

Configurazione di Nexus L2 VPN over SR MPLS con VPC Anycast Gateway

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Introduzione

Questo documento descrive come distribuire L2 Ethernet VPN over Segment Routing (SR) Multiprotocol Label Switching con Virtual Port Channel su Nexus9K.

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

- BGP (Border Gateway Protocol)
- OSPF (Open Shortest Path First)
- MPLS
- Protocollo LDP (Label Distribution Protocol)
- Protocollo RSVP (Resource Reservation Protocol)
- EVPN
- SR
- vPC

Componenti usati

Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

- Switch Nexus 92360C con versione 9.3(10) per H1 e H3.
- Switch Nexus 93180YC-FX con versione 10.2(3) per Spine.
- Switch Nexus 93240YC con versione 10.2(3) per Leaf.

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Premesse

VPLS/L2-EVPN è un servizio VPN Multipoint-to-Multipoint di livello 2 che connette più filiali di un cliente in un'unica architettura a commutazione logica su una rete IP/MPLS.

Panoramica di EVPN-MPLS SR di layer 2

EVPN (RFC 7432) è una soluzione basata su BGP MPLS che è stata utilizzata per i servizi Ethernet di nuova generazione nella rete di centri dati virtualizzata. Utilizza diversi blocchi, ad esempio Route Distinguisher (RD), Route Target (RT) e Virtual Routing and Forwarding (VRF) dalle tecnologie MPLS esistenti.

A differenza di VPLS, EVPN consente di imparare nel core il MAC basato sul control plane. In EVPN, i PE che partecipano alle istanze EVPN apprendono le route MAC personalizzate nel control-plane con il protocollo multiprotocollo (MP)-BGP. Control-Plane MAC learn fornisce una serie di vantaggi che consentono a EVPN di risolvere le carenze VPLS, che include il supporto per più home con bilanciamento del carico per flusso.

SR L2 EVPN è una nuova funzionalità disponibile in NXOS 9.3(1) che è supportata sulla piattaforma Nexus serie 9300 FX2.

Limitazioni per EVPN L2 su SR MPLS

- SR EVPN flooding L2 è basato sul meccanismo di replica in ingresso
- Utilizza un router EVPN tipo 3 per il traffico BUM
- Il core MPLS non supporta il multicast
- Eliminazione Address Resolution Protocol (ARP) non supportata
- Verifica coerenza su VPC non supportata
- Non è possibile configurare insieme la stessa istanza EVPN (EVI) e la stessa EVI L3

Configurazione

Esempio di rete

Spine2		BGP/EVPN Configuration	
Enable Feature, Label-Range, Route-map, Label-Index	Interface Configuration		
install feature-set mpls allow feature-set mpls feature-set mpls feature bgp feature mpls segment-routing feature mpls evpn feature interface-vlan feature mpls oam feature mpls segment-routing traffic-engineering segment-routing mpls global-block 16000 24000 connected-prefix-sid-map address-family ipv4 172.25.0.22/32 absolute 16022 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	Ethernet1/47 description connected to Leaf1 - 1/47 - 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 interface Ethernet1/48 description connected to Leaf2 - 1/45 - 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 interface Ethernet1/53 description connected to Leaf3 - 1/53 - 192.168.3.13 mtu 9216 logging event port link-status no ip redirects ip address 192.168.3.14/30 ip arp timeout 14400 mpls ip forwarding interface loopback0 ip address 172.25.0.22/32 icam monitor scale	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 I2vpn evpn retain route-target all neighbor 192.168.1.13 inherit peer EBG-ACCESS neighbor 192.168.2.13 inherit peer EBG-ACCESS neighbor 192.168.3.13 inherit peer EBG-ACCESS	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 I2vpn evpn disable-peer-as-check send-community send-community extended route-map NH_UNCHG out encapsulation mpls

