

# Risoluzione dei problemi di EVPN/VxLAN in ambiente multisito

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## Introduzione

In questo documento viene descritto come risolvere i problemi relativi a VPN Ethernet/VLAN (Virtual Extensible LAN) in ambienti multisito.

## Prerequisiti

### Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

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

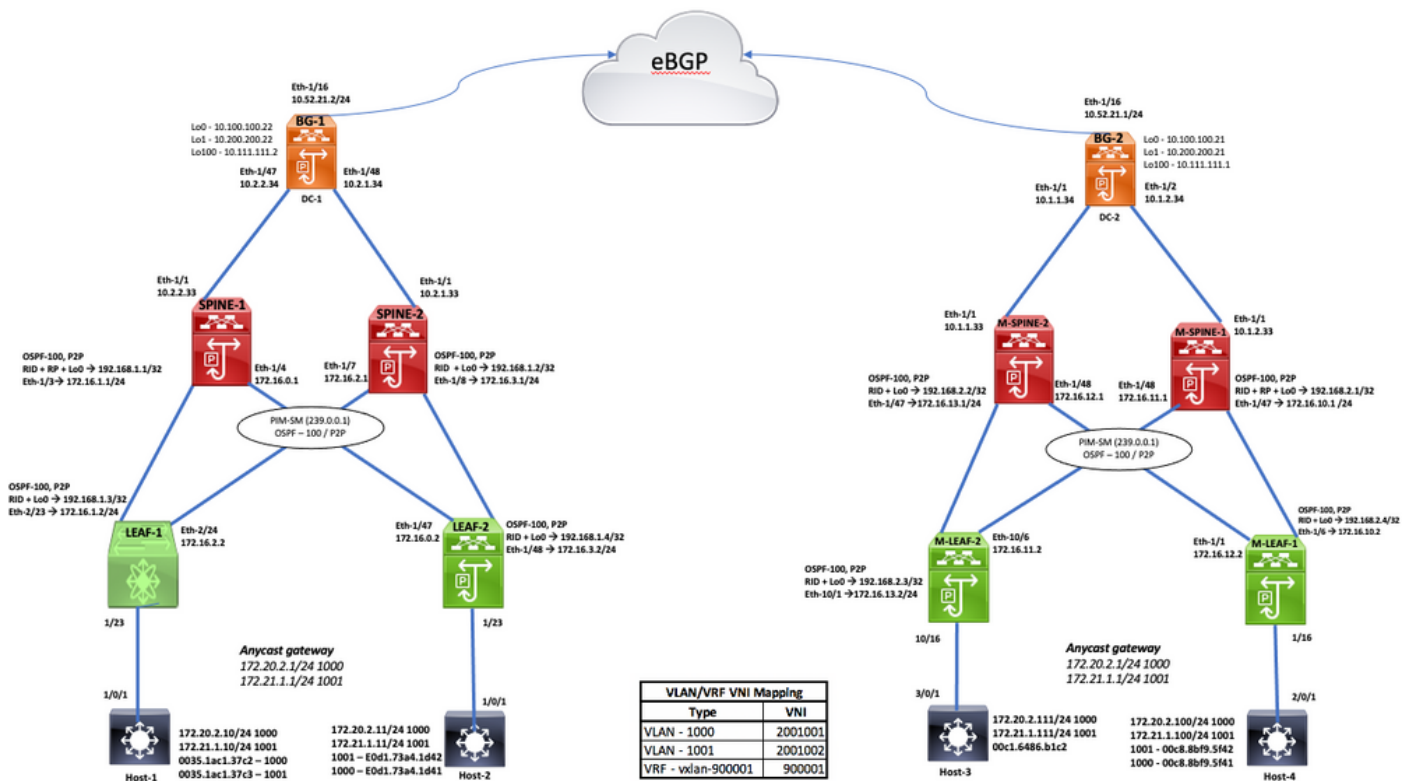
## Componenti usati

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

foglia1#	N5K-C5672UP-16G-SUP	sistema: versione 7.3(0)N1(1)
foglia2#	N9K-C92160YC-X	NXOS: versione 9.2(3)
dorso1#	N9K-C9396PX	NXOS: versione 9.2(3)
dorso2#	N9K-C9396PX	NXOS: versione 9.2(3)
MultisitoBG1#	N9K-C93108TC-EX	NXOS: versione 9.2(3)
MultisitoBG2#	N9K-C93108TC-FX	NXOS: versione 9.3(1)
multisitespine2#	N9K-C9372TX-E	NXOS: versione 9.2(3)
Multistespine1#	N9K-C92160YC-X	NXOS: versione 9.2(3)
FogliaMultiplo1#	N9K-C93108TC-EX	NXOS: versione 7.0(3)17(5)

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.

