------------------------------------
tunnel1 1000 1.1.1.1 2.2.2.2 up
tunnel2 1000 1.1.1.1 2.2.2.3 up
```

Check VXLAN tenant system status with command 'show vxlan tenant-system' in vtysh

```
switch# show vxlan tenant-system
Number of MAC addresses : 3
MAC Address VNID Type Port
-------------------------------------------------------
00:00:00:00:00:ab 1000 hw-vtep tunnel1
00:00:00:00:00:aa 1000 hw-vtep tunnel1
00:00:00:00:00:ac 1000 hw-vtep tunnel2
```

Binding port 1 to vlan 100 and vnid 1000

```
root@switch:~# vtep-ctl bind-ls switch 1 100 ls0
```

Check VXLAN status with command 'show vxlan' in vtysh

```
switch# show vxlan
VxLAN source interface: lo1
VxLAN source IP address: 1.1.1.1
VNID VLAN Tunnel Remote VTEP
----------------------------------------------
1000 100 tunnel1 2.2.2.2
tunnel2 2.2.2.3
```

Insert un-tagged packet to interface 1

After inserting un-tagged packet to interface 1, check VXLAN tenant-system with command 'show vxlan tenant-system" in vtysh

```
root@switch:~# vtysh
switch# show vxlan tenant-system
Number of MAC addresses : 7
MAC Address VNID Type Port
-----------------------------------------------------------
00:00:00:00:00:ab 1000 hw-vtep tunnel1
00:00:00:00:00:aa 1000 hw-vtep tunnel1
00:00:00:00:00:de 1000 vxlan 1
00:00:00:00:00:dd 1000 vxlan 1
00:00:00:00:00:ac 1000 hw-vtep tunnel2
00:00:00:00:00:df 1000 vxlan 1
```

Check hardware_vtep db Ucast_Macs_Local table

```
root@switch:~# ovsdb-client dump hardware_vtep Ucast_Macs_Local
Ucast_Macs_Local table
MAC _uuid ipaddr locator
logical_switch
------------------- ------------------------------------- ------
"00:00:00:00:00:dd" 36616e07-d0ff-4296-bd9e-a86260af5533 ""
```

```
274589f8-1e9c-47ac-aaee-e733aca3bcc3  834a056f-cd6b-4587-b8b7-be3b2aedd940
"00:00:00:00:00:de" ced9c40d-3c4a-4b69-ad47-1f29596fdead ""
274589f8-1e9c-47ac-aaee-e733aca3bcc3 834a056f-cd6b-4587-b8b7-be3b2aedd940
"00:00:00:00:00:df" 62ca2f88-6eb0-44c7-a6a8-ad69cc995d6d ""
274589f8-1e9c-47ac-aaee-e733aca3bcc3 834a056f-cd6b-4587-b8b7-be3b2aedd940
```