

Layer 3 EVN over SR MPLS [eBGP] in Nexus 9300 configureren

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Inleiding

Dit document beschrijft hoe u L3 Ethernet VPN (EVPN) over Segment Routing (SR) Multiprotocol Label Switching op Nexus 9300 met externe BGP kunt implementeren.

Voorwaarden

Vereisten

Cisco raadt kennis van de volgende onderwerpen aan:

- BGP-protocol (border gateway protocol)
- L3VPN
- EVPN
- SR

Gebruikte componenten

De informatie in dit document is gebaseerd op de volgende software- en hardware-versies:

- SPINE Hardware - 9336C-FX die release 10.2(2) uitvoert
- LEAF Hardware - 93240YC-FX2 die release 10.2(2) uitvoert
- CLIENT - 92160YC-X (host-1), Catalyst-3850 (host-2)

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk live is, moet u zorgen dat u de potentiële impact van elke opdracht begrijpt.

Achtergrondinformatie

MPLS L3VPN-recap

Een VPN is:

- Een IP-gebaseerd netwerk dat particuliere netwerkservices levert via een openbare infrastructuur.
- Een reeks plaatsen die wordt toegestaan om met elkaar privé over Internet of andere openbare of privé netwerken te communiceren.

Conventionele VPN's worden gecreëerd door de configuratie van een volledig netwerk van tunnels of permanente virtuele circuits (PVC's) naar alle locaties in een VPN. Dit type van VPN is niet gemakkelijk te handhaven of uit te breiden, aangezien de toevoeging van een nieuwe plaats een verandering in elk randapparaat in VPN vereist.

Op MPLS gebaseerde VPN's worden gemaakt in Layer 3 en zijn gebaseerd op het peer-model. Met het peer-model kunnen de serviceprovider en de CE Layer 3-routing informatie uitwisselen. De dienstverlener geeft de gegevens door tussen de CE-sites zonder CE-betrokkenheid.

MPLS VPN's zijn gemakkelijker te beheren en uit te breiden dan conventionele VPN's. Wanneer een nieuwe site wordt toegevoegd aan een MPLS VPN, hoeft alleen de edge-router van de serviceprovider die services levert aan de klantensite te worden bijgewerkt.

Dit zijn de componenten van MPLS VPN:

- Provider (P) router - router in de kern van het providernetwerk. PE-routers voeren MPLS-switching uit en maken geen VPN-labels aan gerouteerde pakketten toe. VPN-labels worden gebruikt om gegevenspakketten naar het juiste privé-netwerk of CE edge-router te leiden.
- Provider Edge (PE) router - router die het VPN-label aan inkomende pakketten koppelt op basis van de interface of subinterface waarop ze worden ontvangen, en ook de MPLS-kernlabels aansluit. Een PE-router wordt rechtstreeks aan een router gekoppeld.
- Customer (C) router - router in het Internet Service Provider (ISP) of ondernemingsnetwerk.
- Customer Edge (CE) router - Edge-router op het netwerk van de ISP die verbinding maakt met de PE-router op het netwerk. Een CE-router moet met een PE-router communiceren.

Overzicht van EVPN met L3VPN (MPLS SR)

Data Center (DC) implementaties hebben Virtual Extensible LAN (VXLAN) EVPN of MPLS EVPN voor de voordelen zoals EVPN control-plane learning, multitenancy, naadloze mobiliteit, redundantie en eenvoudiger POD-toevoegingen. Op dezelfde manier is de CORE een Label Distribution Protocol (LDP)-gebaseerd MPLS L3VPN-netwerk of een overgang van de traditionele MPLS L3VPN LDP-gebaseerde onderlay naar een meer geavanceerde oplossing zoals SR.

SR wordt toegepast voor de voordelen ervan, zoals:

- Unified Internal Gateway Protocol (IGP)- en MPLS-besturingsplanes
- Verkeerstechnieken vereenvoudigen
- Eenvoudige configuratie
- Softwaregedefinieerde netwerken (SDN)

EVPN (RFC 7432) is een op BGP MPLS gebaseerde oplossing die is gebruikt voor Ethernet-services van de volgende generatie in een gevirtualiseerd datacenternetwerk. Het maakt gebruik van verschillende blokken zoals Route.

