



Configuring EVPN VXLAN Integrated Routing and Bridging

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Information About EVPN VXLAN Integrated Routing and Bridging

EVPN VXLAN integrated routing and bridging (IRB) allows the VTEPs or leaf switches in an EVPN VXLAN network to perform both bridging and routing. IRB allows the VTEPs to forward both Layer 2 or bridged and Layer 3 or routed traffic. A VTEP performs bridging when it forwards traffic to the same subnet. Similarly, a VTEP performs routing when it forwards traffic to a different subnet. The VTEPs in the network forward traffic to each other through the VXLAN gateways. BGP EVPN VXLAN implements IRB in two ways:

- Asymmetric IRB
- Symmetric IRB

Asymmetric IRB

In asymmetric IRB, the ingress VTEP performs both bridging and routing whereas the egress VTEP performs only bridging. A packet first moves through a MAC VRF followed by an IP VRF on the network virtualisation endpoint (NVE) of the ingress VTEP. It then moves only through a MAC VRF on the NVE of the egress VTEP. The NVE of the ingress VTEP manages all the packet processing associated with intersubnet forwarding semantics.

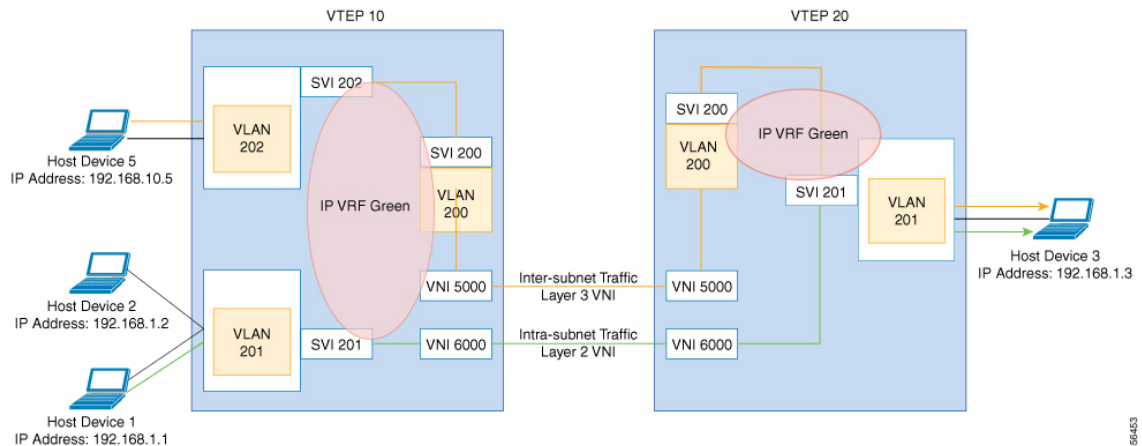
The return traffic during asymmetric IRB goes through a different virtual network instance (VNI) compared to the source traffic. Asymmetric IRB needs the source and destination VNIs to be associated with both the ingress and egress VTEPs.

Symmetric IRB

In symmetric IRB, both the ingress and egress VTEPs perform both bridging and routing. A packet first moves through a MAC VRF followed by an IP VRF on the NVE of the ingress VTEP. It then moves through an IP VRF followed by a MAC VRF on the NVE of the egress VTEP. The NVEs of ingress and egress VTEPs equally share all the packet processing associated with intersubnet forwarding semantics.

In symmetric IRB, you are required to define only the VNIs of locally attached endpoints on the ingress and egress VTEPs. Symmetric IRB offers better scalability in terms of the number of VNIs that a BGP EVPN VXLAN fabric supports.

The following figure shows the implementation of symmetric IRB and the movement of traffic in an EVPN VXLAN network:

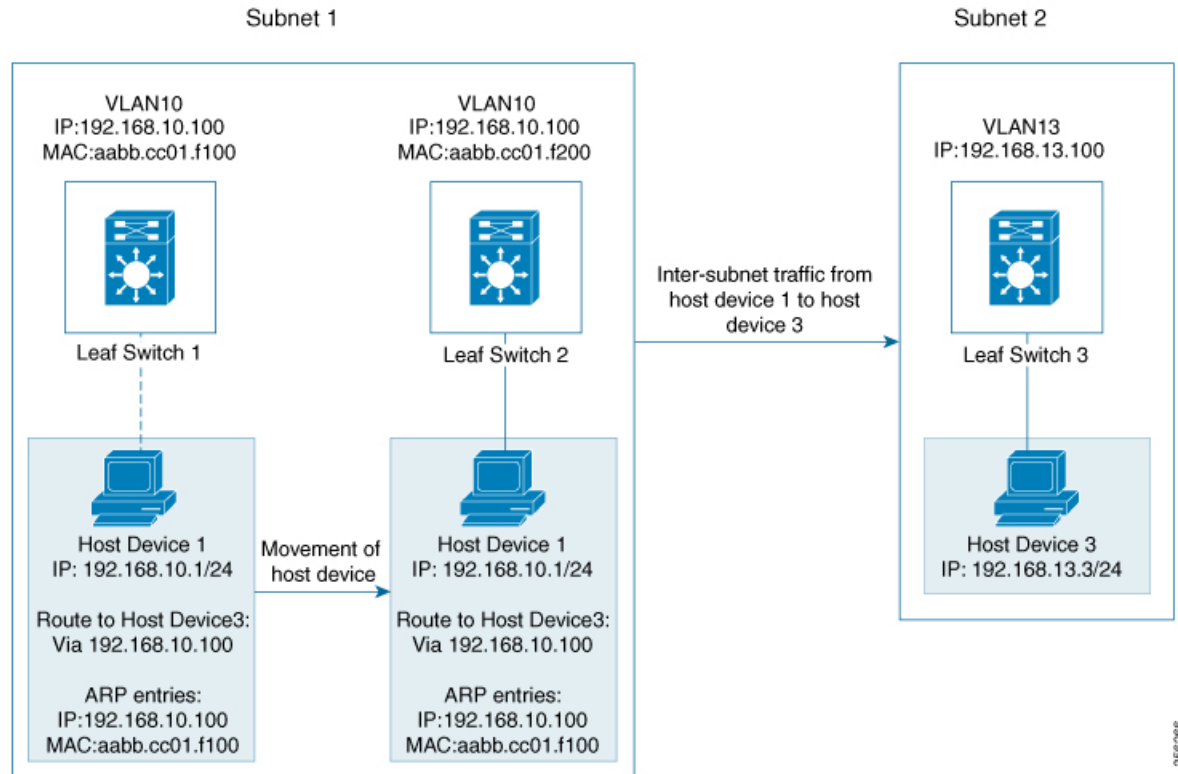


EVPN VXLAN Distributed Anycast Gateway

Distributed anycast gateway is a default gateway addressing mechanism in a BGP EVPN VXLAN fabric. The feature enables the use of the same gateway IP and MAC address across all the VTEPs in an EVPN VXLAN network. This ensures that every VTEP functions as the default gateway for the workloads directly connected to it. The feature facilitates flexible workload placement, host mobility, and optimal traffic forwarding across the BGP EVPN VXLAN fabric.

The scenario shown in the following figure depicts a distributed gateway. Subnet 1 contains two leaf switches, leaf switch 1 and leaf switch 2, acting together as a distributed default gateway for VLAN 10. Host device 1 is connected to leaf switch 1 and needs to send traffic to host device 3, which is in a different subnet. When host device 1 tries to send traffic outside of subnet 1, the traffic goes through the configured gateway on leaf switch 1. Host device 1 registers the Address Resolution Protocol (ARP) entries of the gateway VLAN MAC and IP addresses on leaf switch 1.