Leaf-1		BGP/EVPN Configuration	
Enable Feature, Label-Range, Route-map, Label-Index	VPC Configuration	Interface Configuration	
install feature-set mpls feature-set mpls nv overlay evpn feature bgp feature mpls segment-routing feature mpls evpn feature interface-vlan feature lisp feature vpc feature mpls oam feature nv overlay fabric forwarding anycast-gateway-mac 0000.0000.1111 vlan 1,301-310 segment-routing mpls global-block 16000 24000 connected-prefix-sid-map address-family ipv4 172.25.0.15/32 absolute 16001 vlan 301 evl auto vrf context VPN-A evl 30001 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 ip prefix-list node-sid-loopback seq 10 permit 172.25.0.15/32 ip as-path access-list LOCALLY-ORIGINATE seq 1 permit *65534* ip as-path access-list LOCALLY-ORIGINATE seq 2 permit *65* 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 172.25.0.15	vpc domain 21 peer-switch peer-keepalive destination 10.88.238.243 source 10.88.238.242 peer-gateway ip arp synchronize interface Ethernet1/49 switchport switchport mode trunk switchport trunk allowed vlan 301-310 channel-group 10 mode active interface Ethernet1/51 switchport switchport mode trunk switchport trunk allowed vlan 301-310 channel-group 30 mode active interface port-channel10 switchport switchport mode trunk switchport trunk allowed vlan 301-310 spanning-tree port type network vpc peer-link interface port-channel30 switchport mode trunk switchport trunk allowed vlan 301-310 vpc 30	interface Ethernet1/45 description connected to spine1 - 1/45 - 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 no shutdown interface Ethernet1/47 description connected to spine2 - 1/47 - 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 Vlan301 no shutdown vrf member VPN-A no ip redirects ip address 10.1.12.1/24 ip directed-broadcast ip-dir-bcast no ipv6 redirects ip arp timeout 720 fabric forwarding mode anycast-gateway	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 network 172.25.0.15/32 network 172.25.0.201/32 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 neighbor 192.168.1.10 inherit peer EBG-SPINE neighbor 192.168.1.14 inherit peer EBG-SPINE vrf VPN-A bestpath as-path multipath-relax allocate-index 2001 address-family ipv4 unicast network 10.1.12.0/24 advertise I2vpn evpn maximum-paths 4 vrf VPN-B bestpath as-path multipath-relax allocate-index 2002 address-family ipv4 unicast network 10.1.13.0/24 advertise I2vpn evpn maximum-paths 4 evpn evl 1000 encapsulation mpls source-interface loopback0

Leaf-2		BGP/EVPN Configuration	
Enable Feature, Label-Range, Route-map, Label-Index	VPC Configuration	Interface Configuration	
install feature-set mpls allow feature-set mpls feature-set mpls nv overlay evpn feature bgp feature mpls segment-routing feature mpls evpn feature interface-vlan feature lisp feature vpc feature mpls oam feature nv overlay forwarding anycast-gateway-mac 0000.0000.1111 vlan 1,301-310 segment-routing mpls global-block 16000 24000 connected-prefix-sid-map address-family ipv4 172.25.0.15/32 absolute 16001 vlan 301 evl auto ip prefix-list node-sid-loopback seq 10 permit 172.25.0.15/32 ip as-path access-list LOCALLY-ORIGINATE seq 1 permit *65534* ip as-path access-list LOCALLY-ORIGINATE seq 2 permit *65* 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 172.25.0.15 vrf context VPN-A evl 30001 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	vpc domain 21 peer-switch peer-keepalive destination 10.88.238.242 source 10.88.238.243 peer-gateway ip arp synchronize port-channel10 switchport switchport mode trunk switchport trunk allowed vlan 301-310 spanning-tree port type network vpc peer-link interface port-channel30 switchport switchport mode trunk switchport trunk allowed vlan 301-310 vpc 30 interface Ethernet1/49 switchport switchport mode trunk switchport trunk allowed vlan 301-310 channel-group 10 mode active interface Ethernet1/50 switchport switchport mode trunk switchport trunk allowed vlan 301-310 channel-group 30 mode active	interface loopback0 ip address 172.25.0.1/32 ip address 172.25.0.15/32 secondary interface interface loopback1 ip address 172.25.0.201/32 icam monitor scale description connected to spine2 - 1/48 - 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 no shutdown interface Ethernet1/46 description connected to Spine1 - 1/46 - 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 no shutdown vrf member VPN-A no ip redirects ip address 10.1.12.1/24 ip directed-broadcast ip-dir-bcast no ipv6 redirects ip arp timeout 720 fabric forwarding mode anycast-gateway	router bgp 65534 template peer EBG-SPINE remote-as 64087 description EBG-PEERING-to-AGG address-family ipv4 unicast allows-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 allows-in 1 send-community send-community extended route-map NODE-SID-MED out soft-reconfiguration inbound always address-family I2vpn evpn allows-in 1 send-community send-community extended filter-list LOCALLY-ORIGINATE out route-map SET_NH out encapsulation mpls vrf VPN-A bestpath as-path multipath-relax allocate-index 2001 address-family ipv4 unicast network 10.1.12.0/24 advertise I2vpn evpn maximum-paths 4 vrf VPN-B bestpath as-path multipath-relax allocate-index 2002 address-family ipv4 unicast network 10.2.13.0/24 advertise I2vpn evpn maximum-paths 4 evpn evl 1000 encapsulation mpls source-interface loopback0