Onderscheid (RD), Route Target (RT) en Virtual Routing and Forwarding (VRF) van MPLS-technologieën die bestaan.

L3 EVPN over SR, geïntroduceerd in NXOS 7.0(3)I6(1) release gebruikt de EVPN Type-5 route met MPLS inkapseling. Het biedt multi-tenant, schaalbaarheid en hoge prestaties voor geëvolueerde datacenterservices.

Opmerking: In DC kan het gegevensvlak VXLAN of MPLS zijn.

Traditionele MPLS L3 VPN

Belangrijkste bouwstenen: RD, RT en VRF

Onderleglaag voor transport: IGP, LDP en RSVP-TE

Overlay Layer voor Service: VPNv4 en VPNv6

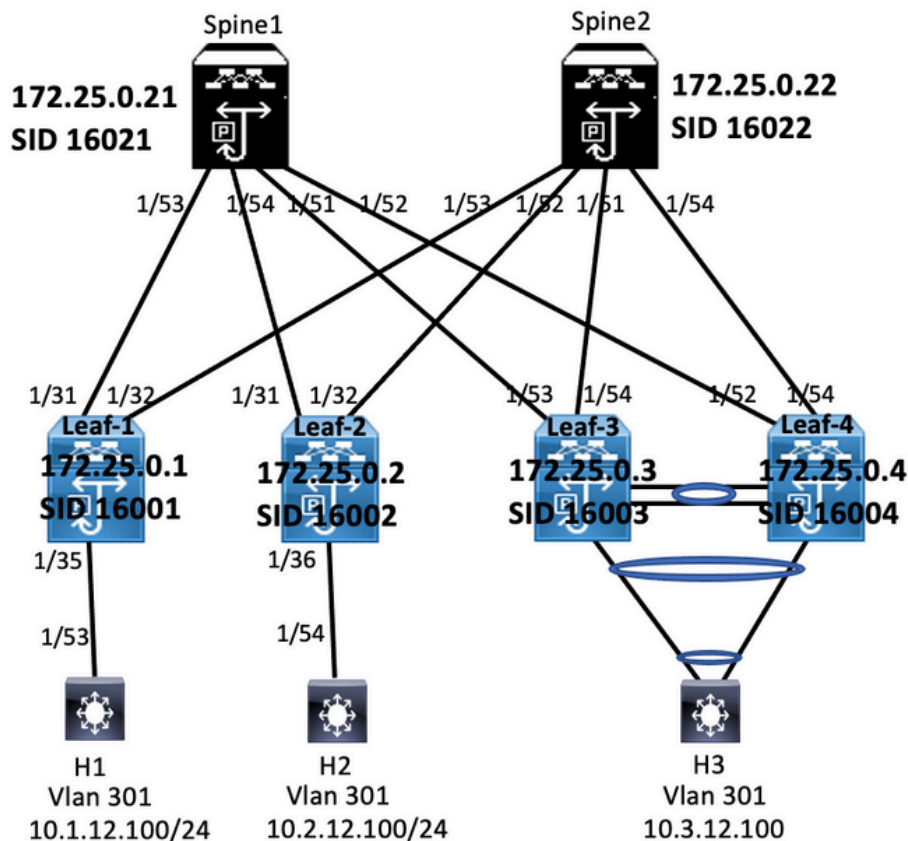
MPLS L3 VPN over SR

Belangrijkste bouwstenen: RD, RT en VRF

Onderleglaag voor transport: IGP/BGP-LU en SR-TE

Overlay Layer voor Service: EVPN

Netwerkdigram



Configuratie op hoog niveau

1. Installatiefuncties
2. IP-adres configureren - Underlay
3. IGP/MP configureren - BGP
4. VLAN- en EVPN-overlay configureren
5. E-BGP configureren tussen hosts en LEAF's