Figure 1: Distributed Gateway Topology



When multiple VTEPs act together as one single distributed default gateway for the same VLAN, the VLAN IP address remains the same across all of them. This IP address becomes the gateway IP address for any host device in the VLAN that tries to reach an IP address outside its subnet. But, each VTEP retains its own MAC address.

In the preceding figure, consider the scenario where host device 1 moves from leaf switch 1 to leaf switch 2. The host device remains within the same network and still maintains the same ARP entries for gateway MAC and IP addresses. But the MAC addresses of the VLAN interfaces on leaf switch 2 and leaf switch 1 are different. This results in a MAC address mismatch between the ARP entry and the VLAN on leaf switch 2. As a result, any traffic that host device 1 tries to send outside of Subnet 1 is either lost or continuously flooded as unknown unicast. EVPN VXLAN distributed anycast gateway feature prevents this traffic loss by ensuring that all the VTEPs have the same gateway MAC and IP addresses.

There are two ways to maintain the same MAC address across all VTEPs and configure distributed anycast gateway:

- Manual MAC address configuration
- MAC aliasing

Manual MAC Address Configuration

Manual MAC address configuration is the conventional method of enabling distributed anycast gateway in an EVPN VXLAN network. In this method, you manually configure the same MAC address on the Layer 2

VNI VLAN SVI on all the VTEPs in the network. You must configure the same MAC address on all the VTEPs in the same Layer 2 VNI.



Note The VLAN SVIs on all the leaf switches must already share the same gateway IP address.

In the [Figure 1: Distributed Gateway Topology, on page 3](#) image, to enable distributed anycast gateway in subnet 1, configure the same MAC address on leaf switch 1 and leaf switch 2. This ensures that the ARP entries of gateway MAC and IP addresses on host device 1 match with the MAC and IP addresses of both leaf switch 1 and leaf switch 2.

MAC Aliasing

MAC aliasing for distributed anycast gateway removes the need to configure the same MAC address explicitly on the VLAN interfaces of every VTEP. MAC aliasing allows the VTEPs to advertise their VLAN MAC addresses as the gateway MAC addresses to all the other VTEPs in the network. The VTEPs in the network store the advertised MAC address as a gateway MAC address provided their VLAN IP address matches with the gateway IP address.

In the [Figure 1: Distributed Gateway Topology, on page 3](#) image, consider the scenario where MAC aliasing is enabled in subnet 1. Leaf switch 1 and leaf switch 2 advertise their MAC addresses to each other as gateway MAC addresses. This allows leaf switch 2 to recognize the MAC address in the ARP entry of host device 1 as a gateway MAC address. It allows host device 1 to send traffic outside of subnet 1 even though its VLAN MAC address does not match with the ARP entry.

MAC aliasing in an EVPN VXLAN network is configured by enabling the default gateway advertisement on all the VTEPs.

How to Configure EVPN VXLAN Integrated Routing and Bridging

To configure EVPN VXLAN IRB, you need to configure EVPN VXLAN Layer 2 and Layer 3 overlay networks, and enable the gateways in the VXLAN network.

To enable IRB in a VXLAN network using distributed anycast gateway, perform the following set of procedures:

- Configure Layer 2 VPN EVPN on the VTEPs.
 - Enable distributed anycast gateway for the VXLAN network when you configure Layer 2 VPN.
- Configure the core-facing and access-facing VLANs on the VTEPs.
- Configure switch virtual interface (SVI) for the core-facing VLAN on the VTEPs.
- Configure SVI for the access-facing VLAN on the VTEPs.
- Configure the IP VRF on the VTEPs.
- Configure the Loopback interface on the VTEPs.
- Configure the Network Virtualization Endpoint (NVE) interface on the VTEPs.
- Configure BGP with EVPN address family on the VTEPs.

Configuring Layer 2 VPN EVPN on a VTEP

See [Configuring Layer 2 VPN EVPN on a VTEP](#) for detailed steps.

Configuring IP VRF on VTEP

See [Configuring an IP VRF on a VTEP](#) for detailed steps.

Configuring Core-facing and Access-facing VLANs on a VTEP

To configure the core-facing and access-facing VLANs on a VTEP and enable IRB in the EVPN VXLAN network, perform the following steps:

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	vlan configuration <i>vlan-id</i> Example: Device (config)# vlan configuration 201	Enters VLAN feature configuration mode for the specified VLAN interface.
Step 4	member evpn-instance <i>evpn-instance-id vni l2-vni-number</i> Example: Device (config-vlan)# member evpn-instance 1 vni 6000	Adds EVPN instance as a member of the VLAN configuration. The VNI here is used as a Layer 2 VNI.
Step 5	exit Example: Device (config-vlan)# exit	Returns to global configuration mode.
Step 6	vlan configuration <i>vlan-id</i> Example: Device (config)# vlan configuration 202	Enters VLAN feature configuration mode for the specified VLAN interface.
Step 7	member evpn-instance <i>evpn-instance-id vni l2-vni-number</i> Example:	Adds EVPN instance as a member of the VLAN configuration. The VNI here is used as a Layer 2 VNI.

	Command or Action	Purpose
	<code>Device (config-vlan) # member evpn-instance 2 vni 7000</code>	
Step 8	exit Example: <code>Device (config-vlan) # exit</code>	Returns to global configuration mode.
Step 9	vlan configuration <i>vlan-id</i> Example: <code>Device (config) # vlan configuration 200</code>	Enters VLAN feature configuration mode for the specified VLAN interface.
Step 10	member vni <i>l3-vni-number</i> Example: <code>Device (config-vlan) # member vni 5000</code>	Adds EVPN instance as a member of the VLAN configuration. The VNI here is used as a Layer 3 VNI.
Step 11	exit Example: <code>Device (config-vlan) # exit</code>	Returns to global configuration mode.
Step 12	end Example: <code>Device (config-vlan) # end</code>	Returns to privileged EXEC mode.

Configuring Switch Virtual Interface for the Core-facing VLAN on a VTEP

To configure an SVI for the core-facing VLAN on a VTEP, perform the following steps:

Procedure

	Command or Action	Purpose
Step 1	enable Example: <code>Device> enable</code>	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	configure terminal Example: <code>Device# configure terminal</code>	Enters global configuration mode.
Step 3	interface vlan <i>vlan-id</i> Example: <code>Device (config) # interface vlan 200</code>	Enters interface configuration mode for the specified VLAN.
Step 4	vrf forwarding <i>vrf-name</i> Example:	Configures the SVI for the VLAN.

	Command or Action	Purpose
	<code>Device(config-if)# vrf forwarding Green</code>	
Step 5	ip unnumbered <i>Loopback-interface</i> Example: <code>Device(config-if)# ip unnumbered Loopback0</code>	Enables IP processing on the Loopback interface without assigning an explicit IP address to the interface.
Step 6	no autostate Example: <code>Device(config-if)# no autostate</code>	Disables autostate on the interface. In EVPN deployments, once a VLAN is used for a core-facing SVI, it should not be allowed in any trunk. For a core-facing SVI to function properly, the no autostate command must be configured under the SVI.
Step 7	end Example: <code>Device(config-if)# end</code>	Returns to privileged EXEC mode.