Enable Feature, Label-Range, Route-map, Label-Index	Leaf-3 Interface Configuration	BGP/EVPN Configuration	
<pre> install feature-set mpls feature-set mpls nv overlay evpn feature bgp feature mpls segment-routing feature mpls evpn feature mpls oam feature nv overlay fabric forwarding anycast-gateway-mac 0000.0000.1111 vlan 1,301 segment-routing mpls global-block 16000 24000 connected-prefix-sid-map address-family ipv4 172.25.0.3/32 absolute 16003 vlan 301 evi auto ip prefix-list node-sid-loopback seq 10 permit 172.25.0.3/32 ip as-path access-list LOCALLY-ORIGINATE seq 1 permit **65534* ip as-path access-list LOCALLY-ORIGINATE seq 2 permit **5* 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 172.25.0.3 vrf context VPN-A evi 30001 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> ip access-group deny-to-core_ra in vrf member VPN-A no ip redirects ip address 10.1.12.1/24 fabric forwarding mode anycast-gateway interface Vlan302 ip access-group deny-to-core_ra in vrf member VPN-B no ip redirects ip address 10.3.13.1/24 ip directed-broadcast ip-dir-bcast ip arp timeout 720 Ethernet1/47 switchport switchport mode trunk switchport trunk allowed vlan 301-310 interface Ethernet1/53 description connected to Spine1 - 1/52 - 192.168.3.10 mtu 9216 logging event port link-status no ip redirects ip address 192.168.3.9/30 ip arp timeout 14400 mpls ip forwarding interface Ethernet1/53 description connected to Spine2 - 1/53 - 20.1.1.14 mtu 9216 logging event port link-status no ip redirects ip address 192.168.3.13/30 ip arp timeout 14400 mpls ip forwarding no shutdown interface loopback0 ip address 172.25.0.3/32 icam monitor scale </pre>	<pre> router bgp 65534 router-id 172.25.0.3 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 172.25.0.3/32 maximum-paths 4 interface maximum-paths ibgp 4 allocate-label route-map node-sid-label address-family ipv4 labeled-unicast prefix-priority high address-family I2vpn evpn neighbor 192.168.3.10 inherit peer EBG-SPINE neighbor 192.168.3.14 inherit peer EBG-SPINE vrf VPN-A bestpath as-path multipath-relax allocate-index 2001 address-family ipv4 unicast advertise I2vpn evpn maximum-paths 4 evpn evi 1000 encapsulation mpls vrf VPN-B bestpath as-path multipath-relax allocate-index 2002 address-family ipv4 unicast network 10.3.13.0/24 advertise I2vpn evpn maximum-paths 4 </pre>	<pre> template peer EBG-SPINE remote-as 64087 description EBG-PEERING-to-AGG address-family ipv4 unicast allows-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 allows-in 1 send-community send-community extended route-map NODE-SID-MED out soft-reconfiguration inbound always address-family I2vpn evpn allows-in 1 send-community send-community extended route-map SET_NH out encapsulation mpls </pre>

Host-1 (H1) Configuration	Host-3 (H3) Configuration
---------------------------	---------------------------

```

interface Ethernet1/30
switchport
switchport mode trunk
switchport trunk allowed vlan 301-310
channel-group 30 mode active
no shutdown

interface Vlan301
no shutdown
no ip redirects
ip address 10.1.12.100/24

interface Ethernet1/32
switchport
switchport mode trunk
switchport trunk allowed vlan 301-310
channel-group 30 mode active
no shutdown

interface port-channel30
switchport
switchport mode trunk
switchport trunk allowed vlan 301-310

