Konfiguration und Überprüfung von EVPN/VxLAN in Umgebungen mit mehreren Standorten

Inhalt

Einleitung

Dieses Dokument beschreibt die Konfiguration und Verifizierung von Ethernet VPN/Virtual Extensible LAN Multisite Environment mit Cisco Nexus Switches der Serie 9000.

Voraussetzungen

Anforderungen

Cisco empfiehlt, dass Sie über Kenntnisse in folgenden Bereichen verfügen:

- Multiprotocol Label Switching (MPLS) Layer 3-VPN
- Multiprotocol - Border Gateway Protocol (MP-BGP)
- Ethernet-VPN (EVPN)

Verwendete Komponenten

Die Informationen in diesem Dokument basierend auf folgenden Software- und Hardware-Versionen:

leaf1#	N5K-C5672UP-16G-SUP	System: Version 7.3(0)N1(1)
Leaf2#	N9K-C92160YC-X	NXOS: Version 9.2(3)
Spine1#	N9K-C9396PX	NXOS: Version 9.2(3)
Spine 2#	N9K-C9396PX	NXOS: Version 9.2(3)
MultisiteBG1#	N9K-C93108TC-EX	NXOS: Version 9.2(3)
MultisiteBG2#	N9K-C93108TC-FX	NXOS: Version 9.3(1)

Multisitespine2#	N9K-C9372TX-E	NXOS: Version 9.2(3)
Multistespine1#	N9K-C92160YC-X	NXOS: Version 9.2(3)
Mehrfachleaf1#	N9K-C93108TC-EX	NXOS: Version 7.0(3)I7(5)

Die Informationen in diesem Dokument beziehen sich auf Geräte in einer speziell eingerichteten Testumgebung. Alle Geräte, die in diesem Dokument benutzt wurden, begannen mit einer gelöschten (Nichterfüllungs) Konfiguration. Wenn Ihr Netzwerk in Betrieb ist, stellen Sie sicher, dass Sie die möglichen Auswirkungen aller Befehle kennen.

Verwandte Produkte

Software- und Hardware-Mindestanforderungen EVPN Multi-Site Border Gateway

Posten	**Anforderung**
Cisco Nexus Hardware	â—€ Cisco Nexus 9300 EX-Plattform
	â—€ Cisco Nexus 9300 FX-Plattform
	â—€ Cisco Nexus 9332C-Plattform
	â—€ Cisco Nexus 9364C-Plattform
	â—€ Cisco Nexus 9500-Plattform mit X9700-EX Line Card
	â—€ Cisco Nexus 9500-Plattform mit X9700-FX Line Card
Cisco NX-OS-Software	Cisco NX-OS Softwareversion 7.0(3)I7(1) oder höher

Die Hardware- und Softwareanforderungen für die standortinternen Knoten eines Virtual Extensible LAN (VXLAN) BGP-EVPN-Standorts sind dieselben wie für die Knoten ohne den EVPN Multi-Site-BGW.

Hintergrundinformationen

Das Rechenzentrum ist ein Ressourcen-Pool mit Rechenleistung, Storage und den erforderlichen Anwendungen zur Unterstützung der Geschäftsumgebung. Eine angemessene Planung des Infrastrukturdesigns für das Rechenzentrum ist von entscheidender Bedeutung. Sehen Sie sich nun die kritischen Anforderungen und deren Überwindung an. Moderne IT-Infrastrukturen und Rechenzentrumsbereitstellungen erfordern hohe Verfügbarkeit, eine schnellere Skalierung, hohe Leistung und einen unterbrechungsfreien Betrieb.

Einige der wichtigsten Anforderungen an das Design/die Architektur des Rechenzentrums:

- Portdichte, wird durch FEX verbessert.
- Die Rechenkapazität wird durch Hardware-Virtualisierung (UCS) verbessert.
- Die Uplink-Bandbreite des Access-Layers wird durch FI, Port-Channel, verbessert.
- Die Redundanz auf Chassis-Ebene wird durch vPC verbessert.
- Die SDN-Fabric wird durch die ACI verbessert - automatisiert Underlay und Overlay in einer Fabric.
- Die schnelle Bereitstellung und Unterstützung neuer Services wird durch DCNM verbessert.

- Die Bandbreitenanforderungen für Langstreckenanwendungen werden durch Dark Fiber- oder Wavelength-Services verbessert.

- Da geografische Redundanz und Skalierung wichtige Merkmale für die Erweiterung bzw. Erweiterung von Rechenzentrumsumgebungen sind, können wir mit standortübergreifendem VxLAN/EVPN bessere DCI-Lösungen anbieten.

Wie ist Multi-Site hilfreich

Zu den externen Verbindungen gehört die Verbindung des Rechenzentrums mit dem übrigen Netzwerk: mit dem Internet, dem WAN oder dem Campus. Alle für externe Verbindungen bereitgestellten Optionen sind Multi-Tenant-fähig und konzentrieren sich auf den Layer-3-Transport zu den externen Netzwerkdomänen.

- EVPN ist eine All-in-One-VPN-Lösung der nächsten Generation.

- Es leistet nicht nur die Arbeit vieler anderer VPN-Technologien, sondern ist auch besser.

- Integration in bestehende Netzwerke

- Selektive Werbung/Durchwahl:
    - Erweitern Sie die einzigen L2-spezifischen VLANs/Subnetze, die mithilfe von Typ-2-Routen erweitert werden können.
    - Erweiterung der einzigen L3-Domäne: Bestimmte L3-Domänen können mithilfe von Typ-5-Routen erweitert werden.
- Automatische Erkennung von Redundanzgruppen über Typ-4-Routen
- Aliasing, Massenentzug von Adressen, SH/AA-MH-Angabe über Typ-1-Routen.
- Automatische Erkennung von Multicast-Tunnel-Endpunkten und MCAST-Tunneltypen mithilfe von Typ-3-Routen.

Weitere Vorteile

ãƒ» Workload-Balancing zwischen Rechenzentren und Clouds

ãƒ» Proaktive Reaktion auf Störungen - verringert das Risiko, sich Katastrophen, wie Hurrikanen, Überschwemmungen, usw. zu nähern.