Configuring Switch Virtual Interface for the Access-facing VLANs on a VTEP

To configure SVIs for the access-facing VLANs on a VTEP, perform the following steps:

Procedure

	Command or Action	Purpose
Step 1	enable Example: <code>Device> enable</code>	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	configure terminal Example: <code>Device# configure terminal</code>	Enters global configuration mode.
Step 3	interface vlan <i>vlan-id</i> Example: <code>Device(config)# interface vlan 202</code>	Enters interface configuration mode for the specified VLAN.
Step 4	vrf forwarding <i>vrf-name</i> Example: <code>Device(config-if)# vrf forwarding Green</code>	Configures the SVI for the VLAN.
Step 5	ip address <i>gateway-ip-address</i> Example: <code>Device(config-if)# ip address 192.168.10.1 255.255.255.0</code>	Configures the gateway IP address for the access SVI. Configure the same gateway IP address for this SVI on all the other VTEPs.

	Command or Action	Purpose
Step 6	mac-address <i>mac-address-value</i> Example: Device (config-if) # mac-address aabb.cc01.f100	(Optional) Manually sets the MAC address for the VLAN interface. To configure distributed anycast gateway in a VXLAN network using manual MAC configuration, configure the same MAC address on the corresponding Layer 2 VNI SVIs on all the VTEPs in a VXLAN network.
Step 7	end Example: Device (config-if) # end	Returns to privileged EXEC mode.

Configuring the Loopback Interface on a VTEP

See [Configuring the Loopback Interface on a VTEP](#) for detailed steps.

Configuring the NVE Interface on a VTEP

To add Layer 2 and Layer 3 VNI members to the NVE interface of a VTEP, perform the following steps:

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	interface <i>nve-interface-id</i> Example: Device (config) # interface nve1	Defines the interface to be configured as a trunk, and enters interface configuration mode.
Step 4	no ip address Example: Device (config-if) # no ip address	Disables IP processing on the interface by removing its IP address.
Step 5	source-interface <i>loopback-interface-id</i> Example: Device (config-if) # source-interface loopback0	Sets the IP address of the specified loopback interface as the source IP address.

	Command or Action	Purpose
Step 6	host-reachability protocol bgp Example: Device(config-if)# host-reachability protocol bgp	Configures BGP as the host-reachability protocol on the interface.
Step 7	member vni layer2-vni-id {ingress-replication mcast-group multicast-group-address} Example: Device(config-if)# member vni 6000 mcast-group 227.0.0.1 Device(config-if)# member vni 7000 mcast-group 227.0.0.1	Associates the Layer 2 VNI member with the NVE. The specified replication type must match the replication type that is configured globally or for the specific EVPN instance. Use mcast-group keyword for static replication and ingress-replication keyword for ingress replication.
Step 8	member vni layer3-vni-id vrf vrf-name Example: Device(config-if)# member vni 5000 vrf Green	Associates the Layer 3 VNI member with the NVE.
Step 9	end Example: Device(config-if)# end	Returns to privileged EXEC mode.

Configuring BGP with EVPN and VRF Address Families on a VTEP

To configure BGP on a VTEP with EVPN and VRF address families and a spine switch as the neighbor, perform these steps:

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	router bgp autonomous-system-number Example: Device(config)# router bgp 1	Enables a BGP routing process, assigns it an autonomous system number, and enters router configuration mode.

	Command or Action	Purpose
Step 4	bgp log-neighbor-changes Example: Device(config-router)# bgp log-neighbor-changes	(Optional) Enables the generation of logging messages when the status of a BGP neighbor changes. For more information, see <i>Configuring BGP</i> module of the <i>IP Routing Configuration Guide</i> .
Step 5	bgp update-delay time-period Example: Device(config-router)# bgp update-delay 1	(Optional) Sets the maximum initial delay period before sending the first update. For more information, see <i>Configuring BGP</i> module of the <i>IP Routing Configuration Guide</i> .
Step 6	bgp graceful-restart Example: Device(config-router)# bgp graceful-restart	(Optional) Enables the BGP graceful restart capability for all BGP neighbors. For more information, see <i>Configuring BGP</i> module of the <i>IP Routing Configuration Guide</i> .
Step 7	no bgp default ipv4-unicast Example: Device(config-router)# no bgp default ipv4-unicast	(Optional) Disables default IPv4 unicast address family for BGP peering session establishment. For more information, see <i>Configuring BGP</i> module of the <i>IP Routing Configuration Guide</i> .
Step 8	neighbor ip-address remote-as number Example: Device(config-router)# neighbor 10.11.11.11 remote-as 1	Defines multiprotocol-BGP neighbors. Under each neighbor, define the Layer 2 Virtual Private Network (L2VPN) EVPN configuration. Use the IP address of the spine switch as the neighbor IP address.
Step 9	neighbor {ip-address group-name} update-source interface Example: Device(config-router)# neighbor 10.11.11.11 update-source Loopback0	Configures update source. Update source can be configured per neighbor or per peer-group. Use the IP address of the spine switch as the neighbor IP address.
Step 10	address-family l2vpn evpn Example: Device(config-router)# address-family l2vpn evpn	Specifies the L2VPN address family and enters address family configuration mode.
Step 11	neighbor ip-address activate Example: Device(config-router-af)# neighbor 10.11.11.11 activate	Enables the exchange information from a BGP neighbor. Use the IP address of the spine switch as the neighbor IP address.
Step 12	neighbor ip-address send-community [both extended standard]	Specifies the communities attribute sent to a BGP neighbor.

	Command or Action	Purpose
	Example: Device(config-router-af)# neighbor 10.11.11.11 send-community both	Use the IP address of the spine switch as the neighbor IP address.
Step 13	exit-address-family Example: Device(config-router-af)# exit-address-family	Exits address family configuration mode and returns to router configuration mode.
Step 14	address-family ipv4 vrf vrf-name Example: Device(config-router)# address-family ipv4 vrf green	Specifies the IPv4 address family and enters address family configuration mode.
Step 15	advertise l2vpn evpn Example: Device(config-router-af)# advertise l2vpn evpn	Advertises Layer 2 VPN EVPN routes within a tenant VRF in an EVPN VXLAN fabric.
Step 16	redistribute connected Example: Device(config-router-af)# redistribute connected	Redistributes connected routes to BGP.
Step 17	redistribute static Example: Device(config-router-af)# redistribute static	Redistributes static routes to BGP.
Step 18	exit-address-family Example: Device(config-router-af)# exit-address-family	Exits address family configuration mode and returns to router configuration mode.
Step 19	address-family ipv6 vrf vrf-name Example: Device(config-router)# address-family ipv6 vrf green	Specifies the IPv6 address family and enters address family configuration mode.
Step 20	advertise l2vpn evpn Example: Device(config-router-af)# advertise l2vpn evpn	Advertises Layer 2 VPN EVPN routes within a tenant VRF in an EVPN VXLAN fabric.
Step 21	redistribute connected Example:	Redistributes connected routes to BGP.

	Command or Action	Purpose
	Device (config-router-af) # redistribute connected	
Step 22	redistribute static Example: Device (config-router-af) # redistribute static	Redistributes static routes to BGP.
Step 23	exit-address-family Example: Device (config-router-af) # exit-address-family	Exits address family configuration mode and returns to router configuration mode.
Step 24	end Example: Device (config-router) # end	Returns to privileged EXEC mode.

Configuration Examples for EVPN VXLAN Integrated Routing and Bridging

This section provides an example to show how to enable EVPN VXLAN IRB using distributed anycast gateway. The following example shows a sample configuration for a VXLAN network with 2 VTEPs. VTEP 1 and VTEP 2 are connected to perform integrated routing and bridging.