```

```

interface Vlan301
no shutdown
no ip redirects
ip address 10.1.12.200/24

interface Ethernet1/33
switchport
switchport mode trunk
switchport trunk allowed vlan 301-310
no shutdown

```

Verifica

Fare riferimento a questa sezione per verificare che la configurazione funzioni correttamente


```

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=1.34 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=0.699 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

H2# show ip int br
IP Interface Status for VRF "default"(1)
Interface IP Address Interface Status
Vlan301 10.1.12.100 protocol-up/link-up/admin-up

H2# 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)

```

```

H2# show ip interface brief
Interface IP Address Interface Status
Vlan301 10.1.12.200 protocol-up/link-up/admin-up
H2# 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
--- 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
H2# show int vlan 301
Vlan301 is up, line protocol is up, autostate enabled
Hardware is EtherSVL, address is 00ea.bd27.86ef
H2# 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, i-
rjected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - Network
Next Hop Metric LocPrf Weight Path
Route Distinguisher: 172.25.0.15
*=>[5] [0] [0] [24] [11.12.100]/224
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.137164
*=>[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 65534 i
*=>[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.237164
*=>[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 65534 i
*=>[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 65534 i
*=>[3] [0] [32] [172.25.0.15]/88
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.337164
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 4294967295 0 65534 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 65534 i
*=>[3] [0] [32] [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, i-
rjected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 -
Network Next Hop Metric LocPrf Weight Path
Route Distinguisher: 172.25.0.15
*=>[5] [0] [0] [24] [11.12.100]/224
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.137164
*=>[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 65534 i
*=>[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 65534 i
Route Distinguisher: 172.25.0.237164
*=>[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 65534 i
*=>[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 65534 i
*=>[3] [0] [32] [172.25.0.3]/88
172.25.0.3 4294967295 0 65534 i
Route Distinguisher: 172.25.0.337164
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 4294967295 0 65534 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 65534 i
*=>[3] [0] [32] [172.25.0.3]/88
172.25.0.3 4294967295 0 65534 i

```

```

Leaf1# show ip int br
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
vswan-1#

```

```

Leaf2# show ip int br
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
vswan-1#

```

```

spine-1# show ip int br
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
vswan-1#

```

```

spine2# show ip int br
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
spine2#

```

```

Leaf1# show l2
l2protocol l2br l2route
Leaf1# show nve evi
EVI Vlan Label Oper State EVI State
-----
301 301 964878 UP evi-add-complete

Leaf1# show bgp l2vpn evpn
Network Next Hop Metric LocPrf Weight Path
Route Distinguisher: 172.25.0.137164 (L2VNI 301)
*=>[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 100 32768 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 4294967295 0 64087 655
34 i
*=>[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 100 32768 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.25.0.3]/88
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.25.0.15]/88
172.25.0.15 100 32768 i
Route Distinguisher: 172.25.0.337164
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 4294967295 0 64087 655
34 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.25.0.3]/88
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.25.0.15]/88
172.25.0.15 100 32768 i
Route Distinguisher: 172.25.0.15
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.12.100]/224
0.0.0.0 100 32768 i

```

```

Leaf2# show nve evi
EVI Vlan Label Oper State EVI State
-----
301 301 964878 UP evi-add-complete

Leaf2# show bgp l2vpn evpn
Network Next Hop Metric LocPrf Weight Path
Route Distinguisher: 172.25.0.237164 (L2VNI 301)
*=>[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 100 32768 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 4294967295 0 64087 655
34 i
*=>[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 100 32768 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.25.0.3]/88
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.25.0.15]/88
172.25.0.15 100 32768 i
Route Distinguisher: 172.25.0.337164
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 4294967295 0 64087 655
34 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.25.0.3]/88
172.25.0.3 4294967295 0 64087 655
34 i
*=>[3] [0] [32] [172.25.0.15]/88
172.25.0.15 100 32768 i
Route Distinguisher: 172.25.0.25
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 4294967295 0 64087 655
34 i