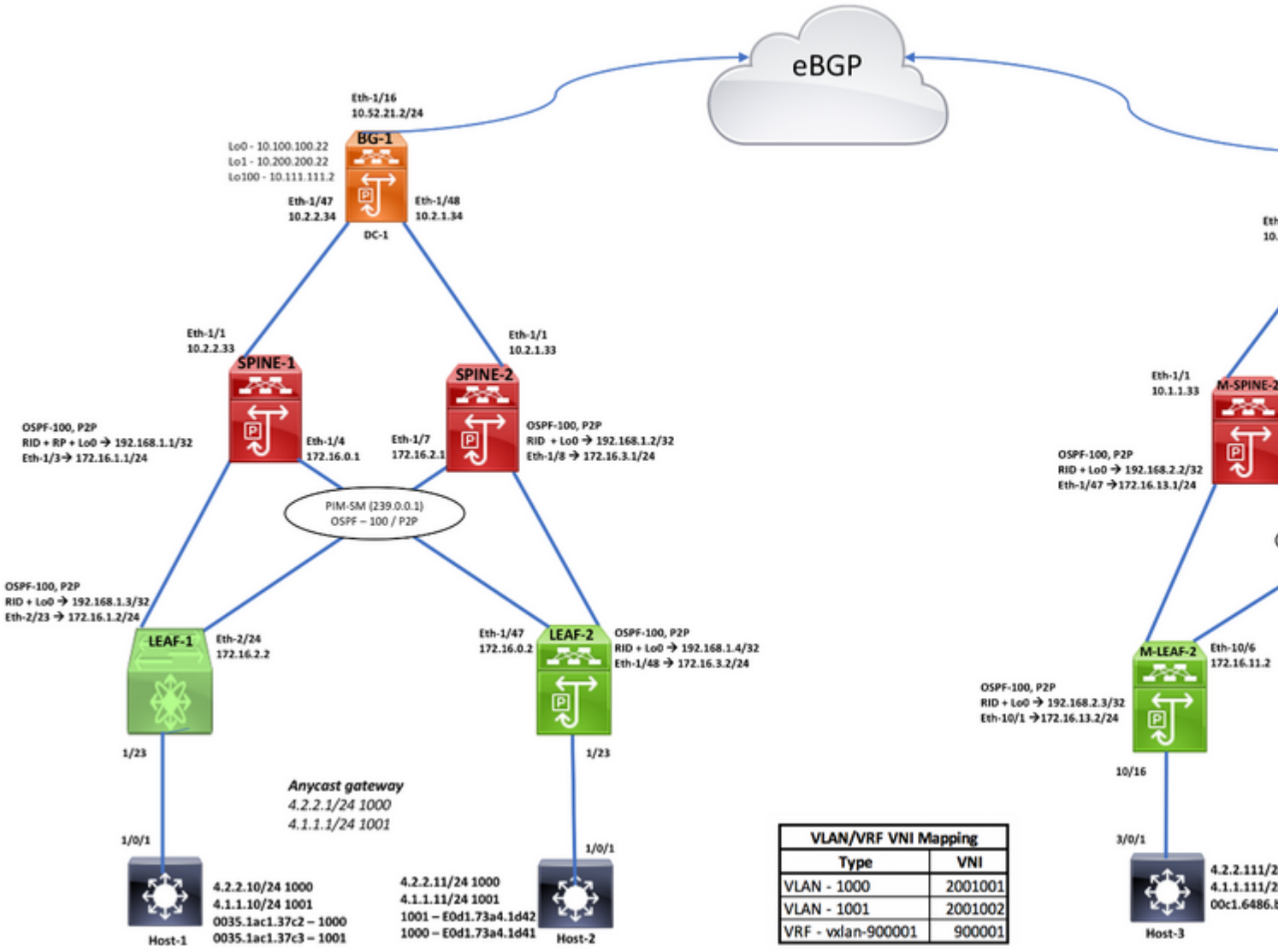
ãƒ» Wartung und Migration von Rechenzentren - geplante Veranstaltungen über einen bestimmten Zeitraum, Integration in bestehende Netzwerke.

ãƒ» Backup und Disaster Recovery aaS.

Unterstützte Topologien

- BGW-zu-Cloud-Modell
- BGWs zwischen Spine und Super-Spine
- BGWs am Spine-Modell
- Back-to-Back-Modell der BGWs

Topologie



VLAN/VRF VNI Mapping	
Type	VNI
VLAN - 1000	2001001
VLAN - 1001	2001002
VRF - vxlan-900001	900001

Konfigurieren

DC-1, LEAF-1 CONFIGURATION

Enable Features

```
install feature-set fabric
feature-set fabric
hostname leaf1
feature fabric forwarding
nv overlay evpn
feature ospf
feature bgp
feature pim
feature interface-vlan
feature fabric access
feature nv overlay
feature vn-segment-vlan-based
```

Enabling Store-and-Forward Switching

```
switching-mode store-forward
```

Interface towards HOST

```
interface Ethernet1/23
  switchport mode trunk
  switchport trunk allowed vlan 1000-1001
  speed 1000
```

VLAN-VNI Mapping

```
vlan 1
vlan 101
  vn-segment 900001
vlan 1000
  vn-segment 2001002
vlan 1001
  vn-segment 2001001
```

VLAN Config

```
interface Vlan101
  no shutdown
  vrf member vxlan-900001
  ip forward

interface Vlan1000
  no shutdown
  mtu 9216
  vrf member vxlan-900001
  ip address 4.2.2.1/24
  ipv6 address 4:2:0:1::1/64
  fabric forwarding mode anycast-gateway

interface Vlan1001
  no shutdown
  mtu 9216
  vrf member vxlan-900001
  ip address 4.1.1.1/24
  ipv6 address 4:1:0:1::1/64
  fabric forwarding mode anycast-gateway
```

Anycast GW mapping

```
fabric forwarding anycast-gateway-mac 0000.2222.3333
```

Static RP Config

```
ip pim rp-address 192.168.1.1 group-list 224.0.0.0/4
ip pim rp-address 192.168.1.2 group-list 224.0.0.0/4
ip pim ssm range 232.0.0.0/8
ip multicast multipath none
```

VTEP Config

```
interface nve1
  no shutdown
  source-interface loopback0
  host-reachability protocol bgp
  member vni 900001 associate-vrf
  member vni 2001001
    suppress-arp
    mcast-group 239.0.0.1
  member vni 2001002
    suppress-arp
    mcast-group 239.0.0.1
```

LEAF to SPINE interfaces/OSPF Config

```
interface Ethernet2/23
  no switchport
  ip address 172.16.1.2/24
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

interface Ethernet2/24
  no switchport
  ip address 172.16.2.2/24
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

interface loopback0
  ip address 192.168.1.3/24
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

router ospf 100
  router-id 192.168.1.3
```

DC-1 SPINE -1 Configuration

Enabling Features, RP Config

```
hostname spine1
boot nxos bootflash:/nxos.9.2.3.bin

nv overlay evpn
feature ospf
feature bgp
feature pim
feature interface-vlan
feature vn-segment-vlan-based
feature nv overlay

ip pim rp-address 192.168.1.1 group-list 224.0.0.0/4
```

OSPF Configuration

```
interface Ethernet1/1
  no switchport
  ip address 10.2.2.33/30
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  no shutdown

interface Ethernet1/3
  no switchport
  ip address 172.16.1.1/24
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  no shutdown

interface Ethernet1/4
  no switchport
  ip address 172.16.0.1/24
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  no shutdown

interface loopback0
  ip address 192.168.1.1/32
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

router ospf 100
  router-id 192.168.1.1
```