## Topologia



Questo documento descrive da dove proviene il traffico (DC-1, host 1/2 - 172.20.2.10/11) e prosegue con i nostri pacchetti fino alla destinazione DC-2, host 4 (172.20.2.100).

## Verifica del Control Plane

Flusso



traffico:  
Verificare l'IP, la VLAN corretta sul nodo di origine.

Passaggio 1.

ToLeaf1#**show ip interface brief | exclude down**

Interface	IP-Address	OK?	Method	Status	Protocol
Vlan1000	172.20.2.10	YES	NVRAM	up	up
Vlan1001	172.21.1.10	YES	NVRAM	up	up
GigabitEthernet1/0/1	unassigned	YES	unset	up	up

ToLeaf1#

Ora si ha la raggiungibilità dal nodo di origine alla relativa SVI-GW della Vlan-1000.

ToLeaf1#**ping 172.20.2.1**

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 172.20.2.1, timeout is 2 seconds:

!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/205/1006 ms

ToLeaf1#

Passaggio 2. Passare al primo hop **foglia1** e verificare gli elementi ai livelli 2 e 3.

Verificare ora se **leaf1** apprende il mac, arp dal nodo di origine o meno.

Sì, indirizzo mac (0035.1ac1.37c2), IP 172.20.2.10 del nodo di origine viene appreso su eth1/23 fino a Vlan1000.

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

VLAN	MAC Address	Type	age	Secure	NTFY	Ports/SWID.SSID.LID
* 1001	0000.2222.3333	static	0	F	F	sup-eth2

```

* 1001      0035.1ac1.37c3      dynamic      500          F      F      Eth1/23
* 1001      005d.738e.a337      static       0            F      F      nve1/10.111.111.2
* 1001      00c8.8bf9.5f42      dynamic       0            F      F      nve1/10.111.111.2
* 1001      6cb2.ae91.38bf      static        0            F      F      nve1/10.200.200.22
* 1001      e0d1.73a4.1d42      dynamic       0            F      F      nve1/192.168.1.4
* 1000      0000.2222.3333      static        0            F      F      sup-eth2
* 1000      0035.1ac1.37c2      dynamic       70          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#

```

## Verifica della tabella ARP in Source-Leaf

```
leaf1#show ip arp vrf all
```

```

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 all contexts
```

```
Total number of entries: 5
```

Address	Age	MAC Address	Interface
172.21.1.10	00:08:14	0035.1ac1.37c3	Vlan1001
<b>172.20.2.10</b>	<b>00:00:58</b>	<b>0035.1ac1.37c2</b>	<b>Vlan1000</b>
10.31.121.1	00:08:14	2c31.24b0.bf46	mgmt0
172.16.1.1	00:07:51	0081.c41c.f007	Ethernet2/23
172.16.2.1	00:08:14	cc46.d68f.d74b	Ethernet2/24

```
leaf1#
```

In questo esempio viene mostrato come foglia1 ottiene il messaggio per creare una voce IP/mac del nodo di origine.

```

leaf1#show system internal l2rib event-history mac | i 0035.1ac1.37c2 | be create

[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(172.20.2.10) to MAC, Total
MAC-IP linked: 1

[04/24/20 13:10:42.651 UTC 1a 4173] Received MAC ROUTE msg: addr: (1000-0035.1ac1.37c2) vni: 0
admin_dist: 0 seq_num: 0 rt_flags: L soo: 0 dg_count: 0 res: 0 esi: (F) nh_count: 1

[04/24/20 13:10:42.651 UTC 1c 4173] (1000,0035.1ac1.37c2):Mobility check for new rte from prod:
3

[04/24/20 13:10:42.651 UTC 1d 4173] (1000,0035.1ac1.37c2):Current non-del-pending route
local:yes, remote:no, linked mac-ip count:1

[04/24/20 13:10:42.651 UTC 1e 4173] (1000,0035.1ac1.37c2):Mobility type: local-to-local; New
route SOO: 0, Seq num: 0; Existing route SOO: 0, Seq num: 0

[04/24/20 13:10:42.651 UTC 1f 4173] (1000,0035.1ac1.37c2):Local Update, Add to DB

[04/24/20 13:10:42.651 UTC 20 4173] (1000,0035.1ac1.37c2,3):Using seq number from Recv-based
route

<.....snipped for brevity.....>

```

leaf1#

Una volta verificato il modo in cui la voce mac/IP è stata creata in foglia1, questo è uno dei punti di osservazione importanti in cui le informazioni mac/mac-ip sono legate a BGP e vengono pubblicizzate come route l2vpn/evpn.

```
leaf1#show bgp l2vpn evpn 0035.1ac1.37c2
```

```
Route Distinguisher: 192.168.1.3:33767 (L2VNI 2001002)
```

```
BGP routing table entry for [2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216, version 99
```

```
Paths: (1 available, best #1)
```

```
Flags: (0x00010a) on xmit-list, is not in l2rib/evpn
```

```
Advertised path-id 1
```

```
Path type: local, path is valid, is best path
```

```
AS-Path: NONE, path locally originated
```

```
192.168.1.3 (metric 0) from 0.0.0.0 (192.168.1.3)
```

```
Origin IGP, MED not set, localpref 100, weight 32768
```

```
Received label 2001002
```

```
Extcommunity:
```



Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected

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 (L2VNI 2001002)**

**\*>1[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216**

192.168.1.3	100	32768	i
-------------	-----	-------	---

**\*>1[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[32]:[172.20.2.10]/272**

192.168.1.3	100	32768	i
-------------	-----	-------	---

**Route Distinguisher: 192.168.1.3:33768 (L2VNI 2001001)**

**\*>1[2]:[0]:[0]:[48]:[0035.1ac1.37c3]:[0]:[0.0.0.0]/216**

192.168.1.3	100	32768	i
-------------	-----	-------	---

**\*>1[2]:[0]:[0]:[48]:[0035.1ac1.37c3]:[32]:[172.21.1.10]/272**

192.168.1.3	100	32768	i
-------------	-----	-------	---

Route Distinguisher: 192.168.1.4:33767

Route Distinguisher: 192.168.1.4:33768

Route Distinguisher: 192.168.2.4:33767

Route Distinguisher: 192.168.2.4:33768

Route Distinguisher: 192.168.1.3:3 (L3VNI 900001)

leaf1#

## Verifica route DC-1 da Leaf1 a Spine2

leaf1#**show bgp l2vpn evpn neighbors 192.168.1.2 advertised-routes**

Peer 192.168.1.2 routes for address family L2VPN EVPN:

BGP table version is 191, local router ID is 192.168.1.3

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-injected

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					
<b>Route Distinguisher: 192.168.1.3:33767 (L2VNI 2001002)</b>					
<b>*&gt;1[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216</b>					
	192.168.1.3		100	32768	i
<b>*&gt;1[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[32]:[172.20.2.10]/272</b>					
	192.168.1.3		100	32768	i
<b>Route Distinguisher: 192.168.1.3:33768 (L2VNI 2001001)</b>					
<b>*&gt;1[2]:[0]:[0]:[48]:[0035.1ac1.37c3]:[0]:[0.0.0.0]/216</b>					
	192.168.1.3		100	32768	i



```
*>1[2]:[0]:[0]:[48]:[0035.1ac1.37c3]:[32]:[172.21.1.10]/272
```

```
192.168.1.3
```

```
100
```

```
32768 i
```

```
Route Distinguisher: 192.168.1.4:33767
```

```
Route Distinguisher: 192.168.1.4:33768
```

```
Route Distinguisher: 192.168.2.4:33767
```

```
Route Distinguisher: 192.168.2.4:33768
```

```
Route Distinguisher: 192.168.1.3:3 (L3VNI 900001)
```

```
leaf1#
```

Poiché sono presenti più spine, controllate i diversi comandi su spine diverse per confermarle (gli aggiornamenti delle route rimangono intatti).

In DC-1, SPINE-1 e SPINE-2 hanno un vicinato EVPN con Leaf1, Leaf2 e BGW-1

```
spine1#show 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#
```

```
spine2#show bgp l2vpn evpn summary
```

```
BGP summary information for VRF default, address family L2VPN EVPN
BGP router identifier 192.168.1.2, local AS number 200
BGP table version is 65, 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	47140	47115	65	0	0	4w4d 11	
192.168.1.3	4	200	47115	47112	65	0	0	4w4d 4	
192.168.1.4	4	200	47121	47116	65	0	0	4w4d 4	

```
spine2#
```

Finora è stato raggiunto il livello SPINE, ora è possibile verificare se viene passato al gateway di confine (DC-1, BGW-1) o meno.

```
spine2#show 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 65, Local Router ID is 192.168.1.2
```

```
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-redirect, I-injected
```