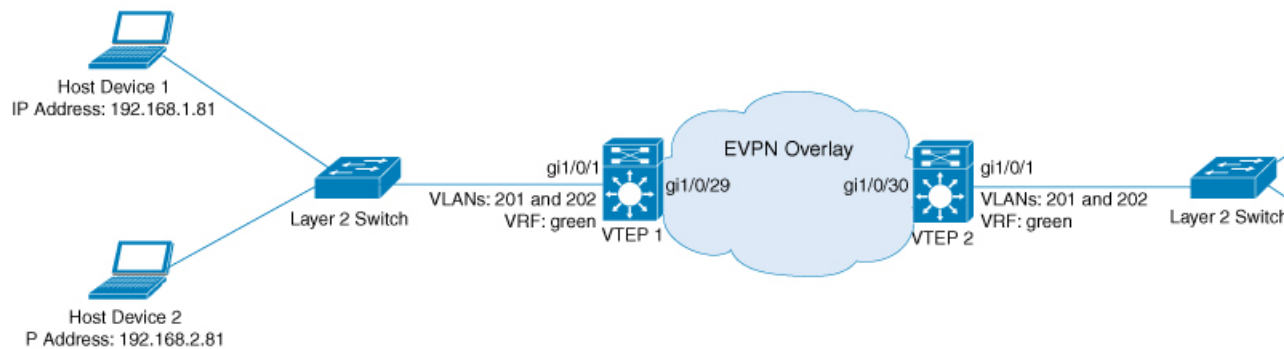


Table 1: Configuration Example for a VXLAN Network with Two VTEPs Connected to Perform Integrated Routing and Bridging Using Distributed Anycast Gateway

VTEP 1	VTEP 2
--------	--------

VTEP 1	VTEP 2
<pre> VTEP1# show running-config ! hostname VTEP1 ! vrf definition green rd 103:2 ! address-family ipv4 route-target export 103:2 route-target import 104:2 route-target export 103:2 stitching route-target import 104:2 stitching exit-address-family ! address-family ipv6 route-target export 103:2 route-target import 104:2 route-target export 103:2 stitching route-target import 104:2 stitching exit-address-family ! ip routing ip multicast-routing ipv6 unicast-routing ! ! l2vpn evpn replication-type static router-id Loopback0 default-gateway advertise ! l2vpn evpn instance 1 vlan-based encapsulation vxlan ! l2vpn evpn instance 2 vlan-based encapsulation vxlan ! ! system mtu 9150 ! vlan configuration 200 member vni 5000 vlan configuration 201 member evpn-instance 1 vni 6000 vlan configuration 202 member evpn-instance 2 vni 7000 ! ! interface Loopback0 ip address 10.1.1.10 255.255.255.255 ip pim sparse-mode ! interface Loopback13 description demo only (for rt5 distribution) vrf forwarding green ip address 10.1.13.13 255.255.255.0 ! interface GigabitEthernet1/0/1 description access-facing-interface switchport trunk allowed vlan 201,202 switchport mode trunk ! </pre>	<pre> VTEP2# show running-config ! hostname VTEP2 ! vrf definition green rd 104:2 ! address-family ipv4 route-target export 104:2 route-target import 103:2 route-target export 104:2 stitching route-target import 103:2 stitching exit-address-family ! address-family ipv6 route-target export 104:2 route-target import 103:2 route-target export 104:2 stitching route-target import 103:2 stitching exit-address-family ! ip routing ip multicast-routing ipv6 unicast-routing ! ! l2vpn evpn replication-type static router-id Loopback0 default-gateway advertise ! l2vpn evpn instance 1 vlan-based encapsulation vxlan ! l2vpn evpn instance 2 vlan-based encapsulation vxlan ! ! system mtu 9150 ! vlan configuration 200 member vni 5000 vlan configuration 201 member evpn-instance 1 vni 6000 vlan configuration 202 member evpn-instance 2 vni 7000 ! ! interface Loopback0 ip address 10.2.2.20 255.255.255.255 ip pim sparse-mode ! interface Loopback14 description demo only (for rt5 distribution) vrf forwarding green ip address 10.1.14.14 255.255.255.0 ! interface GigabitEthernet1/0/1 description access-facing-interface switchport trunk allowed vlan 201,202 switchport mode trunk ! </pre>

VTEP 1	VTEP 2
<pre> ! interface GigabitEthernet1/0/29 description core-underlay-interface no switchport ip address 172.16.1.29 255.255.255.0 ip pim sparse-mode ! ! interface Vlan200 description core svi for l3vni vrf forwarding green ip unnumbered Loopback0 ipv6 enable no autostate ! interface Vlan201 description vni 6000 default-gateway vrf forwarding green ip address 192.168.1.201 255.255.255.0 ipv6 address 2001:DB8:201::201/64 ipv6 enable ! interface Vlan202 description vni 7000 default-gateway vrf forwarding green ip address 192.168.2.202 255.255.255.0 ipv6 address 2001:DB8:202::202/64 ipv6 enable ! ! interface nve10 no ip address source-interface Loopback0 host-reachability protocol bgp member vni 6000 mcast-group 232.1.1.1 member vni 5000 vrf green member vni 7000 mcast-group 232.1.1.1 ! router ospf 1 router-id 10.1.1.10 network 10.1.1.0 0.0.0.255 area 0 network 172.16.1.0 0.0.0.255 area 0 ! router bgp 10 bgp router-id interface Loopback0 bgp log-neighbor-changes bgp update-delay 1 no bgp default ipv4-unicast neighbor 10.2.2.20 remote-as 10 neighbor 10.2.2.20 update-source Loopback0 ! address-family ipv4 exit-address-family ! address-family l2vpn evpn neighbor 10.2.2.20 activate neighbor 10.2.2.20 send-community both exit-address-family ! address-family ipv4 vrf green advertise l2vpn evpn redistribute connected </pre>	<pre> ! interface GigabitEthernet1/0/30 description core-underlay-interface no switchport ip address 172.16.1.30 255.255.255.0 ip pim sparse-mode ! ! interface Vlan200 description core svi for l3vni vrf forwarding green ip unnumbered Loopback0 ipv6 enable no autostate ! interface Vlan201 description vni 6000 default-gateway vrf forwarding green ip address 192.168.1.201 255.255.255.0 ipv6 address 2001:DB8:201::201/64 ipv6 enable ! interface Vlan202 description vni 7000 default-gateway vrf forwarding green ip address 192.168.2.202 255.255.255.0 ipv6 address 2001:DB8:202::202/64 ipv6 enable ! ! interface nve10 no ip address source-interface Loopback0 host-reachability protocol bgp member vni 6000 mcast-group 232.1.1.1 member vni 7000 mcast-group 232.1.1.1 member vni 5000 vrf green ! router ospf 1 router-id 10.2.2.20 network 10.2.2.0 0.0.0.255 area 0 network 172.16.1.0 0.0.0.255 area 0 ! router bgp 10 bgp router-id interface Loopback0 bgp log-neighbor-changes bgp update-delay 1 no bgp default ipv4-unicast neighbor 10.1.1.10 remote-as 10 neighbor 10.1.1.10 update-source Loopback0 ! address-family ipv4 exit-address-family ! address-family l2vpn evpn neighbor 10.1.1.10 activate neighbor 10.1.1.10 send-community both exit-address-family ! address-family ipv4 vrf green advertise l2vpn evpn redistribute connected </pre>