Leaf-1		
Enabling Features	Interface Configuration	BGP/EVPN Configuration
<pre>install feature-set mpls feature-set mpls feature bgp feature mpls segment-routing feature mpls evpn feature interface-vlan feature lisp feature mpls oam feature mpls segment-routing traffic-engineering vlan 1,301-310 segment-routing mpls global-block 16000 24000 connected-prefix-sid-map address-family ipv4 172.25.0.1/32 absolute 16001 ip prefix-list node-sid-loopback seq 10 permit 172.25.0.1/32 ip as-path access-list LOCALLY-ORIGINATE seq 1 permit "65534" ip as-path access-list LOCALLY-ORIGINATE seq 2 permit "*" route-map NODE-SID-MED permit 10 match ip address prefix-list node-sid-loopback set metric 100 route-map NODE-SID-MED permit 20 route-map SET_NH permit 5 match community MATCH-65534:65534. set ip next-hop unchanged route-map SET_NH permit 10 match as-path LOCALLY-ORIGINATE set ip next-hop 172.25.0.1 vrf context VPN-A rd auto address-family ipv4 unicast route-target import 301:301 route-target import 301:301 evpn route-target export 301:301 route-target export 301:301 evpn vrf context VPN-B rd auto address-family ipv4 unicast route-target import 302:302 route-target import 302:302 evpn route-target export 302:302 route-target export 302:302 evpn</pre>	<pre>interface Vlan301 ip access-group deny-to-core_ra in vrf member VPN-A no ip redirects ip address 10.1.12.1/24 ip directed-broadcast ip-dir-bcast ip arp timeout 720 interface Vlan302 ip access-group deny-to-core_ra in vrf member VPN-B no ip redirects ip address 10.1.13.1/24 ip directed-broadcast ip-dir-bcast ip arp timeout 720 interface Ethernet1/31 description connected to spine1 - 1/53 - 192.168.1.10 mtu 9216 logging event port link-status no ip redirects ip address 192.168.1.9/30 ip arp timeout 14400 mpls ip forwarding interface Ethernet1/32 description connected to spine2 - 1/53 - 192.168.1.14 mtu 9216 logging event port link-status no ip redirects ip address 192.168.1.13/30 ip arp timeout 14400 mpls ip forwarding interface Ethernet1/35 switchport switchport mode trunk switchport trunk allowed vlan 301-310 no shutdown interface loopback0 ip address 172.25.0.1/32 no shut</pre>	<pre>router bgp 65534 router-id 172.25.0.1 disable-policy-batching bestpath as-path multipath-relax bestpath med missing-as-worst log-neighbor-changes event-history detail size large nexthop suppress-default-resolution address-family ipv4 unicast network 172.25.0.1/32 maximum-paths 4 maximum-paths ibgp 4 allocate-label route-map node-sid-label address-family ipv4 labeled-unicast prefix-priority high address-family I2vpn evpn template peer EBGP-SPINE remote-as 64087 description EBGP-PEERING-to-AGG address-family ipv4 unicast allowas-in 1 send-community send-community extended route-map NODE-SID-MED out no advertise local-labeled-route soft-reconfiguration inbound address-family ipv4 labeled-unicast allowas-in 1 send-community send-community extended route-map NODE-SID-MED out soft-reconfiguration inbound always address-family I2vpn evpn allowas-in 1 send-community send-community extended filter-list LOCALLY-ORIGINATE out route-map SET_NH out encapsulation mpls neighbor 192.168.1.10 inherit peer EBGP-SPINE neighbor 192.168.1.14 inherit peer EBGP-SPINE</pre>

