

## **Configuring VLANs**

This chapter contains the following sections:

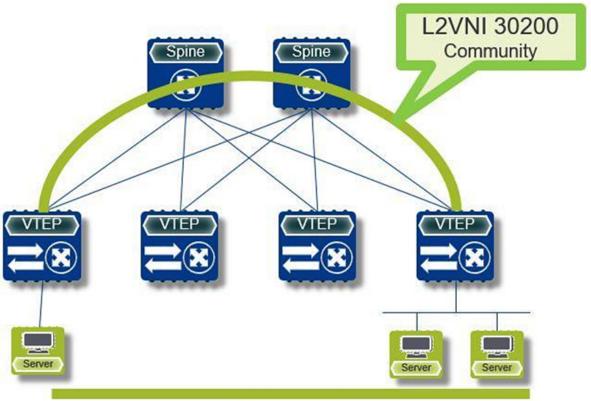
- About Private VLANs over VXLAN, on page 1
- Guidelines and Limitations for Private VLANs over VXLAN, on page 2
- Configuration Example for Private VLANs, on page 3

## **About Private VLANs over VXLAN**

The private VLAN feature allows segmenting the Layer 2 broadcast domain of a VLAN into subdomains. A subdomain is represented by a pair of private VLANs: a primary VLAN and a secondary VLAN. A private VLAN domain can have multiple private VLAN pairs, one pair for each subdomain. All VLAN pairs in a private VLAN domain share the same primary VLAN. The secondary VLAN ID differentiates one subdomain from another.

Private VLANs over VXLAN extends private VLAN across VXLAN. The secondary VLAN can exist on multiple VTEPs across VXLAN. MAC address learning happens over the primary VLAN and advertises via BGP EVPN. When traffic is encapsulated, the VNI used is that of the secondary VLAN. The feature also supports Anycast Gateway. Anycast Gateway must be defined using the primary VLAN.

Figure 1: L2VNI 30200 Community



### **Guidelines and Limitations for Private VLANs over VXLAN**

Private VLANs over VXLAN has the following configuration guidelines and limitations:

- The following platforms support private VLANs over VXLAN:
  - Cisco Nexus 9300-EX platform switches
  - Cisco Nexus 9300-FX/FX2 platform switches
  - Cisco Nexus 9300-GX platform switches
- Beginning with Cisco NX-OS Release 9.3(9), PVLAN configuration is not allowed on vPC Peer-link interfaces.
- Flood and learn underlay is not supported.
- Fabric Extenders (FEX) VLAN cannot be mapped to a private VLAN.
- vPC Fabric Peering supports private VLANs.

# Configuration Example for Private VLANs

The following is a private VLAN configuration example:

```
vlan 500
  private-vlan primary
  private-vlan association 501-503
  vn-segment 5000
vlan 501
 private-vlan isolated
  vn-segment 5001
vlan 502
 private-vlan community
  vn-segment 5002
vlan 503
 private-vlan community
  vn-segment 5003
vlan 1001
  !L3 VNI for tenant VRF
  vn-segment 900001
interface Vlan500
  no shut.down
  private-vlan mapping 501-503
 vrf member vxlan-900001
 no ip redirects
  ip address 50.1.1.1/8
  ipv6 address 50::1:1:1/64
  no ipv6 redirects
  fabric forwarding mode anycast-gateway
interface Vlan1001
  no shutdown
  vrf member vxlan-900001
  no ip redirects
 ip forward
  ipv6 forward
  ipv6 address use-link-local-only
 no ipv6 redirects
interface nve 1
 no shutdown
  host-reachability protocol bgp
  source-interface loopback0
  member vni 5000
   mcast-group 225.5.0.1
  member vni 5001
   mcast-group 225.5.0.2
  member vni 5002
   ingress-replication protocol bgp
 member vni 5003
   mcast-group 225.5.0.4
member vni 900001 associate-vrf
```



Note

If you use an external gateway, the interface towards the external router must be configured as a PVLAN promiscuous port

#### Configuration Example for Private VLANs

interface ethernet 2/1
switchport
switchport mode private-vlan trunk promiscuous
switchport private-vlan mapping trunk 500 199,200,201
exit