VTEP 1	VTEP 2
<pre> redistribute static exit-address-family ! address-family ipv6 vrf green redistribute connected redistribute static advertise l2vpn evpn exit-address-family ! ip pim rp-address 10.1.1.10 ! end </pre>	<pre> redistribute static exit-address-family ! address-family ipv6 vrf green redistribute connected redistribute static advertise l2vpn evpn exit-address-family ! ip pim rp-address 10.1.1.10 ! end </pre>

The following examples provide outputs for **show** commands on VTEP 1 and VTEP 2 in the topology configured above:

- [show nve peers, on page 16](#)
- [show l2vpn evpn peers vxlan, on page 17](#)
- [show l2vpn evpn evi evpn-instance detail, on page 17](#)
- [show l2vpn evpn default-gateway, on page 18](#)
- [show bgp l2vpn evpn all, on page 19](#)
- [show ip route vrf green, on page 22](#)
- [show platform software fed switch active matm mactable vlan, on page 23](#)

show nve peers

VTEP 1

The following example shows the output for the **show nve peers** command on VTEP 1:

```

VTEP1# show nve peers
Interface VNI      Type Peer-IP      RMAC/Num_RTs  eVNI      state flags UP time
nve10    5000    L3CP 10.1.1.10   380e.4d9b.6a4a 5000      UP   A/M/4 01:33:41
nve10    5000    L3CP 10.2.2.20   380e.4d9b.6a4a 5000      UP   A/-/6 00:43:38
nve10    6000    L2CP 10.2.2.20     5           6000      UP   N/A   01:33:41
nve10    7000    L2CP 10.2.2.20     6           7000      UP   N/A   01:33:41

```

VTEP 2

The following example shows the output for the **show nve peers** command on VTEP 2:

```

VTEP2# show nve peers
Interface VNI      Type Peer-IP      RMAC/Num_RTs  eVNI      state flags UP time
nve10    5000    L3CP 10.1.1.10   a0f8.4910.bce2 5000      UP   A/M/4 01:33:55
nve10    5000    L3CP 10.1.1.10   a0f8.4910.bce2 5000      UP   A/-/6 01:14:23
nve10    6000    L2CP 10.1.1.10     7           6000      UP   N/A   01:33:55
nve10    7000    L2CP 10.1.1.10     6           7000      UP   N/A   01:33:55

```


show l2vpn evpn peers vxlan**VTEP 1**

The following example shows the output for the **show l2vpn evpn peers vxlan** command on VTEP 1:

```
VTEP1# show l2vpn evpn peers vxlan
Interface VNI      Peer-IP              Num routes  eVNI      UP time
-----
nve10     6000             10.2.2.20           5           6000     01:34:50
nve10     7000             10.2.2.20           6           7000     01:34:50
```

VTEP 2

The following example shows the output for the **show l2vpn evpn peers vxlan** command on VTEP 2:

```
VTEP2# show l2vpn evpn peers vxlan
Interface VNI      Peer-IP              Num routes  eVNI      UP time
-----
nve10     6000             10.1.1.10           7           6000     01:35:23
nve10     7000             10.1.1.10           6           7000     01:35:23
```

show l2vpn evpn evi evpn-instance detail**VTEP 1**

The following example shows the output for the **show l2vpn evpn evi evpn-instance detail** command on VTEP 1:

```
VTEP1# show l2vpn evpn evi 1 detail
EVPN instance:      1 (VLAN Based)
RD:                 10.1.1.10:1 (auto)
Import-RTs:         10:1
Export-RTs:         10:1
Per-EVI Label:     none
State:              Established
Replication Type:   Static (global)
Encapsulation:     vxlan
IP Local Learn:    Enable (global)
Vlan:              201
  Ethernet-Tag:    0
  State:           Established
  Core If:        Vlan200
  Access If:     Vlan201
  NVE If:        nve10
  RMAC:         a0f8.4910.bce2
  Core Vlan:    200
  L2 VNI:       6000
  L3 VNI:       5000
  VTEP IP:      10.1.1.10
  MCAST IP:    232.1.1.1
  VRF:         green
  IPv4 IRB:    Enabled
  IPv6 IRB:    Enabled
Pseudoports:
  GigabitEthernet1/0/1 service instance 201
```

VTEP 2

The following example shows the output for the **show l2vpn evpn evi evpn-instance detail** command on VTEP 2:

```
VTEP2# show l2vpn evpn evi 1 detail
EVPN instance:      1 (VLAN Based)
RD:                 10.2.2.20:1 (auto)
Import-RTs:         10:1
Export-RTs:         10:1
Per-EVI Label:     none
State:              Established
Replication Type:   Static (global)
Encapsulation:     vxlan
IP Local Learn:     Enable (global)
Vlan:               201
  Ethernet-Tag:     0
  State:            Established
  Core If:          Vlan200
  Access If:        Vlan201
  NVE If:           nve10
  RMAC:             380e.4d9b.6a4a
  Core Vlan:        200
  L2 VNI:           6000
  L3 VNI:           5000
  VTEP IP:          10.2.2.20
  MCAST IP:         232.1.1.1
  VRF:              green
  IPv4 IRB:         Enabled
  IPv6 IRB:         Enabled
Pseudoports:
  GigabitEthernet1/0/1 service instance 201
```

show l2vpn evpn default-gateway**VTEP 1**

The following example shows the output for the **show l2vpn evpn default-gateway** command on VTEP 1:

```
VTEP1# show l2vpn evpn default-gateway
Valid Default Gateway Address  EVI  VLAN  MAC Address  Source
-----
Y  192.168.1.201                1    201    a0f8.4910.bccc V1201
Y  192.168.1.201                1    201    380e.4d9b.6a48 10.2.2.20
Y  2001:DB8:201::201            1    201    a0f8.4910.bccc V1201
Y  2001:DB8:201::201            1    201    380e.4d9b.6a48 10.2.2.20
Y  192.168.2.202                2    202    a0f8.4910.bcc2 V1202
Y  192.168.2.202                2    202    380e.4d9b.6a42 10.2.2.20
Y  2001:DB8:202::202            2    202    a0f8.4910.bcc2 V1202
Y  2001:DB8:202::202            2    202    380e.4d9b.6a42 10.2.2.20
```

VTEP 2

The following example shows the output for the **show l2vpn evpn default-gateway** command on VTEP 2:

```
VTEP2# show l2vpn evpn default-gateway
Valid Default Gateway Address   EVI   VLAN  MAC Address   Source
-----
Y 192.168.1.201                 1     201   380e.4d9b.6a48 V1201
Y 192.168.1.201                 1     201   a0f8.4910.bccc 10.1.1.10
Y 2001:DB8:201::201             1     201   380e.4d9b.6a48 V1201
Y 2001:DB8:201::201             1     201   a0f8.4910.bccc 10.1.1.10
Y 192.168.2.202                 2     202   380e.4d9b.6a42 V1202
Y 192.168.2.202                 2     202   a0f8.4910.bccc 10.1.1.10
Y 2001:DB8:202::202             2     202   380e.4d9b.6a42 V1202
Y 2001:DB8:202::202             2     202   a0f8.4910.bccc 10.1.1.10
```