```
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - best2
```

Network	Next Hop	Metric	LocPrf	Weight	Path
Route Distinguisher: 10.100.100.21:33767					
Route Distinguisher: 10.100.100.21:33768					
Route Distinguisher: 10.100.100.22:27001					

Route Distinguisher: 10.100.100.22:33767

Route Distinguisher: 10.100.100.22:33768

**Route Distinguisher: 192.168.1.3:33767**

\*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216

192.168.1.3 100 0 i

\*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[32]:[172.20.2.10]/272

192.168.1.3 100 0 i

**Route Distinguisher: 192.168.1.3:33768**

\*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c3]:[0]:[0.0.0.0]/216

192.168.1.3 100 0 i

\*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c3]:[32]:[172.21.1.10]/272

192.168.1.3 100 0 i

Route Distinguisher: 192.168.1.4:33767

\*>i[2]:[0]:[0]:[48]:[e0d1.73a4.1d41]:[0]:[0.0.0.0]/216

192.168.1.4 100 0 i

\*>i[2]:[0]:[0]:[48]:[e0d1.73a4.1d41]:[32]:[172.20.2.11]/272

192.168.1.4 100 0 i

Route Distinguisher: 192.168.1.4:33768

\*>i[2]:[0]:[0]:[48]:[e0d1.73a4.1d42]:[0]:[0.0.0.0]/216

192.168.1.4 100 0 i

\*>i[2]:[0]:[0]:[48]:[e0d1.73a4.1d42]:[32]:[172.21.1.11]/272

192.168.1.4 100 0 i

Route Distinguisher: 192.168.2.4:33767

Route Distinguisher: 192.168.2.4:33768

spine2#

<<<<<<<<<

```
spine2#show bgp l2vpn evpn neighbors 10.100.100.22 advertised-routes | i 0035.1ac1.37c2  
p 1 n 1
```

Route Distinguisher: 192.168.1.3:33767

```
*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216
```

```
192.168.1.3 100 0 i
```

```
*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[32]:[172.20.2.10]/272
```

```
192.168.1.3 100 0 i
```

spine2#

Verifica al livello BORDER di DC-1, da cui le route vengono propagate a un sito diverso.

Sarà quindi possibile vedere con chi, quale tipo di route e quanti route vengono scambiate in BGW-1

## DC-1 BGW-1

```
MultisiteBG1#show bgp l2vpn evpn summary
```

BGP summary information for VRF default, address family L2VPN EVPN

BGP router identifier 10.100.100.22, local AS number 200

BGP table version is 233, L2VPN EVPN config peers 3, capable peers 3

37 network entries and 45 paths using 7296 bytes of memory

BGP attribute entries [37/6068], BGP AS path entries [1/6]

BGP community entries [0/0], BGP clusterlist entries [4/16]

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.100.100.21	4	100	47145	47121	233	0	0	4w4d	8
192.168.1.1	4	200	47153	47125	233	0	0	18:52:35	8
192.168.1.2	4	200	47139	47119	233	0	0	4w4d	8

Neighbor	T	AS	PfxRcd	Type-2	Type-3	Type-4	Type-5
----------	---	----	--------	--------	--------	--------	--------

```

10.100.100.21  E   100 8           6           2           0           0
192.168.1.1   I   200 8           8           0           0           0
192.168.1.2   I   200 8           8           0           0           0

```

MultisiteBG1#

MultisiteBG1#**show bgp l2vpn evpn neighbors 10.100.100.21 advertised-routes**

Peer 10.100.100.21 routes for address family L2VPN EVPN:

BGP table version is 233, Local Router ID is 10.100.100.22

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-injected

Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - best2

Network	Next Hop	Metric	LocPrf	Weight	Path
---------	----------	--------	--------	--------	------

Route Distinguisher: 10.100.100.21:33767

Route Distinguisher: 10.100.100.21:33768

Route Distinguisher: 10.100.100.22:27001 (ES [0300.0000.0000.c800.0309 0])

\*>l[4]:[0300.0000.0000.c800.0309]:[32]:[10.200.200.22]/136

10.200.200.22	100	32768	i
---------------	-----	-------	---

Route Distinguisher: 10.100.100.22:33767 (L2VNI 2001002)

\*>l[2]:[0]:[0]:[48]:[6cb2.ae91.38bf]:[0]:[0.0.0.0]/216

10.200.200.22	100	32768	i
---------------	-----	-------	---

\*>l[3]:[0]:[32]:[10.200.200.22]/88

10.200.200.22	100	32768	i
---------------	-----	-------	---

Route Distinguisher: 10.100.100.22:33768 (L2VNI 2001001)

\*>l[2]:[0]:[0]:[48]:[6cb2.ae91.38bf]:[0]:[0.0.0.0]/216

10.200.200.22	100	32768	i
---------------	-----	-------	---

\*>l[3]:[0]:[32]:[10.200.200.22]/88

10.200.200.22 100 32768 i

Route Distinguisher: 192.168.1.3:33767

\*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216

192.168.1.3 100 0 i

\*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[32]:[172.20.2.10]/272

192.168.1.3 100 0 i

Route Distinguisher: 192.168.1.3:33768

\*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c3]:[0]:[0.0.0.0]/216

192.168.1.3 100 0 i

\*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c3]:[32]:[172.21.1.10]/272

192.168.1.3 100 0 i

Route Distinguisher: 192.168.1.4:33767

\*>i[2]:[0]:[0]:[48]:[e0d1.73a4.1d41]:[0]:[0.0.0.0]/216

192.168.1.4 100 0 i

\*>i[2]:[0]:[0]:[48]:[e0d1.73a4.1d41]:[32]:[172.20.2.11]/272

192.168.1.4 100 0 i

Route Distinguisher: 192.168.1.4:33768

\*>i[2]:[0]:[0]:[48]:[e0d1.73a4.1d42]:[0]:[0.0.0.0]/216

192.168.1.4 100 0 i

\*>i[2]:[0]:[0]:[48]:[e0d1.73a4.1d42]:[32]:[172.21.1.11]/272

192.168.1.4 100 0 i

Route Distinguisher: 192.168.2.4:33767

Route Distinguisher: 192.168.2.4:33768

MultisiteBG1#