Leaf-2		
Enabling Features	Interface Configuration	BGP/EVPN Configuration
<pre>install feature-set mpls feature-set mpls feature bgp feature mpls segment-routing feature mpls evpn feature interface-vlan feature lisp feature mpls oam feature mpls segment-routing traffic-engineering vlan 1,301-310 segment-routing mpls global-block 16000 24000 connected-prefix-sid-map address-family ipv4 172.25.0.2/32 absolute 16002 ip prefix-list node-sid-loopback seq 10 permit 172.25.0.2/32 ip as-path access-list LOCALLY-ORIGINATE seq 1 permit "65534" ip as-path access-list LOCALLY-ORIGINATE seq 2 permit "*" route-map NODE-SID-MED permit 10 match ip address prefix-list node-sid-loopback set metric 100 route-map NODE-SID-MED permit 20 route-map SET_NH permit 5 match community MATCH-65534:65534 set ip next-hop unchanged route-map SET_NH permit 10 match as-path LOCALLY-ORIGINATE set ip next-hop 172.25.0.2 vrf context VPN-A rd auto address-family ipv4 unicast route-target import 301:301 route-target import 301:301 evpn route-target export 301:301 route-target export 301:301 evpn vrf context VPN-B rd auto address-family ipv4 unicast route-target import 302:302 route-target import 302:302 evpn route-target export 302:302 route-target export 302:302 evpn</pre>	<pre>interface Vlan301 no shutdown ip access-group deny-to-core_ra in vrf member VPN-A no ip redirects ip address 10.2.12.1/24 ip directed-broadcast ip-dir-bcast ip arp timeout 720 interface Vlan302 no shutdown ip access-group deny-to-core_ra in vrf member VPN-B no ip redirects ip address 10.2.13.1/24 ip directed-broadcast ip-dir-bcast ip arp timeout 720 interface Ethernet1/3 switchport switchport mode trunk switchport trunk allowed vlan 301-310 no shutdown interface Ethernet1/31 description connected to spine1 - 1/54 - 192.168.2.10 mtu 9216 logging event port link-status no ip redirects ip address 192.168.2.9/30 ip arp timeout 14400 mpls ip forwarding interface Ethernet1/32 description connected to spine2 - 1/52 - 192.168.2.14 mtu 9216 logging event port link-status no ip redirects ip address 192.168.2.13/30 ip arp timeout 14400 mpls ip forwarding interface Ethernet1/36 switchport mode trunk switchport trunk allowed vlan 301-310 interface loopback0 ip address 172.25.0.2/32</pre>	<pre>router bgp 65534 router-id 172.25.0.2 disable-policy-batching bestpath as-path multipath-relax bestpath med missing-as-worst log-neighbor-changes event-history detail size large nexthop suppress-default-resolution address-family ipv4 unicast network 172.25.0.2/32 maximum-paths 4 maximum-paths ibgp 4 allocate-label route-map node-sid-label address-family ipv4 labeled-unicast prefix-priority high address-family I2vpn evpn template peer EBGP-SPINE remote-as 64087 description EBGP-PEERING-to-AGG address-family ipv4 unicast allowas-in 1 send-community send-community extended route-map NODE-SID-MED out soft-reconfiguration inbound always address-family I2vpn evpn allowas-in 1 send-community send-community extended filter-list LOCALLY-ORIGINATE out route-map SET_NH out encapsulation mpls neighbor 192.168.2.10 inherit peer EBGP-SPINE neighbor 192.168.2.14 inherit peer EBGP-SPINE</pre>

Spine-1		
Enabling Features	Interface Configuration	BGP/EVPN Configuration
<pre>install feature-set mpls feature-set mpls feature bgp feature mpls segment-routing feature mpls evpn feature interface-vlan feature lisp feature mpls oam feature mpls segment-routing traffic-engineering vlan 1 segment-routing mpls global-block 16000 24000 connected-prefix-sid-map address-family ipv4 172.25.0.21/32 absolute 16021 ip prefix-list NH-RESTRICT seq 5 permit 0.0.0.0/0 ip prefix-list node-sid-loopback seq 5 permit 172.25.0.21/32 route-map NH-RESTRICT deny 10 match ip address prefix-list NH-RESTRICT route-map NH-RESTRICT permit 20 route-map NH_UNCHG permit 10 set ip next-hop unchanged</pre>	<pre>interface Ethernet1/53 description connected to Leaf1 - 1/31 - 192.168.1.9 mtu 9216 logging event port link-status no ip redirects ip address 192.168.1.10/30 ip arp timeout 14400 mpls ip forwarding no shutdown interface Ethernet1/54 description connected to Leaf2- 1/31 - 192.168.2.9 mtu 9216 logging event port link-status no ip redirects ip address 192.168.2.10/30 ip arp timeout 14400 mpls ip forwarding no shutdown interface loopback0 ip address 172.25.0.21/32 no shutdown</pre>	<pre>router bgp 64087 router-id 172.25.0.21 bestpath as-path multipath-relax bestpath med missing-as-worst log-neighbor-changes nexthop suppress-default-resolution address-family ipv4 unicast network 172.25.0.21/32 maximum-paths 4 nexthop route-map NH-RESTRICT allocate-label route-map node-sid-label address-family ipv4 labeled-unicast prefix-priority high address-family l2vpn evpn retain route-target all template peer EBG-ACCESS remote-as 65534 description EBG-PEERING-to-ACCESS address-family ipv4 unicast disable-peer-as-check send-community send-community extended default-originate no advertise local-labeled-route soft-reconfiguration inbound address-family ipv4 labeled-unicast disable-peer-as-check send-community send-community extended soft-reconfiguration inbound address-family l2vpn evpn disable-peer-as-check send-community send-community extended route-map NH_UNCHG out encapsulation mpls neighbor 192.168.1.9 inherit peer EBG-ACCESS neighbor 192.168.2.9 inherit peer EBG-ACCESS</pre>