show bgp l2vpn evpn all

VTEP 1

The following example shows the output for the **show bgp l2vpn evpn all** command on VTEP 1:

```
VTEP1# show bgp l2vpn evpn all
BGP table version is 705, local router ID is 10.1.1.10
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
               r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,
               x best-external, a additional-path, c RIB-compressed,
               t secondary path, L long-lived-stale,
Origin codes: i - IGP, e - EGP, ? - incomplete
RPKI validation codes: V valid, I invalid, N Not found

      Network          Next Hop          Metric LocPrf Weight Path
Route Distinguisher: 10.1.1.10:1
*>i [2] [10.1.1.10:1] [0] [48] [0018736C56C3] [0] [*] /20
      10.2.2.20          0      100      0 ?
*>i [2] [10.1.1.10:1] [0] [48] [0018736C56C3] [32] [192.168.1.89] /24
      10.2.2.20          0      100      0 ?
*> [2] [10.1.1.10:1] [0] [48] [0059DC50AE01] [0] [*] /20
      ::                  32768 ?
*> [2] [10.1.1.10:1] [0] [48] [0059DC50AE4C] [0] [*] /20
      ::                  32768 ?
*> [2] [10.1.1.10:1] [0] [48] [0059DC50AE4C] [32] [192.168.1.81] /24
      ::                  32768 ?
*> [2] [10.1.1.10:1] [0] [48] [0059DC50AE4C] [128] [2001:DB8:201::81] /36
      ::                  32768 ?
*> [2] [10.1.1.10:1] [0] [48] [0059DC50AE4C] [128] [FE80::259:DCFF:FE50:AE4C] /36
      ::                  32768 ?
*>i [2] [10.1.1.10:1] [0] [48] [380E4D9B6A48] [32] [192.168.1.201] /24
      10.2.2.20          0      100      0 ?
*>i [2] [10.1.1.10:1] [0] [48] [380E4D9B6A48] [128] [2001:DB8:201::201] /36
      10.2.2.20          0      100      0 ?
*> [2] [10.1.1.10:1] [0] [48] [A0F84910BCCC] [32] [192.168.1.201] /24
      ::                  32768 ?
*> [2] [10.1.1.10:1] [0] [48] [A0F84910BCCC] [128] [2001:DB8:201::201] /36
      ::                  32768 ?
Route Distinguisher: 10.1.1.10:2
*>i [2] [10.1.1.10:2] [0] [48] [0018736C5681] [0] [*] /20
      10.2.2.20          0      100      0 ?
*>i [2] [10.1.1.10:2] [0] [48] [0018736C56C2] [0] [*] /20
      10.2.2.20          0      100      0 ?
*>i [2] [10.1.1.10:2] [0] [48] [0018736C56C2] [32] [192.168.2.89] /24
      10.2.2.20          0      100      0 ?
*> [2] [10.1.1.10:2] [0] [48] [0059DC50AE01] [0] [*] /20
      ::                  32768 ?
*> [2] [10.1.1.10:2] [0] [48] [0059DC50AE42] [0] [*] /20
```

```

::: 32768 ?
*> [2][10.1.1.10:2][0][48][0059DC50AE42][32][192.168.2.81]/24
::: 32768 ?
*>i [2][10.1.1.10:2][0][48][380E4D9B6A42][32][192.168.2.202]/24
10.2.2.20 0 100 0 ?
*>i [2][10.1.1.10:2][0][48][380E4D9B6A42][128][2001:DB8:202::202]/36
10.2.2.20 0 100 0 ?
*> [2][10.1.1.10:2][0][48][A0F84910BCC2][32][192.168.2.202]/24
::: 32768 ?
*> [2][10.1.1.10:2][0][48][A0F84910BCC2][128][2001:DB8:202::202]/36
::: 32768 ?
Route Distinguisher: 10.2.2.20:1
*>i [2][10.2.2.20:1][0][48][0018736C56C3][0][*]/20
10.2.2.20 0 100 0 ?
*>i [2][10.2.2.20:1][0][48][0018736C56C3][32][192.168.1.89]/24
10.2.2.20 0 100 0 ?
*>i [2][10.2.2.20:1][0][48][380E4D9B6A48][32][192.168.1.201]/24
10.2.2.20 0 100 0 ?
*>i [2][10.2.2.20:1][0][48][380E4D9B6A48][128][2001:DB8:201::201]/36
10.2.2.20 0 100 0 ?
Route Distinguisher: 10.2.2.20:2
*>i [2][10.2.2.20:2][0][48][0018736C5681][0][*]/20
10.2.2.20 0 100 0 ?
*>i [2][10.2.2.20:2][0][48][0018736C56C2][0][*]/20
10.2.2.20 0 100 0 ?
*>i [2][10.2.2.20:2][0][48][0018736C56C2][32][192.168.2.89]/24
10.2.2.20 0 100 0 ?
*>i [2][10.2.2.20:2][0][48][380E4D9B6A42][32][192.168.2.202]/24
10.2.2.20 0 100 0 ?
*>i [2][10.2.2.20:2][0][48][380E4D9B6A42][128][2001:DB8:202::202]/36
10.2.2.20 0 100 0 ?
Route Distinguisher: 103:2 (default for vrf green)
*> [5][103:2][0][24][10.1.13.0]/17
0.0.0.0 0 32768 ?
*> [5][103:2][0][24][192.168.1.0]/17
0.0.0.0 0 32768 ?
*> [5][103:2][0][24][192.168.2.0]/17
0.0.0.0 0 32768 ?
*> [5][103:2][0][64][2001:DB8:201::]/29
::: 0 32768 ?
*> [5][103:2][0][64][2001:DB8:202::]/29
::: 0 32768 ?
Route Distinguisher: 104:2
*>i [5][104:2][0][24][10.1.14.0]/17
10.2.2.20 0 100 0 ?
*>i [5][104:2][0][24][192.168.1.0]/17
10.2.2.20 0 100 0 ?
*>i [5][104:2][0][24][192.168.2.0]/17
10.2.2.20 0 100 0 ?
*>i [5][104:2][0][64][2001:DB8:201::]/29
10.2.2.20 0 100 0 ?
*>i [5][104:2][0][64][2001:DB8:202::]/29
10.2.2.20 0 100 0 ?

```

VTEP 2

The following example shows the output for the **show bgp l2vpn evpn all** command on VTEP 2:

```

VTEP2# show bgp l2vpn evpn all
BGP table version is 584, local router ID is 10.2.2.20
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
               r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,