```
MultisiteBG1#show bgp l2vpn evpn neighbors 10.100.100.21 advertised-routes | i 0035.1ac1.37c2  
p 1 n 1
```

```
Route Distinguisher: 192.168.1.3:33767
```

```
*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216
```

```
192.168.1.3 100 0 i
```

```
*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[32]:[172.20.2.10]/272
```

```
192.168.1.3 100 0 i
```

```
MultisiteBG1#
```

Una volta ricevute le route in DC-2/BGW-2, viene visualizzato l'annuncio della route alla relativa SPINE-1 collegata (192.168.2.1)

## DC-2 BGW-2

```
MultisiteBG2#show 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 142, L2VPN EVPN config peers 3, capable peers 2
```

```
43 network entries and 43 paths using 7680 bytes of memory
```

```
BGP attribute entries [33/5412], BGP AS path entries [1/6]
```

```
BGP community entries [0/0], BGP clusterlist entries [1/4]
```

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.100.100.22	4	200	47169	47124	142	0	0	4w4d	12
192.168.2.1	4	100	47136	47124	142	0	0	4w4d	4
192.168.2.2	4	100	45969	45963	0	0	0	19:21:40	Idle

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	Idle	0	0	0	0

```
MultisiteBG2#
```

```
MultisiteBG2#show bgp l2vpn evpn neighbors 192.168.2.1 advertised-routes | i 0035.1ac1.37c2 p 1 n 1
```

```
Route Distinguisher: 192.168.1.3:33767
```

```
*>e[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216
```

```
10.111.111.2 2000 0 200 i
```

```
*>e[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[32]:[172.20.2.10]/272
```

```
10.111.111.2 2000 0 200 i
```

```
MultisiteBG2#
```

Le route vengono ulteriormente annunciate a DC-2, Leaf-1 dove è connessa la destinazione.

## DC-2 Annuncio route da dorso a foglia

```
Multistespinel1#show bgp l2vpn evpn summary
```

```
BGP summary information for VRF default, address family L2VPN EVPN
```

```
BGP router identifier 192.168.2.1, local AS number 100
```

```
BGP table version is 50, L2VPN EVPN config peers 3, capable peers 2
```

```
19 network entries and 19 paths using 4256 bytes of memory
```

```
BGP attribute entries [15/2460], 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
10.100.100.21	4	100	47152	47131	50	0	0	4w4d 15	
192.168.2.3	4	100	0	0	0	0	0	4w4d Idle	
192.168.2.4	4	100	47135	47131	50	0	0	4w4d 4	

```
Multistespinel1#
```

```
Multistespinel1#show bgp l2vpn evpn neighbors 192.168.2.4 advertised-routes | i 0035.1ac1.37c2 p 1 n 1
```

```
Route Distinguisher: 192.168.1.3:33767
```

```
*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[0]:[0.0.0.0]/216
```

```
10.111.111.1 2000 100 0 200 i
```

```
*>i[2]:[0]:[0]:[48]:[0035.1ac1.37c2]:[32]:[172.20.2.10]/272
```





```

* 1001    00c8.8bf9.5f42    dynamic  0          F        F        Eth1/16
C 1001    e0d1.73a4.1d42    dynamic  0          F        F        nve1(10.111.111.1)
G  -      0000.2222.3333    static   -          F        F        sup-eth1(R)
G  -      00be.75f4.544d    static   -          F        F        sup-eth1(R)
G 101     00be.75f4.544d    static   -          F        F        sup-eth1(R)
G 1000    00be.75f4.544d    static   -          F        F        sup-eth1(R)
G 1001    00be.75f4.544d    static   -          F        F        sup-eth1(R)

```

MultisteLeaf1#

DC-2, Leaf-1 ha imparato a usare il Mac Host-4 fino al Vlan1000.