BGP/EVPN Configuration

```
router bgp 200
  router-id 192.168.1.1
  address-family ipv4 unicast
  address-family l2vpn evpn
  neighbor 10.100.100.22
    remote-as 200
    update-source loopback0
    address-family ipv4 unicast
    address-family l2vpn evpn
      send-community
      send-community extended
      route-reflector-client
  neighbor 192.168.1.3
    remote-as 200
    update-source loopback0
    address-family ipv4 unicast
      send-community extended
      route-reflector-client
    address-family l2vpn evpn
      send-community extended
      route-reflector-client
  neighbor 192.168.1.4
    remote-as 200
    update-source loopback0
    address-family ipv4 unicast
      send-community extended
      route-reflector-client
    address-family l2vpn evpn
      send-community extended
      route-reflector-client
```

DC-1 Border Gateway-1 Configuration

Enabling Features, RouteMap, B-G Config

```
hostname MultisiteBG1
boot nxos bootflash:/nxos.9.2.3.bin
nv overlay evpn
feature ospf
feature bgp
feature pim
feature fabric forwarding
feature interface-vlan
feature vn-segment-vlan-based
feature lldp
feature nv overlay

evpn multisite border-gateway 200
  delay-restore time 300

route-map RMAP-REDIST-DIRECT permit 10
  match tag 54321
```

VLAN,VNI,VTEP Config

VLAN-VNI Mapping

```
vlan 101
  vn-segment 900001
vlan 1000
  vn-segment 2001002
vlan 1001
  vn-segment 2001001

interface Vlan101
  no shutdown
  mtu 9192
  vrf member vxlan-900001
  ip forward
```

VTEP Config

```
interface nve1
  no shutdown
  host-reachability protocol bgp
  source-interface loopback1
  multisite border-gateway interface loopback100
  member vni 900001 associate-vrf
  member vni 2001001
    multisite ingress-replication
    ingress-replication protocol bgp
  member vni 2001002
    multisite ingress-replication
    ingress-replication protocol bgp
```

Core-Facing Interface Config

```
interface Ethernet1/16
  mtu 9216
  ip address 10.52.21.2/30 tag 54321
  evpn multisite dci-tracking
  no shutdown
```

OSPF Configuration

```
interface Ethernet1/47
  ip address 10.2.2.34/30
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  evpn multisite fabric-tracking
  no shutdown

interface Ethernet1/48
  ip address 10.2.1.34/30
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  evpn multisite fabric-tracking
  no shutdown

interface loopback0
  ip address 10.100.100.22/32 tag 54321
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

interface loopback1
  ip address 10.200.200.22/32 tag 54321
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

interface loopback100
  ip address 10.111.111.2/32 tag 54321
  ip router ospf 100 area 0.0.0.0

router ospf 100
  router-id 10.100.100.22
```

BGP/E

```
router
  route
  addre
    redi
  neigh
    rem
    upd
    add
  neigh
    rem
    upd
    ebg
    pee
    add
      se
      se
      rev
  neigh
    rem
    upd
    add
      se
      se
  neigh
    rem
    upd
    add
      se
      se
evpn
  vni 2
    rd a
    rout
    rout
  vni 2
    rd a
    rout
    rout
vrf con
  rd au
  addre
    rout
    rout
  addre
    rout
    rout
```

DC-2 Border Gateway-2 Configuration

Enabling Features, RouteMap, B-G Config

```
boot nxos bootflash:/nxos.9.3.0.221.bin
hostname MultisiteBG2
nv overlay evpn
feature ospf
feature bgp
feature pim
feature fabric forwarding
feature interface-vlan
feature vn-segment-vlan-based
feature lldp
feature nv overlay

evpn multisite border-gateway 100
  delay-restore time 300




vlan 1,101,1000-1001
vlan 101
  vn-segment 900001
vlan 1000
  vn-segment 2001002
vlan 1001
  vn-segment 2001001

route-map RMAP-REDIST-DIRECT permit 10
  match tag 54321

interface Ethernet1/16
  mtu 9216
  ip address 10.52.21.1/30 tag 54321
  evpn multisite dci-tracking
  no shutdown
```

VLAN,VNI,VTEP Config

```
interface Vlan101
  no shutdown
  vrf member vxlan-900001
  ip forward


interface nve1
  no shutdown
  host-reachability protocol bgp
  source-interface loopback1
  multisite border-gateway interface loopback100
  member vni 900001 associate-vrf
  member vni 2001001
    multisite ingress-replication
    ingress-replication protocol bgp
  member vni 2001002
    multisite ingress-replication
    ingress-replication protocol bgp

vrf context vxlan-900001
  vni 900001
  rd auto
  address-family ipv4 unicast
    route-target both auto
    route-target both auto evpn
  address-family ipv6 unicast
    route-target both auto
    route-target both auto evpn
```

OSPF Configuration

```
interface Ethernet1/1
  description SITE-INTERNAL INTERFACE
  mtu 9216
  medium p2p
  ip address 10.1.1.34/30
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  evpn multisite fabric-tracking
  no shutdown

interface Ethernet1/2
  description SITE-INTERNAL INTERFACE
  mtu 9216
  medium p2p
  ip address 10.1.2.34/30
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  evpn multisite fabric-tracking
  no shutdown

interface loopback0
  description RID AND BGP PEERING
  ip address 10.100.100.21/32 tag 54321
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

interface loopback1
  description NVE INTERFACE (PIP VTEP)
  ip address 10.200.200.21/32 tag 54321
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

interface loopback100
  description MULTI-SITE INTERFACE (VIP VTEP)
  ip address 10.111.111.1/32 tag 54321
  ip router ospf 100 area 0.0.0.0

router ospf 100
  router-id 10.100.100.21
```

DC-2 SPINE -1 Configuration

Enabling Features, RP Config

```
boot nxos bootflash:/nxos.9.2.3.bin
hostname Multistespine1
nv overlay evpn
feature ospf
feature bgp
feature pim
feature interface-vlan
feature vn-segment-vlan-based
feature nv overlay




ip pim rp-address 192.168.2.1 group-list 224.0.0.0/4
```

OSPF Configuration

```
interface Ethernet1/1
  mtu 9216
  ip address 10.1.2.33/30
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  no shutdown

interface Ethernet1/47
  ip address 172.16.10.1/24
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  no shutdown

interface Ethernet1/48
  ip address 172.16.11.1/24
  ip ospf network point-to-point
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode
  no shutdown


interface loopback0
  ip address 192.168.2.1/32
  ip router ospf 100 area 0.0.0.0
  ip pim sparse-mode

router ospf 100
  router-id 192.168.2.1
```