Spine-2		
Enabling Feature	Interface Configuration	BGP/EVPN Configuration
<pre>install feature-set mpls feature-set mpls feature bgp feature mpls segment-routing feature mpls evpn feature interface-vlan feature lisp feature mpls oam feature mpls segment-routing traffic-engineering vlan 1 segment-routing mpls global-block 16000 24000 connected-prefix-sid-map address-family ipv4 172.25.0.22/32 absolute 16021 ip prefix-list NH-RESTRICT seq 5 permit 0.0.0.0/0 ip prefix-list node-sid-loopback seq 5 permit 172.25.0.22/32 route-map NH-RESTRICT deny 10 match ip address prefix-list NH-RESTRICT route-map NH-RESTRICT permit 20 route-map NH_UNCHG permit 10 set ip next-hop unchanged</pre>	<pre>interface Ethernet1/52 description connected to Leaf2 - 1/31 - 192.168.2.13 mtu 9216 logging event port link-status no ip redirects ip address 192.168.2.14/30 ip arp timeout 14400 mpls ip forwarding no shutdown interface Ethernet1/53 description connected to Leaf2- 1/32 - 192.168.1.13 mtu 9216 logging event port link-status no ip redirects ip address 192.168.1.14/30 ip arp timeout 14400 mpls ip forwarding no shutdown interface loopback0 ip address 172.25.0.22/32 no shut</pre>	<pre>router bgp 64087 router-id 172.25.0.22 bestpath as-path multipath-relax bestpath med missing-as-worst log-neighbor-changes nexthop suppress-default-resolution address-family ipv4 unicast network 172.25.0.22/32 maximum-paths 4 nexthop route-map NH-RESTRICT allocate-label route-map node-sid-label address-family ipv4 labeled-unicast prefix-priority high address-family l2vpn evpn retain route-target all template peer EBG-ACCESS remote-as 65534 description EBG-PEERING-to-ACCESS address-family ipv4 unicast disable-peer-as-check send-community send-community extended default-originate no advertise local-labeled-route soft-reconfiguration inbound address-family ipv4 labeled-unicast disable-peer-as-check send-community send-community extended soft-reconfiguration inbound address-family l2vpn evpn disable-peer-as-check send-community send-community extended route-map NH_UNCHG out encapsulation mpls neighbor 192.168.1.13 inherit peer EBG-ACCESS neighbor 192.168.2.13 inherit peer EBG-ACCESS</pre>

Host-1 Configuration

```
install feature-set mpls
feature mpls
interface Ethernet1/53
switchport
switchport mode trunk
switchport trunk allowed vlan 301-310
no shut

interface vlan 301
no shutdown
no ip redirects
ip address 10.1.12.100/24
ip directed-broadcast ip-dir-bcast
ip arp timeout 720
```

Host-2 Configuration

```
install feature-set mpls
feature mpls
interface Ethernet1/54
switchport
switchport mode trunk
switchport trunk allowed vlan 301-310
no shut

interface vlan 301
no shutdown
no ip redirects
ip address 10.2.12.100/24
ip directed-broadcast ip-dir-bcast
ip arp timeout 720
```