```

```

Leaf3# show bgp l2vpn evpn
Network Next Hop Metric LocPrf Weight Path
Route Distinguisher: 172.25.0.15
*=>[5] [0] [0] [24] [11.12.100]/224
172.25.0.15 4294967295 0 64087 655
* e 172.25.0.15 4294967295 0 64087 655
34 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [32] [10.1.12.200]/272
172.25.0.3 100 32768 i
*=>[3] [0] [32] [172.25.0.3]/88
172.25.0.3 100 32768 i
*=>[3] [0] [32] [172.25.0.15]/88
172.25.0.15 4294967295 0 64087 655
34 i
172.25.0.15 4294967295 0 64087 655
34 i
Route Distinguisher: 172.25.0.33
*=>[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 64087 655
34 i
* e 172.25.0.15 4294967295 0 64087 655
34 i
*=>[5] [0] [0] [24] [11.12.100]/224
172.25.0.15 4294967295 0 64087 655
34 i
Leaf3#
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 64087 655
34 i
* e 172.25.0.15 4294967295 0 64087 655
34 i
* e [2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 64087 655
34 i
* e [3] [0] [32] [172.25.0.15]/88
172.25.0.15 4294967295 0 64087 655
34 i
* e [3] [0] [32] [172.25.0.3]/88
172.25.0.3 4294967295 0 64087 655
34 i
Route Distinguisher: 172.25.0.337164 (L2VNI 301)
*=>[2] [0] [0] [48] [00ea.bd27.6285] [0] [0.0.0.0]/216
172.25.0.15 4294967295 0 64087 655
34 i
* e 172.25.0.15 4294967295 0 64087 655
34 i
*=>[2] [0] [0] [48] [00ea.bd27.86ef] [0] [0.0.0.0]/216
172.25.0.3 100 32768 i
*=>[2] [0] [0] [48] [00ea.bd27.6285] [32] [10.1.12.100]/272
172.25.0.15 4294967295 0 64087 655

```

```

Leaf1# 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,
[NA] - Not Applicable
VLAN MAC Address Type age Secure NTFY Ports
-----
+ 301 00ea.bd27.6285 dynamic NA F F Po30
C 301 00ea.bd27.86ef dynamic NA F F sr-peer(172.25.0.3)
G - 0000.0000.1111 static - F F sup-eth1(R)
G 301 c014.fea3.bc87 static - F F vPC Peer-Link(R)
G - c014.fea3.ca07 static - F F sup-eth1(R)
G 301 c014.fea3.ca07 static - F F sup-eth1(R)
Leaf1#

```

```

Leaf2# 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,
[NA] - Not Applicable
VLAN MAC Address Type age Secure NTFY Ports
-----
+ 301 00ea.bd27.6285 dynamic NA F F Po30
C 301 00ea.bd27.86ef dynamic NA F F sr-peer(172.25.0.3)
G - 0000.0000.1111 static - F F sup-eth1(R)
G - c014.fea3.bc87 static - F F sup-eth1(R)
G c014.fea3.bc87 static - F F sup-eth1(R)
G 301 c014.fea3.ca07 static - F F vPC Peer-Link(R)
Leaf2#

```

```

Leaf3# 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,
[NA] - Not Applicable
VLAN MAC Address Type age Secure NTFY Ports
-----
C 301 00ea.bd27.6285 dynamic NA F F sr-peer(172.25.0.15)
* 301 00ea.bd27.86ef dynamic NA F F Eth1/47
G - 0000.0000.1111 static - F F sup-eth1(R)
G - c014.fea3.cadf static - F F sup-eth1(R)
G 301 c014.fea3.cadf static - F F sup-eth1(R)

```

Risoluzione dei problemi

Le informazioni contenute in questa sezione permettono di risolvere i problemi relativi alla configurazione.

Informazioni su questa traduzione

Cisco ha tradotto questo documento utilizzando una combinazione di tecnologie automatiche e umane per offrire ai nostri utenti in tutto il mondo contenuti di supporto nella propria lingua. Si noti che anche la migliore traduzione automatica non sarà mai accurata come quella fornita da un traduttore professionista. Cisco Systems, Inc. non si assume alcuna responsabilità per l'accuratezza di queste traduzioni e consiglia di consultare sempre il documento originale in inglese (disponibile al link fornito).