BGP/EVPN Configuration

```
router bgp 100
  router-id 192.168.2.1
  address-family ipv4 unicast
  address-family l2vpn evpn
  neighbor 10.100.100.21
    remote-as 100
    update-source loopback0
    address-family l2vpn evpn
      send-community
      send-community extended
      route-reflector-client
  neighbor 192.168.2.3
    remote-as 100
    update-source loopback0
    address-family ipv4 unicast
      send-community extended
      route-reflector-client
    address-family l2vpn evpn
      send-community extended
      route-reflector-client
  neighbor 192.168.2.4
    remote-as 100
    update-source loopback0
    address-family ipv4 unicast
      send-community extended
      route-reflector-client
    address-family l2vpn evpn
      send-community extended
      route-reflector-client
```

DC-2, LEAF -1 Configuration		
Enabling Features, RP, VTEP Config	**VLAN,VNI Configuration**	**OSPF Configuration**
boot nxos bootflash:/nxos.7.0.3.I7.5.bin	vlan 101	interface Ethernet1/1
hostname MultisteLeaf1	vn-segment 900001	ip address 172.16.12.2/24
nv overlay evpn	vlan 1000	ip ospf network point-to-point
feature ospf	vn-segment 2001002	ip router ospf 100 area 0.0.0.0
feature bgp	vlan 1001	ip pim sparse-mode
feature pim	vn-segment 2001001	no shutdown
feature fabric forwarding		
feature interface-vlan	interface Vlan101	interface Ethernet1/6
feature vn-segment-vlan-based	no shutdown	ip address 172.16.10.2/24
feature lldp	vrf member vxlan-900001	ip ospf network point-to-point
feature nv overlay	ip forward	ip router ospf 100 area 0.0.0.0
		ip pim sparse-mode
	interface Vlan1000	no shutdown
fabric forwarding anycast-gateway-mac 0000.2222.3333	no shutdown	
ip pim rp-address 192.168.2.1 group-list 224.0.0.0/4	vrf member vxlan-900001	interface Ethernet1/16
	ip address 4.2.2.1/24	switchport
	ipv6 address 4:2:0:1::1/64	switchport mode trunk
interface nve1	fabric forwarding mode anycast-gateway	no shutdown
no shutdown		
host-reachability protocol bgp	interface Vlan1001	interface loopback0
source-interface loopback0	no shutdown	ip address 192.168.2.4/32
member vni 900001 associate-vrf	vrf member vxlan-900001	ip router ospf 100 area 0.0.0.0
member vni 2001001	ip address 4.1.1.1/24	ip pim sparse-mode
suppress-arp	ipv6 address 4:1:0:1::1/64	
mcast-group 239.0.0.1	fabric forwarding mode anycast-gateway	
member vni 2001002		router ospf 100
suppress-arp		router-id 192.168.2.4
mcast-group 239.0.0.1	vrf context vxlan-900001	
	vni 900001	
	rd auto	
	address-family ipv4 unicast	
	route-target both auto	
	route-target both auto evpn	
	address-family ipv6 unicast	
	route-target both auto	
	route-target both auto evpn	

Überprüfung

LEAF-1 VERIFICATION

```
leaf1# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute


Device-ID              Local Intrfce Hldtme Capability  Platform
MX066-H-01-SW.cisco.com
                       mgmt0          142    S I       WS-C2960X-48T
ToLeaf1                Eth1/23        163    S I       WS-C3750X-24S
spine1(SAL1948U4Y1)
                       Eth2/23        156    R S s     N9K-C9396PX
spine2(SAL1949UELD)
                       Eth2/24        152    R S s     N9K-C9396PX

leaf1#


leaf1# sh ip int brief | exclude down
IP Interface Status for VRF "default"(1)
Interface            IP Address      Interface Status
Lo0                  192.168.1.3     protocol-up/link-up/admin-up
Eth2/23              172.16.1.2      protocol-up/link-up/admin-up
Eth2/24              172.16.2.2      protocol-up/link-up/admin-up
leaf1#

leaf1# sh nve vrf
VRF-Name      VNI         Interface Gateway-MAC
------------ ---------- --------- -----------------
vxlan-900001 900001      nve1      00de.fb01.9fc1

leaf1# sh nve vxlan-params
VxLAN Dest. UDP Port: 4789
```

```
leaf1# show ip pim rp
PIM RP Status Information for VRF "default"
BSR disabled
Auto-RP disabled
BSR RP Candidate policy: None
BSR RP policy: None
Auto-RP Announce policy: None
Auto-RP Discovery policy: None

RP: 192.168.1.1, (0),
 uptime: 3w1d   priority: 0,
 RP-source: (local),
 group ranges:
 224.0.0.0/4
RP: 192.168.1.2, (0),
 uptime: 3w1d   priority: 0,
 RP-source: (local),
 group ranges:
 224.0.0.0/4
leaf1#



leaf1# sh nve interface
Interface: nve1, State: Up, encapsulation: VXLAN
 VPC Capability: VPC-VIP-Only [not-notified]
 Local Router MAC: 00de.fb01.9fc1
 Host Learning Mode: Control-Plane
 Source-Interface: loopback0 (primary: 192.168.1.3, secondary: 0.

leaf1#
```

```
leaf1# sh nve peers
Interface Peer-IP
--------- ----------
nve1      10.111.111.2
nve1      10.200.200.2
nve1      192.168.1.4

leaf1#

leaf1# show nve vni
Codes: CP - Control Pla
       UC - Unconfigure
       SU - Suppress U

Interface VNI      Mult
--------- -------- ----
nve1      900001   n/a
nve1      2001001  239.
nve1      2001002  239.

leaf1#



leaf1# sh vrf vxlan-900
VRF-Name: vxlan-900001,
    VPNID: unknown
    RD: 192.168.1.3:3
    VNI: 900001, State
    Max Routes: 0  Mid
    Table-ID: 0x800000
    Table-ID: 0x000000
```

CONTROL PLANE LEARNING: Destination Prefix is 4.2.2.100 <===> 00c8.8bf9.5f41 <===> Vlan1000 <===> VNI2001002

Destination Prefix is learnt on host-connected LEAF 192.168.2.4

```
MultisteLeaf1# sh ip route 4.2.2.100 vrf vxlan-900001
IP Route Table for VRF "vxlan-900001"
'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%<string>' in via output denotes VRF <string>

4.2.2.100/32, ubest/mbest: 1/0, attached
    *via 4.2.2.100, Vlan1000, [190/0], 4w2d, hmm
MultisteLeaf1#
MultisteLeaf1# sh bgp l2vpn evpn summary
BGP summary information for VRF default, address family L2VPN EVPN
BGP router identifier 192.168.2.4, local AS number 100
BGP table version is 56, L2VPN EVPN config peers 2, capable peers 2
36 network entries and 50 paths using 7968 bytes of memory
BGP attribute entries [26/4160], BGP AS path entries [1/6]
BGP community entries [0/0], BGP clusterlist entries [2/8]

Neighbor        V    AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/PfxRcd
192.168.2.1     4   100   44038   44029       56    0    0    4w2d 14
192.168.2.2     4   100   44037   44030       56    0    0    4w2d 14
MultisteLeaf1#
MultisteLeaf1# sh nve peers
Interface Peer-IP          State LearnType Uptime   Router-Mac
--------- ---------------  ----- --------- -------- -----------------
nve1      10.111.111.1     Up    CP        4w2d     0200.0a6f.6f01
nve1      10.200.200.21    Up    CP        4w2d     n/a

MultisteLeaf1# show nve vni
Codes: CP - Control Plane        DP - Data Plane
       UC - Unconfigured         SA - Suppress ARP
       SU - Suppress Unknown Unicast
       Xconn - Crossconnect
       MS-IR - Multisite Ingress Replication

Interface VNI      Multicast-group   State Mode Type [BD/VRF]      Flags
--------- -------- ----------------- ----- ---- ------------------ -----
nve1      900001   n/a               Up    CP   L3 [vxlan-900001]
nve1      2001001  239.0.0.1         Up    CP   L2 [1001]          SA
nve1      2001002  239.0.0.1         Up    CP   L2 [1000]          SA
MultisteLeaf1#
```