Verifiëren

Gebruik deze sectie om te controleren of uw configuratie goed werkt.

```
H1(config)# show ip int brief
```

```
IP Interface Status for VRF "default"(1)
Interface      IP Address  Interface Status
Vlan301        10.1.12.100 protocol-up/link-up/admin-up
```

```
H1(config)# ping 10.2.12.100
PING 10.2.12.100 (10.2.12.100): 56 data bytes
64 bytes from 10.2.12.100: icmp_seq=0 ttl=251 time=0.994 ms
64 bytes from 10.2.12.100: icmp_seq=1 ttl=251 time=0.586 ms
64 bytes from 10.2.12.100: icmp_seq=2 ttl=251 time=0.677 ms
64 bytes from 10.2.12.100: icmp_seq=3 ttl=251 time=0.615 ms
64 bytes from 10.2.12.100: icmp_seq=4 ttl=251 time=0.597 ms
```

```
--- 10.2.12.100 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.586/0.693/0.994 ms
```

```
H2(config)# show ip int brief
```

```
IP Interface Status for VRF "default"(1)
Interface      IP Address  Interface Status
Vlan301        10.2.12.100 protocol-up/link-up/admin-up
```

```
H2(config)# ping 10.1.12.100
PING 10.1.12.100 (10.1.12.100): 56 data bytes
64 bytes from 10.1.12.100: icmp_seq=0 ttl=251 time=1.043 ms
64 bytes from 10.1.12.100: icmp_seq=1 ttl=251 time=1.933 ms
64 bytes from 10.1.12.100: icmp_seq=2 ttl=251 time=0.865 ms
64 bytes from 10.1.12.100: icmp_seq=3 ttl=251 time=0.668 ms
64 bytes from 10.1.12.100: icmp_seq=4 ttl=251 time=0.713 ms
```

```
--- 10.1.12.100 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.668/1.044/1.933 ms
```

Problemen oplossen

Deze sectie bevat informatie waarmee u problemen met de configuratie kunt oplossen.

```
spine1(config-router-af)# show mpls switching
```

Legend:

(P)=Protected, (F)=FRR active, (*)=more labels in stack.

IPv4:

In-Label	Out-Label	FEC name	Out-Interface	Next-Hop
16001	Pop Label	172.25.0.1/32	Eth1/53	10.1.1.9
16002	Pop Label	172.25.0.2/32	Eth1/54	10.2.1.9

In-Label	VRF
492287	default

Block	Label-Range
1	16000 - 24000

```
spine1(config-router-af)# show bgp l2vpn evpn
```

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 17, Local Router ID is 172.25.0.21

Network	Next Hop	Metric	LocPrf	Weight	Path
Route Distinguisher: 172.25.0.1:3					
*>e[5]:[0]:[0]:[24]:[12.1.12.0]/224	172.25.0.1	4294967295		0	65534 i
Route Distinguisher: 172.25.0.1:4					
*>e[5]:[0]:[0]:[24]:[12.1.13.0]/224	172.25.0.1	4294967295		0	65534 i
Route Distinguisher: 172.25.0.2:3					
*>e[5]:[0]:[0]:[24]:[10.2.12.0]/224	172.25.0.2	4294967295		0	65534 i
Route Distinguisher: 172.25.0.2:4					
*>e[5]:[0]:[0]:[24]:[10.2.13.0]/224	172.25.0.2	4294967295		0	65534 i

```

ping 10.1.12.200
PING 10.1.12.200 [10.1.12.200]: 56 data bytes
64 bytes from 10.1.12.200: icmp_seq=0 ttl=254 time=1.14 ms
64 bytes from 10.1.12.200: icmp_seq=1 ttl=254 time=0.687 ms
64 bytes from 10.1.12.200: icmp_seq=2 ttl=254 time=0.636 ms
64 bytes from 10.1.12.200: icmp_seq=3 ttl=254 time=0.636 ms
64 bytes from 10.1.12.200: icmp_seq=4 ttl=254 time=0.699 ms
--- 10.1.12.200 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.636/0.763/1.14 ms

H3# show ip int brief
IP Interface Status for VRF "default"(1)
Interface IP Address Interface Status
Vlan301 10.1.12.100 protocol-up/link-up/admin-up

H3# show mac address-table
Legend:
* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since last seen, + - primary entry using vPC Peer-Link,
(T) - True, (F) - False, C - ControlPlane MAC, - - vsan
VLAN MAC Address Type age Secure NTFY Ports
-----
* 301 0000.0000.1111 dynamic O F F Po30
* 301 00ea.bd27.86ef dynamic O F F Po30
G - 00ea.bd27.6285 static - F F sup-eth1(R)
G 301 00ea.bd27.6285 static - F F sup-eth1(R)