```

```

        x best-external, a additional-path, c RIB-compressed,
        t secondary path, L long-lived-stale,
Origin codes: i - IGP, e - EGP, ? - incomplete
RPKI validation codes: V valid, I invalid, N Not found

      Network          Next Hop          Metric LocPrf Weight Path
Route Distinguisher: 10.1.1.10:1
*>i [2] [10.1.1.10:1] [0] [48] [0059DC50AE01] [0] [*]/20
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:1] [0] [48] [0059DC50AE4C] [0] [*]/20
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:1] [0] [48] [0059DC50AE4C] [32] [192.168.1.81]/24
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:1] [0] [48] [0059DC50AE4C] [128] [2001:DB8:201::81]/36
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:1] [0] [48] [0059DC50AE4C] [128] [FE80::259:DCFF:FE50:AE4C]/36
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:1] [0] [48] [A0F84910BCCC] [32] [192.168.1.201]/24
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:1] [0] [48] [A0F84910BCCC] [128] [2001:DB8:201::201]/36
      10.1.1.10          0          100          0 ?
Route Distinguisher: 10.1.1.10:2
*>i [2] [10.1.1.10:2] [0] [48] [0059DC50AE01] [0] [*]/20
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:2] [0] [48] [0059DC50AE42] [0] [*]/20
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:2] [0] [48] [0059DC50AE42] [32] [192.168.2.81]/24
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:2] [0] [48] [A0F84910BCC2] [32] [192.168.2.202]/24
      10.1.1.10          0          100          0 ?
*>i [2] [10.1.1.10:2] [0] [48] [A0F84910BCC2] [128] [2001:DB8:202::202]/36
      10.1.1.10          0          100          0 ?
Route Distinguisher: 10.2.2.20:1
*> [2] [10.2.2.20:1] [0] [48] [0018736C56C3] [0] [*]/20
      ::                  32768 ?
*> [2] [10.2.2.20:1] [0] [48] [0018736C56C3] [32] [192.168.1.89]/24
      ::                  32768 ?
*>i [2] [10.2.2.20:1] [0] [48] [0059DC50AE01] [0] [*]/20
      10.1.1.10          0          100          0 ?
*>i [2] [10.2.2.20:1] [0] [48] [0059DC50AE4C] [0] [*]/20
      10.1.1.10          0          100          0 ?
*>i [2] [10.2.2.20:1] [0] [48] [0059DC50AE4C] [32] [192.168.1.81]/24
      10.1.1.10          0          100          0 ?
*>i [2] [10.2.2.20:1] [0] [48] [0059DC50AE4C] [128] [2001:DB8:201::81]/36
      10.1.1.10          0          100          0 ?
*>i [2] [10.2.2.20:1] [0] [48] [0059DC50AE4C] [128] [FE80::259:DCFF:FE50:AE4C]/36
      10.1.1.10          0          100          0 ?
*> [2] [10.2.2.20:1] [0] [48] [380E4D9B6A48] [32] [192.168.1.201]/24
      ::                  32768 ?
*> [2] [10.2.2.20:1] [0] [48] [380E4D9B6A48] [128] [2001:DB8:201::201]/36
      ::                  32768 ?
*>i [2] [10.2.2.20:1] [0] [48] [A0F84910BCCC] [32] [192.168.1.201]/24
      10.1.1.10          0          100          0 ?
*>i [2] [10.2.2.20:1] [0] [48] [A0F84910BCCC] [128] [2001:DB8:201::201]/36
      10.1.1.10          0          100          0 ?
Route Distinguisher: 10.2.2.20:2
*> [2] [10.2.2.20:2] [0] [48] [0018736C5681] [0] [*]/20
      ::                  32768 ?
*> [2] [10.2.2.20:2] [0] [48] [0018736C56C2] [0] [*]/20
      ::                  32768 ?
*> [2] [10.2.2.20:2] [0] [48] [0018736C56C2] [32] [192.168.2.89]/24
      ::                  32768 ?
*>i [2] [10.2.2.20:2] [0] [48] [0059DC50AE01] [0] [*]/20
      10.1.1.10          0          100          0 ?

```

```

*>i [2][10.2.2.20:2][0][48][0059DC50AE42][0][*]/20
      10.1.1.10          0 100 0 ?
*>i [2][10.2.2.20:2][0][48][0059DC50AE42][32][192.168.2.81]/24
      10.1.1.10          0 100 0 ?
*> [2][10.2.2.20:2][0][48][380E4D9B6A42][32][192.168.2.202]/24
      ::                  32768 ?
*> [2][10.2.2.20:2][0][48][380E4D9B6A42][128][2001:DB8:202::202]/36
      ::                  32768 ?
*>i [2][10.2.2.20:2][0][48][A0F84910BCC2][32][192.168.2.202]/24
      10.1.1.10          0 100 0 ?
*>i [2][10.2.2.20:2][0][48][A0F84910BCC2][128][2001:DB8:202::202]/36
      10.1.1.10          0 100 0 ?
Route Distinguisher: 103:2
*>i [5][103:2][0][24][10.1.13.0]/17
      10.1.1.10          0 100 0 ?
*>i [5][103:2][0][24][192.168.1.0]/17
      10.1.1.10          0 100 0 ?
*>i [5][103:2][0][24][192.168.2.0]/17
      10.1.1.10          0 100 0 ?
*>i [5][103:2][0][64][2001:DB8:201::]/29
      10.1.1.10          0 100 0 ?
*>i [5][103:2][0][64][2001:DB8:202::]/29
      10.1.1.10          0 100 0 ?
Route Distinguisher: 104:2 (default for vrf green)
*> [5][104:2][0][24][10.1.14.0]/17
      0.0.0.0            0 32768 ?
*> [5][104:2][0][24][192.168.1.0]/17
      0.0.0.0            0 32768 ?
*> [5][104:2][0][24][192.168.2.0]/17
      0.0.0.0            0 32768 ?
*> [5][104:2][0][64][2001:DB8:201::]/29
      ::                  0 32768 ?
*> [5][104:2][0][64][2001:DB8:202::]/29
      ::                  0 32768 ?

```

show ip route vrf green

VTEP 1

The following example shows the output for the **show ip route vrf vrf-name** command on VTEP 1:

```

VTEP1# show ip route vrf green
Routing Table: green
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, m - OMP
       n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       H - NHRP, G - NHRP registered, g - NHRP registration summary
       o - ODR, P - periodic downloaded static route, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
C    10.1.13.0/24 is directly connected, Loopback13
L    10.1.13.13/32 is directly connected, Loopback13
B    10.1.14.0/24 [200/0] via 10.2.2.20, 01:30:02, Vlan200
     192.168.1.0/24 is variably subnetted, 3 subnets, 2 masks

```

```

C      192.168.1.0/24 is directly connected, Vlan201
B      192.168.1.89/32 [200/0] via 10.2.2.20, 00:04:05, Vlan200
L      192.168.1.201/32 is directly connected, Vlan201
      192.168.2.0/24 is variably subnetted, 3 subnets, 2 masks
C      192.168.2.0/24 is directly connected, Vlan202
B      192.168.2.89/32 [200/0] via 10.2.2.20, 00:04:10, Vlan200
L      192.168.2.202/32 is directly connected, Vlan202

```

VTEP 2

The following example shows the output for the **show ip route vrf vrf-name** command on VTEP 2:

```

VTEP2# show ip route vrf green
Routing Table: green
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, m - OMP
       n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       H - NHRP, G - NHRP registered, g - NHRP registration summary
       o - ODR, P - periodic downloaded static route, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
B      10.1.13.0/24 [200/0] via 10.1.1.10, 01:31:17, Vlan200
C      10.1.14.0/24 is directly connected, Loopback14
L      10.1.14.14/32 is directly connected, Loopback14
      192.168.1.0/24 is variably subnetted, 3 subnets, 2 masks
C      192.168.1.0/24 is directly connected, Vlan201
B      192.168.1.81/32 [200/0] via 10.1.1.10, 01:39:53, Vlan200
L      192.168.1.201/32 is directly connected, Vlan201
      192.168.2.0/24 is variably subnetted, 3 subnets, 2 masks
C      192.168.2.0/24 is directly connected, Vlan202
B      192.168.2.81/32 [200/0] via 10.1.1.10, 01:39:30, Vlan200
L      192.168.2.202/32 is directly connected, Vlan202

```

show platform software fed switch active matm mactable vlan

VTEP 1

The following examples show the output for the **show platform software fed switch active matm mactable vlan vlan-id** command on VTEP 1:



Note The MAC address of the peer's core SVI interface must be present in the core VLAN.

```

VTEP1# show platform software fed switch active matm macTable vlan 200
VLAN  MAC                    Type  Seq#  EC_Bi  Flags  machandle          siHandle
      riHandle                diHandle                    *a_time  *e_time  ports
-----
200   a0f8.4910.bce2             0x8002      0  19880      64  0x7f5d8503fd48    0x7f5d852b6d28

```

```

0x0          0x5234          0          0  Vlan200
200  380e.4d9b.6a4a  0x1000001  0    0    64  0x7f5d855bfaa8  0x7f5d852aca68
    0x7f5d851c7078  0x0          0          0  RLOC 10.2.2.20 adj_id 126