Host-Connected Leaf is advertising this prefix to its SPINE (192.168.2.1)

```
MultisteLeaf1# sh bgp l2vpn evpn neighbors 192.168.2.1 advertised-routes

Peer 192.168.2.1 routes for address family L2VPN EVPN:
BGP table version is 56, Local Router ID is 192.168.2.4
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-i
njected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup

   Network            Next Hop            Metric     LocPrf     Weight Path
Route Distinguisher: 10.100.100.21:33767

Route Distinguisher: 10.100.100.21:33768

Route Distinguisher: 10.100.100.22:33767

Route Distinguisher: 10.100.100.22:33768

Route Distinguisher: 192.168.1.3:33767

Route Distinguisher: 192.168.1.3:33768

Route Distinguisher: 192.168.1.4:33767

Route Distinguisher: 192.168.1.4:33768

Route Distinguisher: 192.168.2.4:33767    (L2VNI 2001002)
*>l[2]:[0]:[0]:[48]:[00c8.8bf9.5f41]:[0]:[0.0.0.0]/216
                    192.168.2.4                       100      32768 i
*>l[2]:[0]:[0]:[48]:[00c8.8bf9.5f41]:[32]:[4.2.2.100]/272
                    192.168.2.4                       100      32768 i

Route Distinguisher: 192.168.2.4:33768    (L2VNI 2001001)
*>l[2]:[0]:[0]:[48]:[00c8.8bf9.5f42]:[0]:[0.0.0.0]/216
                    192.168.2.4                       100      32768 i
*>l[2]:[0]:[0]:[48]:[00c8.8bf9.5f42]:[32]:[4.1.1.100]/272
                    192.168.2.4                       100      32768 i

Route Distinguisher: 192.168.2.4:3    (L3VNI 900001)

MultisteLeaf1#
```

SPINE is advertising the same p

```
Multistespine1# sh bgp l2vp

Peer 10.100.100.21 routes
BGP table version is 26, Lo
Status: s-suppressed, x-del
Path type: i-internal, e-ex
njected
Origin codes: i - IGP, e -
est2

   Network            Next
Route Distinguisher: 10.100

Route Distinguisher: 10.100

Route Distinguisher: 10.100

Route Distinguisher: 10.100

Route Distinguisher: 10.100

Route Distinguisher: 192.16

Route Distinguisher: 192.16

Route Distinguisher: 192.16

Route Distinguisher: 192.16
*>i[2]:[0]:[0]:[48]:[00c8.
                    192.1
*>i[2]:[0]:[0]:[48]:[00c8.
                    192.1

Route Distinguisher: 192.16
*>i[2]:[0]:[0]:[48]:[00c8.
                    192.1
*>i[2]:[0]:[0]:[48]:[00c8.
                    192.1
Multistespine1#
```

eBGP Neighborship between Border Gateways

```
MultisiteBG2# sh bgp l2vpn evpn summary
BGP summary information for VRF default, address family L2VPN EVPN
BGP router identifier 10.100.100.21, local AS number 100
BGP table version is 60, L2VPN EVPN config peers 3, capable peers 3
43 network entries and 47 paths using 8160 bytes of memory
BGP attribute entries [37/6068], BGP AS path entries [1/6]
BGP community entries [0/0], BGP clusterlist entries [2/8]

Neighbor        V    AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/PfxRcd
10.100.100.22   4   200   44066   44039       60    0    0     4w2d 12
192.168.2.1     4   100   44050   44037       60    0    0     4w2d 4
192.168.2.2     4   100   44048   44037       60    0    0     4w2d 4

Neighbor        T    AS PfxRcd     Type-2     Type-3     Type-4     Type-5
10.100.100.22   E   200 12          10         2          0          0
192.168.2.1     I   100 4           4          0          0          0
192.168.2.2     I   100 4           4          0          0          0
MultisiteBG2#

MultisiteBG2# sh bgp ipv4 unicast summary
BGP summary information for VRF default, address family IPv4 Unicast
BGP router identifier 10.100.100.21, local AS number 100
BGP table version is 11, IPv4 Unicast config peers 1, capable peers 1
7 network entries and 8 paths using 1800 bytes of memory
BGP attribute entries [2/328], BGP AS path entries [1/6]
BGP community entries [0/0], BGP clusterlist entries [2/8]

Neighbor        V    AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/PfxRcd
10.52.21.2      4   200   44043   44041       11    0    0     4w2d 4
MultisiteBG2#

MultisiteBG2# sh bgp ipv4 unicast neighbors 10.52.21.2 advertised-routes
Peer 10.52.21.2 routes for address family IPv4 Unicast:
BGP table version is 11, Local Router ID is 10.100.100.21
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-i
njected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - b
est2

   Network            Next Hop            Metric     LocPrf     Weight Path
*>r10.52.21.0/30      0.0.0.0                  0        100      32768 ?
*>r10.100.100.21/32   0.0.0.0                  0        100      32768 ?
*>r10.111.111.1/32    0.0.0.0                  0        100      32768 ?
*>r10.200.200.21/32   0.0.0.0                  0        100      32768 ?
MultisiteBG2#
```

```
MultisiteBG1# sh bgp l2vpn evpn summary
BGP summary information for VRF default, ac
BGP router identifier 10.100.100.22, local
BGP table version is 82, L2VPN EVPN config
37 network entries and 45 paths using 7296
BGP attribute entries [37/6068], BGP AS pat
BGP community entries [0/0], BGP clusterlis

Neighbor        V    AS MsgRcvd MsgSent   T
10.100.100.21   4   100   44126   44106
192.168.1.1     4   200   44122   44104
192.168.1.2     4   200   44121   44104

Neighbor        T    AS PfxRcd     Type-2
10.100.100.21   E   100 8           6
192.168.1.1     I   200 8           8
192.168.1.2     I   200 8           8
MultisiteBG1#

MultisiteBG1# sh bgp ipv4 unicast summary
BGP summary information for VRF default, ac
BGP router identifier 10.100.100.22, local
BGP table version is 11, IPv4 Unicast confi
7 network entries and 8 paths using 1692 by
BGP attribute entries [2/328], BGP AS path
BGP community entries [0/0], BGP clusterlis

Neighbor        V    AS MsgRcvd MsgSent   T
10.52.21.1      4   100   44106   44105
MultisiteBG1#

MultisiteBG1# show bgp ipv4 unicast neighbo
Peer 10.52.21.1 routes for address family I
BGP table version is 11, Local Router ID is
Status: s-suppressed, x-deleted, S-stale, d
Path type: i-internal, e-external, c-confed
Origin codes: i - IGP, e - EGP, ? - incompl

   Network            Next Hop            M
*>r10.52.21.0/30      0.0.0.0
*>r10.100.100.22/32   0.0.0.0
*>r10.111.111.2/32    0.0.0.0
*>r10.200.200.22/32   0.0.0.0
MultisiteBG1#
```