```

```

H3# show ip interface brief
Interface IP Address Interface Status
Vlan301 10.1.12.200 protocol-up/link-up/admin-up
H3# ping 10.1.12.100
PING 10.1.12.100 [10.1.12.100]: 56 data bytes
64 bytes from 10.1.12.100: icmp_seq=0 ttl=254 time=1.211 ms
64 bytes from 10.1.12.100: icmp_seq=1 ttl=254 time=0.694 ms
64 bytes from 10.1.12.100: icmp_seq=2 ttl=254 time=0.68 ms
64 bytes from 10.1.12.100: icmp_seq=3 ttl=254 time=0.673 ms
64 bytes from 10.1.12.100: icmp_seq=4 ttl=254 time=0.624 ms
--- 10.1.12.100 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.624/0.776/1.211 ms
H3# show int vlan 301
Vlan301 is up, line protocol is up, autostate enabled
Hardware is EtherSVI, address is 00ea.bd27.86ef
H3# show mac address-table
Legend:
* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since last seen, + - primary entry using vPC Peer-Link,
VLAN MAC Address Type age Secure NTFY Ports
-----
* 301 0000.0000.1111 dynamic O F F Eth1/33
* 301 00ea.bd27.6285 dynamic O F F Eth1/33
G - 00ea.bd27.86ef static - F F sup-eth1(R)
G 301 00ea.bd27.86ef static - F F sup-eth1(R)

```

```

spine-1# show bgp l2vpn evpn
BGP routing table information for VRF default, address family L2VPN Evpn
BGP table version is 188, Local Router ID is 172.25.0.21
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, l-i-
njected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - Network
Next Hop Metric LocPrf Weight Path
Route Distinguisher: 172.25.0.15
*>e[5] [0] [0] [24] [10.1.12.0]/224
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.137164
*>e[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 65534 i
*>e[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 65534 i
*>e[3] [0] [12] [172.25.0.15]/88
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.237164
*>e[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 65534 i
*>e[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 65534 i
*>e[3] [0] [12] [172.25.0.15]/88
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.337164
*>e[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 4294967295 0 65534 i
*>e[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 65534 i
*>e[3] [0] [12] [172.25.0.3]/88
172.25.0.3 4294967295 0 65534 i

```

```

BGP routing table information for VRF default, address family L2VPN
Evpn
BGP table version is 188, Local Router ID is 172.25.0.22
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid,
>-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, l-
i-
njected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 -
b
Network Next Hop Metric LocPrf Weight Path
Route Distinguisher: 172.25.0.15
*>e[5] [0] [0] [24] [10.1.12.0]/224
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.137164
*>e[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 65534 i
*>e[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 65534 i
*>e[3] [0] [12] [172.25.0.15]/88
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.237164
*>e[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 65534 i
*>e[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.337164
*>e[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 4294967295 0 65534 i
*>e[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 65534 i
*>e[3] [0] [12] [172.25.0.3]/88
172.25.0.3 4294967295 0 65534 i

```

```

spine-1# show ip int bri
IP Interface Status for VRF "default"(1)
Interface IP Address Interface Status
Lo0 172.25.0.21 protocol-up/link-up/admin-up
Eth1/45 192.168.1.10 protocol-up/link-up/admin-up
Eth1/46 192.168.2.10 protocol-up/link-up/admin-up
Eth1/52 192.168.3.10 protocol-up/link-up/admin-up

```

```

spine2# show ip int brief
IP Interface Status for VRF "default"(1)
Interface IP Address Interface Status
Lo0 172.25.0.22 protocol-up/link-up/admin-up
Eth1/47 192.168.1.14 protocol-up/link-up/admin-up
Eth1/48 192.168.2.14 protocol-up/link-up/admin-up
Eth1/53 192.168.3.14 protocol-up/link-up/admin-up

```

Over deze vertaling

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