```

Total Mac number of addresses:: 2

VTEP1# show platform software fed switch active matm macTable vlan 201

VLAN	MAC	Type	Seq#	EC_Bi	Flags	machandle	siHandle
	riHandle	diHandle			*a_time	*e_time	ports
201	00aa.00bb.00cc 0x0	0x8002 0x0	0	42949	64 0	0x7f5d85007b88 0 Vlan201	0x7f5d852b6d28
201	0059.dc50.ae01 0x0	0x1 0x7f5d8517eae8	9	0	0 300	0x7f5d852abaf8 9 GigabitEthernet1/0/1	0x7f5d85035248
201	a0f8.4910.bccc 0x0	0x8002 0x5234	0	19880	64 0	0x7f5d852ad618 9 Vlan201	0x7f5d852b6d28
201	0059.dc50.ae4c 0x0	0x1 0x7f5d8517eae8	16	0	0 300	0x7f5d855b3ff8 95 GigabitEthernet1/0/1	0x7f5d855a2858
201	380e.4d9b.6a48 0x0	0x8002 0x5234	0	0	64 0	0x7f5d84fbf948 95 Vlan201	0x7f5d852b6d28
201	0018.736c.56c3 0x7f5d855c6098	0x1000001 0x0	0	0	64 0	0x7f5d855c8268 95 RLOC 10.2.2.20 adj_id 36	0x7f5d852368b8

Total Mac number of addresses:: 6

VTEP1# show platform software fed switch active matm macTable vlan 202

VLAN	MAC	Type	Seq#	EC_Bi	Flags	machandle	siHandle
	riHandle	diHandle			*a_time	*e_time	ports
202	a0f8.4910.bcc2 0x0	0x8002 0x0	0	19880	64 0	0x7f5d8503d288 0 Vlan202	0x7f5d852b6d28
202	0059.dc50.ae01 0x0	0x1 0x7f5d8517eae8	10	0	0 300	0x7f5d852ac8b8 15 GigabitEthernet1/0/1	0x7f5d852ac668
202	0018.736c.5681 0x7f5d8518dea8	0x1000001 0x0	0	0	64 0	0x7f5d855ba7a8 15 RLOC 10.2.2.20 adj_id 125	0x7f5d855b0c58
202	0059.dc50.ae42 0x0	0x1 0x7f5d8517eae8	17	0	0 300	0x7f5d8518e848 225 GigabitEthernet1/0/1	0x7f5d855a5258
202	380e.4d9b.6a42 0x0	0x8002 0x5234	0	0	64 0	0x7f5d855a59a8 225 Vlan202	0x7f5d852b6d28
202	0018.736c.56c2 0x7f5d8518dea8	0x1000001 0x0	0	0	64 0	0x7f5d8523d2b8 225 RLOC 10.2.2.20 adj_id 125	0x7f5d855b0c58

Total Mac number of addresses:: 6

VTEP 2

The following examples show the output for the **show platform software fed switch active matm mactable vlan *vlan-id*** command on VTEP 2:



Note The MAC address of the peer's core SVI interface must be present in the core VLAN.

```
VTEP2# show platform software fed switch active matm macTable vlan 200
VLAN  MAC                               Type  Seq#  EC_Bi  Flags  machandle  siHandle
      riHandle                            diHandle  *a_time  *e_time  ports
-----
200   380e.4d9b.6a4a                       0x8002  0     128    64     0x7fa88557f3a8  0x7fa885574e38
      0x0                                  0x5174  0         0     0     Vlan200
200   a0f8.4910.bce2                       0x1000001  0     0      64     0x7fa8859a3d38  0x7fa885947ba8
      0x7fa88598bfb8                       0x0      0         0     0     RLOC 10.1.1.10 adj_id 155

Total Mac number of addresses:: 2
```

```
VTEP2# show platform software fed switch active matm macTable vlan 201
VLAN  MAC                               Type  Seq#  EC_Bi  Flags  machandle  siHandle
      riHandle                            diHandle  *a_time  *e_time  ports
-----
201   380e.4d9b.6a48                       0x8002  0  42949  64     0x7fa885970018  0x7fa885574e38
      0x0                                  0x5174  0         0     0     Vlan201
201   0059.dc50.ae01                       0x1000001  0     0      64     0x7fa8849e1be8  0x7fa88598da48
      0x7fa88598e1f8                       0x0      0         0     0     RLOC 10.1.1.10 adj_id 153
201   0059.dc50.ae4c                       0x1000001  0     0      64     0x7fa885993e68  0x7fa88598da48
      0x7fa88598e1f8                       0x0      0         0     0     RLOC 10.1.1.10 adj_id 153
201   a0f8.4910.bccc                       0x8002  0     0      64     0x7fa8859acc48  0x7fa885574e38
      0x0                                  0x5174  0         0     0     Vlan201
201   0018.736c.56c3                       0x1      68     0     0     0x7fa8859d3908  0x7fa88599e108
      0x0                                  0x7fa884f079d8  300      247  GigabitEthernet1/0/1

Total Mac number of addresses:: 5
```

```
VTEP2# show platform software fed switch active matm macTable vlan 202
VLAN  MAC                               Type  Seq#  EC_Bi  Flags  machandle  siHandle
      riHandle                            diHandle  *a_time  *e_time  ports
-----
202   380e.4d9b.6a42                       0x8002  0  19018  64     0x7fa885994cd8  0x7fa885574e38
      0x0                                  0x5174  0         0     0     Vlan202
202   0018.736c.5681                       0x1      9     0     0     0x7fa88599c4e8  0x7fa88599c218
      0x0                                  0x7fa884f079d8  300         7  GigabitEthernet1/0/1
202   0059.dc50.ae01                       0x1000001  0     0      64     0x7fa8859a3098  0x7fa8859a2dc8
      0x7fa88599ee48                       0x0      0         0     7     RLOC 10.1.1.10 adj_id 154
```

```

202    0059.dc50.ae42    0x1000001    0    0    64 0x7fa8849e6b78    0x7fa8859a2dc8
      0x7fa88599ee48    0x0          0          0          0    7 RLOC 10.1.1.10 adj_id 154

202    a0f8.4910.bcc2    0x8002    0    0    64 0x7fa88594ddb8    0x7fa885574e38
      0x0          0x5174    0          0          0    7 Vlan202

202    0018.736c.56c2    0x1    67    0    0 0x7fa8859d3488    0x7fa8859834f8
      0x0          0x7fa884f079d8    300    267 GigabitEthernet1/0/1

Total Mac number of addresses:: 6

```

Verifying EVPN VXLAN Integrated Routing and Bridging

The following sections provide information about how to verify EVPN VXLAN integrated routing and bridging:

Verifying EVPN VXLAN Layer 2 Overlay Network

See [Verifying EVPN VXLAN Layer 2 Overlay Network](#) for the list of commands.

Verifying EVPN VXLAN Layer 3 Overlay Network

See [Verifying EVPN VXLAN Layer 3 Overlay Network](#) for the list of commands.

Verifying Distributed Anycast Gateway

The following table lists the **show** commands that are used to verify distributed anycast gateway:

Table 2: Commands to Verify Distributed Anycast Gateway

Command	Purpose
show l2vpn evpn default-gateway	Displays the default gateway database.
show l2vpn l2route default-gateway	Displays the list of sent or received default gateway routes.
show mac address-table	Displays the list of MAC addresses received in default gateway routes that are installed as static MAC addresses for an SVI interface.