MultisteLeaf1#**show ip arp vrf vxlan-900001**

```

Flags: * - Adjacencies learnt on non-active FHRP router
+ - Adjacencies synced via CFSOE
# - Adjacencies Throttled for Glean
CP - Added via L2RIB, Control plane Adjacencies
PS - Added via L2RIB, Peer Sync
RO - Re-Originated Peer Sync Entry
D - Static Adjacencies attached to down interface

```

IP ARP Table for context vxlan-900001

Total number of entries: 2

Address	Age	MAC Address	Interface	Flags
172.21.1.100	00:04:09	00c8.8bf9.5f42	Vlan1001	
<b>172.20.2.100</b>	<b>00:04:09</b>	<b>00c8.8bf9.5f41</b>	<b>Vlan1000</b>	

MultisteLeaf1#

## Risoluzione dei problemi del piano dati

La verifica del piano dati viene testata su più dispositivi per comprendere diversi metodi e varianti di acquisizione dei pacchetti.



```
-----
0 0 Nexus 72UP 16GFC Supervisor N5K-C5672UP-16G-SUP active *
1 24 Nexus 24xSFP Ethernet Module N5600-72UP16GFC ok <<<<<<<<<<<<<<<<<<< To DC-1/Host-1
2 24 Nexus 24xSFP Ethernet/FC Module N5600-72UP16GFC-FC ok
3 6 Nexus 6xQSFP Ethernet Module N5600-72UP16GFC-M6Q ok
```

Mod Sw Hw World-Wide-Name(s) (WWN)

```
-----
0 7.3(0)N1(1) 1.5 --
1 7.3(0)N1(1) 1.5 --
2 7.3(0)N1(1) 1.5 --
3 7.3(0)N1(1) 1.5 --
```

Mod MAC-Address(es) Serial-Num

```
-----
0 00de.fb01.9f88 to 00de.fb01.9f88 FOC20162AGC
1 00de.fb01.9f88 to 00de.fb01.9f9f FOC20162AGC
2 00de.fb01.9fa0 to 00de.fb01.9fb7 FOC20162AGC
3 00de.fb01.9fb8 to 00de.fb01.9fcf FOC20162AGC
```

leaf1#

Vedere ora come è possibile controllare la mappatura di base/istanza.

```
leaf1#show platform fwm info pif eth1/23 | i i slot_asic
```

```
Eth1/23 pd: slot 0 logical port num 22 slot_asic_num 1 global_asic_num 2 fw_inst 10 phy_fw_inst
2 fc 0
leaf1#
```

```
leaf1#show hardware internal bigsur all-ports | i "asic|idx|1/23"
```

```
Port |asic|inst|inst|
name |idx |slot|asic|eport|logi|flag|adm|opr|if_index|diag|ucVer
1gb1/23 |2 |0 |1 |10 p |22 |b3 |en |up |1a016000|pass| 0.00
leaf1#
```

Qui è possibile vedere i pacchetti in uscita da Leaf-1 all'host-1.

```
leaf1#elam slot 1 asic bigsur instance 1
```

```
leaf1(bigsur-elam)#trigger lu egress ipv4 if destination-ipv4-address_ipv4 172.20.2.10
```

```
leaf1(bigsur-elam)#start capture
```

```
leaf1(bigsur-elam)#show capture lu
```

```
Egress Interface: Ethernet1/23 IS NOT A PC <<<<<<<<<<<<<<<<<<< ELAM is smart, we have a catalyst switch as HOST-1 :-)
```

```
+-----+
| Lookup Vector |
+-----+-----+
| Field | Raw Value |
+-----+-----+
```

```
| SID | 21 |
| PKT_ID | 13 |
| TUN_VLD | 0 |
| TUN_TYPE | 0 |
| TUN_IF | 0 |
| TUN_INST | 0 |
| ERSPAN_TERM_VLD | 0 |
| ERSPAN_DST_IF_IDX | 0 |
| L2MP_VLD | 1 |
| TRILL_ODA | 0x000000000000 |
| TRILL_OQTAG_VLD | 0 |
| TRILL_OQTAG_DE | 0 |
```

```

| TRILL_DCE_FTAG_VLD | 0 |
| TRILL_DCE_LID_VLD | 0 |
| TRILL_VRM | 0 |
| TRILL_OPT_VLD | 0 |
| TRILL_OPT_BYTE0 | 0 |
| CDCE_DA | 0x020abc000004 |
| CDCE_SA | 0x022001000000 |
| CDCE_DTAG_ETYPE | 0x0200 |
| CDCE_DTAG_TTL | 32 |
| CDCE_DTAG_FTAG | 2 |
| NSH_WORD2 | 0x3e70080 |
| CE_DA | 0x00351ac137c2 |<<<<<<<<<<<<<<<<<<<<<<<<< Destination Mac address (Host-1 172.20.2.10)
| CE_SA | 0x00c88bf95f41 |<<<<<<<<<<<<<<<<<<<<<<<<< Source Mac address (Host-4 172.20.2.100)
| VNIC_VLD | 0 |
| CE_1Q_NUM | 1 |
| INT_VLAN | 999 |
| IP_RESV_0 | 0 |
| FCOE_VLD | 0 |
| MPLS_VLD | 0 |
| VEC_TYPE | 0 |
| TRILL_OSA | 0x000000000000 |
| CMD_SGT_VLD | 0 |
| CMD_SGT | 0 |
| CMD_DGT_VLD | 0 |
| CMD_DGT | 0 |
| HDRP_SNAP | 0 |
| L3_IPV6 | 0 |
| L3_SA | 172.20.2.100 |<<<<<<<<<<<<<<<<<<<<<<<<< Source IP
| L3_DA | 172.20.2.10 |<<<<<<<<<<<<<<<<<<<<<<<<< Destination IP
| L3_TOS | 0 |
| L3_FRAG | 0 |
| L3_MF | 0 |
| L3_TTL | 255 |
| L3_OPT_NONE | 0 |
| L3_NONE_HBH | 0 |
| L3_NONE_ROUTE | 0 |
| L3_NONE_FRAG | 0 |
| L3_NONE_DEST | 0 |
| L3_AH | 0 |
| L3_ESP | 0 |
| L3_PROT | 1 |<<<<<<<<<<<<<<<<<<<<<<<<< ICMP
| L3_LENGTH | 100 |
| MAX_IPV6_HBH | 0 |
| MAX_IPV6_FRAG | 0 |
| L4_TCP_UDP | 0 |
| IP_RESV_1 | 0 |
+-----+
| PYLD_LEN | 4 |
| PARSE_ERR | 0 |
| PARSE_UNEXP | 0 |
| ECN_DROP | 0 |
| IDS_FAIL | 0 |
| IDS_CODE | 0 |
| LKUP_SPARE | 0 |
+-----+
leaf1(bigsur-elam)#