Route exchange between Border Gateways (B.G-2 ===> B.G-1)

```
MultisiteBG2# sh bgp l2vpn evpn neighbors 10.100.100.22 advertised-routes
Peer 10.100.100.22 routes for address family L2VPN EVPN:
BGP table version is 60, Local Router ID is 10.100.100.21
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-i
njected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - b
est2

   Network            Next Hop            Metric     LocPrf     Weight Path
Route Distinguisher: 10.100.100.21:27001    (ES [0300.0000.0000.6400.0309 0])
*>l[4]:[0300.0000.0000.6400.0309]:[32]:[10.200.200.21]/136
                      10.200.200.21                         100      32768 i

Route Distinguisher: 10.100.100.21:33767     (L2VNI 2001002)
*>l[2]:[0]:[0]:[48]:[005d.738e.a337]:[0]:[0.0.0.0]/216
                      10.200.200.21                         100      32768 i
*>l[3]:[0]:[32]:[10.200.200.21]/88
                      10.200.200.21                         100      32768 i

Route Distinguisher: 10.100.100.21:33768     (L2VNI 2001001)
*>l[2]:[0]:[0]:[48]:[005d.738e.a337]:[0]:[0.0.0.0]/216
                      10.200.200.21                         100      32768 i
*>l[3]:[0]:[32]:[10.200.200.21]/88
                      10.200.200.21                         100      32768 i
Route Distinguisher: 10.100.100.22:33767
Route Distinguisher: 10.100.100.22:33768
Route Distinguisher: 192.168.1.3:33767
Route Distinguisher: 192.168.1.3:33768
Route Distinguisher: 192.168.1.4:33767
Route Distinguisher: 192.168.1.4:33768
Route Distinguisher: 192.168.2.4:33767
*>i[2]:[0]:[0]:[48]:[00c8.8bf9.5f41]:[0]:[0.0.0.0]/216
                      192.168.2.4                           100          0 i
*>i[2]:[0]:[0]:[48]:[00c8.8bf9.5f41]:[32]:[4.2.2.100]/272
                      192.168.2.4                           100          0 i
Route Distinguisher: 192.168.2.4:33768
*>i[2]:[0]:[0]:[48]:[00c8.8bf9.5f42]:[0]:[0.0.0.0]/216
                      192.168.2.4                           100          0 i
*>i[2]:[0]:[0]:[48]:[00c8.8bf9.5f42]:[32]:[4.1.1.100]/272
                      192.168.2.4                           100          0 i

Route Distinguisher: 10.100.100.21:3     (L3VNI 900001)
MultisiteBG2#
```

In DC-1, Route advertisemen

```
MultisiteBG1# sh bgp l2vpn evpn neighbors 192.1
Peer 192.168.1.1 routes for address family L2VPI
BGP table version is 82, Local Router ID is 10.1
Status: s-suppressed, x-deleted, S-stale, d-damp
Path type: i-internal, e-external, c-confed, l-l
Origin codes: i - IGP, e - EGP, ? - incomplete,

   Network            Next Hop            Metri
Route Distinguisher: 10.100.100.21:33767
*>e[2]:[0]:[0]:[48]:[005d.738e.a337]:[0]:[0.0.0
                      10.200.200.21

Route Distinguisher: 10.100.100.21:33768
*>e[2]:[0]:[0]:[48]:[005d.738e.a337]:[0]:[0.0.0
                      10.200.200.21

Route Distinguisher: 10.100.100.22:27001    (ES
*>l[4]:[0300.0000.0000.c800.0309]:[32]:[10.200.2
                      10.200.200.22

Route Distinguisher: 10.100.100.22:33767     (L2
*>l[2]:[0]:[0]:[48]:[6cb2.ae91.38bf]:[0]:[0.0.0
                      10.200.200.22
*>l[3]:[0]:[32]:[10.200.200.22]/88
                      10.200.200.22

Route Distinguisher: 10.100.100.22:33768     (L2
*>l[2]:[0]:[0]:[48]:[6cb2.ae91.38bf]:[0]:[0.0.0
                      10.200.200.22
*>l[3]:[0]:[32]:[10.200.200.22]/88
                      10.200.200.22
Route Distinguisher: 192.168.1.3:33767
Route Distinguisher: 192.168.1.3:33768
Route Distinguisher: 192.168.1.4:33767
Route Distinguisher: 192.168.1.4:33768
Route Distinguisher: 192.168.2.4:33767
*>e[2]:[0]:[0]:[48]:[00c8.8bf9.5f41]:[0]:[0.0.0
                      10.111.111.1             200
*>e[2]:[0]:[0]:[48]:[00c8.8bf9.5f41]:[32]:[4.2.2
                      10.111.111.1             200
Route Distinguisher: 192.168.2.4:33768
*>e[2]:[0]:[0]:[48]:[00c8.8bf9.5f42]:[0]:[0.0.0
                      10.111.111.1             200
*>e[2]:[0]:[0]:[48]:[00c8.8bf9.5f42]:[32]:[4.1.1
                      10.111.111.1             200
MultisiteBG1#
```