```

È ora possibile capire come acquisire i pacchetti su N5K, Lets zoom-in su



N9K.

È possibile iniziare dall'host 4 ed eseguire un semplice ping verso l'host 2. Anche se si tratta di un traffico di transito per switch FOGLIA, verificare comunque se si è in grado di gestire questi pacchetti correttamente o no. Confermare su DC-1/Leaf-2.

Per confermare, monitorare l'interfaccia eth-1/23, puntare i pacchetti sulla CPU ed eseguire ethanalyzer/dmirror per lo stesso scopo.

## Configura sessione di monitoraggio

```
leaf2#configure terminal
leaf2(config)#monitor session 1
leaf2(config-monitor)#source interface ethernet 1/23
leaf2(config-monitor)#destination interface sup-eth 0
leaf2(config-monitor)#no shut
leaf2(config-monitor)#exit
```

```
toMultisiteLeaf1#ping 172.20.2.11 repeat 2
Type escape sequence to abort.
Sending 2, 100-byte ICMP Echos to 172.20.2.11, timeout is 2 seconds:
!!
Success rate is 100 percent (2/2), round-trip min/avg/max = 1/1/1 ms
toMultisiteLeaf1#
```

```
leaf2#ethanalyzer local interface inband mirror
```

```
Capturing on inband
2020-05-27 12:20:57.081654 172.20.2.100 -> 172.20.2.11 ICMP Echo (ping) request
2020-05-27 12:20:57.082193 172.20.2.11 -> 172.20.2.100 ICMP Echo (ping) reply
2020-05-27 12:20:57.084902 172.20.2.100 -> 172.20.2.11 ICMP Echo (ping) request
2020-05-27 12:20:57.087406 172.20.2.11 -> 172.20.2.100 ICMP Echo (ping) reply

4 packets captured
leaf2#
```

```
leaf2#ethanalyzer local interface inband display-filter "ip.addr==172.20.2.100 &&
ip.addr==172.20.2.11 && icmp" limit-captured-frames 0
```

```
Capturing on inband
2020-05-27 12:20:57.081654 172.20.2.100 -> 172.20.2.11 ICMP Echo (ping) request
2020-05-27 12:20:57.082193 172.20.2.11 -> 172.20.2.100 ICMP Echo (ping) reply
2020-05-27 12:20:57.084902 172.20.2.100 -> 172.20.2.11 ICMP Echo (ping) request
2020-05-27 12:20:57.087406 172.20.2.11 -> 172.20.2.100 ICMP Echo (ping) reply

4 packets captured
leaf2#
```

Nel caso in cui si desideri inviare alcuni dati dall'origine ed eseguire l'acquisizione sulla foglia di destinazione, questa è la procedura:

1. Eseguire il ping tra l'host 4 e l'host 2.
2. FONTE: 172.20.2.100 // Indirizzo MAC Src: 00:C8:8B:F9:5F:41

3. DESTINAZIONE: 172.20.2.11 // Indirizzo MAC destinazione: E0:D1:73:A4:1D:41
4. Dimensioni pacchetto: 777
5. Non frammentare: Sì
6. Stringa modello dati: manzo