CONTROL PLANE VERIFICATIION AT DC-1 (Spine-1, Leaf-1): Destination Prefix is 4.2.2.100 <==> 00c8.8bf9.5f41 <==> Vlan1000 <==> VN

spine1# sh bgp ipv4 unicast summary

```
BGP summary information for VRF default, address family IPv4 Unicast
BGP router identifier 192.168.1.1, local AS number 200
BGP table version is 3, IPv4 Unicast config peers 3, capable peers 2
0 network entries and 0 paths using 0 bytes of memory
BGP attribute entries [0/0], BGP AS path entries [0/0]
BGP community entries [0/0], BGP clusterlist entries [0/0]

Neighbor        V    AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/PfxRcd
10.100.100.22   4   200   43997   43988        0    0    0     4w2d 0 (No Cap)
192.168.1.3     4   200   43986   43984        3    0    0     4w2d 0
192.168.1.4     4   200   43990   43987        3    0    0     4w2d 0
spine1#
```

spine1# sh ip route 10.100.100.22

```
IP Route Table for VRF "default"
'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%<string>' in via output denotes VRF <string>

10.100.100.22/32, ubest/mbest: 1/0
    *via 10.2.2.34, Eth1/1, [110/41], 4w2d, ospf-100, intra
spine1#
```

spine1# sh bgp l2vpn evpn summary

```
BGP summary information for VRF default, address family L2VPN EVPN
BGP router identifier 192.168.1.1, local AS number 200
BGP table version is 31, L2VPN EVPN config peers 3, capable peers 3
19 network entries and 19 paths using 4256 bytes of memory
BGP attribute entries [17/2788], BGP AS path entries [1/6]
BGP community entries [0/0], BGP clusterlist entries [0/0]

Neighbor        V    AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/PfxRcd
10.100.100.22   4   200   44002   43993       31    0    0     4w2d 11
192.168.1.3     4   200   43991   43989       31    0    0     4w2d 4
192.168.1.4     4   200   43996   43992       31    0    0     4w2d 4
spine1#
```

spine1# sh bgp l2vpn evpn 00c8.8bf9.5f41

```
BGP routing table information for VRF default, address family L2VPN EVPN
Route Distinguisher: 192.168.2.4:33767
BGP routing table entry for [2]:[0]:[0]:[48]:[00c8.8bf9.5f41]:[0]:[0.0.0.0]/216,
 version 27
Paths: (1 available, best #1)
Flags: (0x000202) (high32 00000000) on xmit-list, is not in l2rib/evpn, is not i
n HW
Multipath: iBGP

  Advertised path-id 1
  Path type: internal, path is valid, is best path, no labeled nexthop
  AS-Path: 100 , path sourced external to AS
    10.111.111.2 (metric 41) from 10.100.100.22 (10.100.100.22)
      Origin IGP, MED 2000, localpref 100, weight 0
      Received label 2001002
      Extcommunity: RT:200:2001002 ENCAP:8

  Path-id 1 advertised to peers:
    192.168.1.3        192.168.1.4
BGP routing table entry for [2]:[0]:[0]:[48]:[00c8.8bf9.5f41]:[32]:[4.2.2.100]/2
72, version 29
Paths: (1 available, best #1)
Flags: (0x000202) (high32 00000000) on xmit-list, is not in l2rib/evpn, is not i
n HW
Multipath: iBGP

  Advertised path-id 1
  Path type: internal, path is valid, is best path, no labeled nexthop
  AS-Path: 100 , path sourced external to AS
    10.111.111.2 (metric 41) from 10.100.100.22 (10.100.100.22)
      Origin IGP, MED 2000, localpref 100, weight 0
      Received label 2001002 900001
      Extcommunity: RT:200:900001 RT:200:2001002 ENCAP:8 Router MAC:0200.0a6f.6f
       2

  Path-id 1 advertised to peers:
    192.168.1.3        192.168.1.4

spine1#
```

leaf1# sh bgp

```
BGP summary in
BGP router ide
BGP table vers
36 network ent
BGP attribute
BGP community

Neighbor
192.168.1.1
192.168.1.2
leaf1#
```

leaf1# show bg

```
BGP routing ta
BGP routing ta
Paths: (1 avai
Flags: (0x080
  vpn: versio

  Advertised p
  Path type: i
                                                                    2
32]:[4.2.2.100
  AS-Path: 100
    10.111.111
      Origin I
      Received
      Extcommu
          RT:2
          RT:2
          ENCA
          Rout
      Originat

  VRF advertis
  Path-id 1 no

  VPN AF adver
  Path-id 1 no
leaf1#
```

Host Reachability Verification from DC-1 to DC-2

ToLeaf1#show ip int br | e down

```
Interface              IP-Address      OK? Method Status    Protocol
Vlan1000               4.2.2.10        YES NVRAM  up        up
Vlan1001               4.1.1.10        YES NVRAM  up        up
GigabitEthernet1/0/1   unassigned      YES unset  up        up
ToLeaf1#
```

ToLeaf1#ping 4.2.2.100

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 4.2.2.100, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/4/9 ms
ToLeaf1#
```

ToLeaf1#show ip arp 4.2.2.100

```
Protocol  Address          Age (min)  Hardware Addr   Type   Interface
Internet  4.2.2.100               54  00c8.8bf9.5f41  ARPA   Vlan1000
ToLeaf1#
```

toMultisiteLeaf1#sh ip interf bri | ex down

```
Interface              IP-Address      OK? Method Status    Protocol
Vlan1000               4.2.2.100       YES NVRAM  up        up
Vlan1001               4.1.1.100       YES NVRAM  up        up
GigabitEthernet2/0/1   unassigned      YES unset  up        up
```

toMultisiteLeaf1#sh ip arp 4.2.2.100

```
Protocol  Address          Age (min)  Hardware Addr   Type   Interface
Internet  4.2.2.100               -  00c8.8bf9.5f41  ARPA   Vlan1000
toMultisiteLeaf1#
```

Reachability Verification from DC-1 Leaf-1

leaf1# show mac address-table | i 00c8.8bf9.5f41|"+"|Type

```
   VLAN     MAC Address       Type      age     Secure NTFY   Ports/SWID.SSID.LID
* 1000     00c8.8bf9.5f41    dynamic   0         F    F  nve1/10.111.111.2
leaf1#
```

leaf1# show ip interface bri vrf all

```
IP Interface Status for VRF "default"(1)
Interface            IP Address      Interface Status
Lo0                  192.168.1.3     protocol-up/link-up/admin-up
Eth1/18              1.1.1.1         protocol-down/link-down/admin-d
Eth2/23              172.16.1.2      protocol-up/link-up/admin-up
Eth2/24              172.16.2.2      protocol-up/link-up/admin-up

IP Interface Status for VRF "management"(2)
Interface            IP Address      Interface Status
mgmt0                10.31.121.19    protocol-up/link-up/admin-up

IP Interface Status for VRF "vxlan-900001"(3)
Interface            IP Address      Interface Status
Vlan101              forward-enabled protocol-up/link-up/admin-up
Vlan1000             4.2.2.1         protocol-up/link-up/admin-up
Vlan1001             4.1.1.1         protocol-up/link-up/admin-up

leaf1#
```

leaf1# show ip arp vrf vxlan-900001

```
Flags: * - Adjacencies learnt on non-active FHRP router
       + - Adjacencies synced via CFSoE
       # - Adjacencies Throttled for Glean
       D - Static Adjacencies attached to down interface

IP ARP Table for context vxlan-900001
Total number of entries: 2
Address         Age       MAC Address     Interface
4.1.1.10        00:03:56  0035.1ac1.37c3  Vlan1001
4.2.2.10        00:13:10  0035.1ac1.37c2  Vlan1000
leaf1#
```

leaf1# show ip route vrf vxl

```
IP Route Table for VRF "vxl
'*' denotes best ucast next-
'**' denotes best mcast next
'[x/y]' denotes [preference/
'%<string>' in via output de

4.2.2.100/32, ubest/mbest:
    *via 10.111.111.2%defaul
pls-vpn)segid 900001 tunnel:

leaf1#
```

leaf1# traceroute 10.111.11

```
traceroute to 10.111.111.2
 1  172.16.1.1 (172.16.1.1)
 2  10.111.111.2 (10.111.11
leaf1#
```

leaf1# show l2route evpn ma

```
Mac Address    Prod Host IP
-------------- ---- --------
0035.1ac1.37c2 HMM  4.2.2.1
00c8.8bf9.5f41 BGP  4.2.2.1
e0d1.73a4.1d41 BGP  4.2.2.1
leaf1#
```

leaf1# show nve internal bg

```
VNI     Peer-IP              Pe
900001  10.111.111.2         02
200100110.111.111.2          0
200100210.111.111.2          0
leaf1#
```

Leaf-1 MAC Address Verification

```
leaf1# sh mac address-table vlan 1000
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/SWID.SSID.LID
---------+-----------------+--------+---------+------+----+------------------
* 1000     0000.2222.3333   static    0          F    F  sup-eth2
* 1000     0035.1ac1.37c2   dynamic   730        F    F  Eth1/23
* 1000     005d.738e.a337   static    0          F    F  nve1/10.111.111.2
* 1000     00c8.8bf9.5f41   dynamic   0          F    F  nve1/10.111.111.2
* 1000     6cb2.ae91.38bf   static    0          F    F  nve1/10.200.200.22
* 1000     e0d1.73a4.1d41   dynamic   0          F    F  nve1/192.168.1.4
leaf1#
```

```
leaf1# show mac address-table vlan 1001
Legend:
        * - primary entry, G - Gateway MAC, (R)
        age - seconds since last seen,+ - prima
   VLAN     MAC Address      Type      age
---------+-----------------+--------+---------
* 1001     0000.2222.3333   static    0
* 1001     0035.1ac1.37c3   dynamic   630
* 1001     005d.738e.a337   static    0
* 1001     00c8.8bf9.5f42   dynamic   0
* 1001     6cb2.ae91.38bf   static    0
* 1001     e0d1.73a4.1d42   dynamic   0
leaf1#
```

```
leaf1# sh system internal l2rib event-history mac | i 0035.1ac1.37c2
[04/24/20 13:10:09.721 UTC 3 4173] Received MAC ROUTE msg: addr: (1000-0035.1ac1.37c2) vni: 0 admin_dist: 0 seq_num: 0 rt_flags: L soo: 0 dg_co
[04/24/20 13:10:09.721 UTC 6 4173] (1000,0035.1ac1.37c2,3):MAC route created with seq num:0, flags:L (), soo:0, peerid:0
[04/24/20 13:10:09.732 UTC c 4173] (1000,0035.1ac1.37c2,3):Encoding MAC best route (ADD, client id 4)
[04/24/20 13:10:09.871 UTC e 4173] (1000,0035.1ac1.37c2):Bound MAC-IP(4.2.2.10) to MAC, Total MAC-IP linked: 1

leaf1# show system internal l2rib event-history mac | i 0035.1ac1.37c3
[04/24/20 13:10:09.721 UTC 8 4173] Received MAC ROUTE msg: addr: (1001-0035.1ac1.37c3) vni: 0 admin_dist: 0 seq_num: 0 rt_flags: L soo: 0 dg_co
[04/24/20 13:10:09.721 UTC b 4173] (1001,0035.1ac1.37c3,3):MAC route created with seq num:0, flags:L (), soo:0, peerid:0
[04/24/20 13:10:09.732 UTC d 4173] (1001,0035.1ac1.37c3,3):Encoding MAC best route (ADD, client id 4)
[04/24/20 13:10:09.871 UTC f 4173] (1001,0035.1ac1.37c3):Bound MAC-IP(4.1.1.10) to MAC, Total MAC-IP linked: 1


leaf1# sh system internal l2rib event-history mac-ip | i 0035.1ac1.37c2
[04/24/20 13:10:09.871 UTC 2 4173] Received MAC-IP ROUTE msg: addr: (1000-0035.1ac1.37c2) host ip: 4.2.2.10 vni: 0 L3 info: 900001 rt_flags:
[04/24/20 13:10:09.871 UTC 3 4173] (1000,0035.1ac1.37c2,4.2.2.10):MAC-IP entry created
[04/24/20 13:10:09.871 UTC 4 4173] (1000,0035.1ac1.37c2,4.2.2.10,12):MAC-IP route created with flags 0, L3 vrf 900001, seq 0, admin dist 7, soo 0
[04/24/20 13:10:09.882 UTC 9 4173] (1000,0035.1ac1.37c2,4.2.2.10,12):Encoding MAC-IP best route (ADD, client id 4)
leaf1#

leaf1# show system internal l2rib event-history mac-ip | i 0035.1ac1.37c3
[04/24/20 13:10:09.871 UTC 6 4173] Received MAC-IP ROUTE msg: addr: (1001-0035.1ac1.37c3) host ip: 4.1.1.10 vni: 0 L3 info: 900001 rt_flags:
[04/24/20 13:10:09.871 UTC 7 4173] (1001,0035.1ac1.37c3,4.1.1.10):MAC-IP entry created
[04/24/20 13:10:09.871 UTC 8 4173] (1001,0035.1ac1.37c3,4.1.1.10,12):MAC-IP route created with flags 0, L3 vrf 900001, seq 0, admin dist 7, soo 0
[04/24/20 13:10:09.882 UTC a 4173] (1001,0035.1ac1.37c3,4.1.1.10,12):Encoding MAC-IP best route (ADD, client id 4)
leaf1#
```

Fehlerbehebung

Informationen zur Fehlerbehebung finden Sie unter Fehlerbehebung bei EVPN/VxLAN in Umgebungen mit mehreren Standorten.

Zugehörige Informationen

- **VXLAN EVPN Multi-SiteDesign und Bereitstellung - Whitepaper**
- **Konfigurieren von VXLAN EVPN Multi-Site**

Informationen zu dieser Übersetzung

Cisco hat dieses Dokument maschinell übersetzen und von einem menschlichen Übersetzer editieren und korrigieren lassen, um unseren Benutzern auf der ganzen Welt Support-Inhalte in ihrer eigenen Sprache zu bieten. Bitte beachten Sie, dass selbst die beste maschinelle Übersetzung nicht so genau ist wie eine von einem professionellen Übersetzer angefertigte. Cisco Systems, Inc. übernimmt keine Haftung für die Richtigkeit dieser Übersetzungen und empfiehlt, immer das englische Originaldokument (siehe bereitgestellter Link) heranzuziehen.