In questo esempio, il numero di pacchetti è sufficiente per poter acquisire i pacchetti sulle foglie di origine e di destinazione.

```
toMultisiteLeaf1#ping 172.20.2.11 repeat 200000 data beef df-bit validate size 777
Type escape sequence to abort.
Sending 200000, 777-byte ICMP Echos to 172.20.2.11, timeout is 2 seconds:
Packet sent with the DF bit set
Packet has data pattern 0xBEEF
Reply data will be validated
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

<.....>
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (7376/7376), round-trip min/avg/max = 1/5/151 ms
toMultisiteLeaf1#
```

## Controlli di base sul primo HopDC-2, Leaf-1



```
MultisteLeaf1#show module
Mod Ports Module-Type Model Status
-----
1 54 48x10GT + 6x40G/100G Ethernet Module N9K-C93108TC-EX active *

Mod Sw Hw Slot
-----
1 7.0(3)I7(5) 1.3 NA

Mod MAC-Address(es) Serial-Num
-----
1 00-be-75-f4-54-46 to 00-be-75-f4-54-95 FDO220225UX

Mod Online Diag Status
-----
1 Pass

* this terminal session
MultisteLeaf1#
```

MultisteLeaf1#show cdp neighbors

Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge  
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 Port ID

MX066-H-03-SW.cisco.com  
mgmt0 141 S I WS-C2960X-48T Gig1/0/31  
Multistespinel(FD022150SJZ)  
Eth1/6 142 R S s N9K-C92160YC- Eth1/47  
**toMultisiteLeaf1 Eth1/16 128 R S I WS-C3750X-24S Gig2/0/1 <<<<<<<<<<<<< Towards Host-4**

Total entries displayed: 3  
MultisteLeaf1#

MultisteLeaf1#show hardware internal tah interface et1/16

#####  
IfIndex: 0x1a001e00  
DstIndex: 6084  
IfType: 26  
Asic: 0  
**Asic: 0 <<<<<<<<<<<<<<<<<**  
AsicPort: 11  
**SrcId: 22 <<<<<<<<<<<<<<<<<**  
**Slice: 0 <<<<<<<<<<<<<<<<<**  
PortOnSlice: 11  
Table entries for interface Ethernet1/16  
<.....snipped for brevity.....>

MultisteLeaf1#show system internal ethpm info interface ethernet 1/16 | grep slice

IF\_STATIC\_INFO: port\_name=Ethernet1/16,if\_index:0x1a001e00,ltl=6084,slot=0,  
nxos\_port=60,dmod=1,dpid=11,unit=0,queue=65535,xbar\_unitbmp=0x0,ns\_pid=255,**slice\_num=0**,port\_on\_s  
lice=11,**src\_id=22**  
MultisteLeaf1#

Verificare a livello di hardware se i pacchetti sono stati effettivamente ricevuti dall'host 4.

MultisteLeaf1#attach module 1

module-1#debug platform internal tah elam asic 0

module-1(TAH-elam)#trigger init asic 0 slice 0 in-select 6 out-select 0 use-src-id 22

param values: start asic 0, start slice 0, lu-a2d 1, in-select 6, out-select 0, src\_id 22

module-1(TAH-elam-insel6)#start

module-1(TAH-elam-insel6)#report

Initting block addresses

SUGARBOWL ELAM REPORT SUMMARY

slot - 1, asic - 0, slice - 0  
=====

Incoming Interface: Eth1/16

Src Idx : 0x3d, Src BD : 1000

Outgoing Interface Info: dmod 1, dpid 17

Dst Idx : 0x15, Dst BD : 1000

Packet Type: IPv4

**Dst MAC address: E0:D1:73:A4:1D:41**



**Src MAC address: 00:C8:8B:F9:5F:41**

.1q Tag0 **VLAN: 1000**, cos = 0x0

**Dst IPv4 address: 172.20.2.11**

**Src IPv4 address: 172.20.2.100**

Ver = 4, DSCP = 0, **Don't Fragment = 1**

Proto = 1, TTL = 255, More Fragments = 0

Hdr len = 20, **Pkt len = 777**, Checksum = 0xcffe

**L4 Protocol : 1**

**ICMP type : 8**

ICMP code : 0

Drop Info:

-----

LUA:

LUB:

LUC:

LUD:

Final Drops:

```
module-1(TAH-elam-insel6)# exit
```

```
module-1(TAH-elam)# exit
```

```
module-1# exit
```

```
MultisteLeaf1#
```

Se si desidera visualizzare come pcap, lasciare che esegua il ping in modo continuo, la sessione di monitoraggio è configurata sulla foglia di origine e di destinazione.

## Sessione di monitoraggio su foglia di origine

```
MultisteLeaf1#show run | section monitor
```

```
monitor session 1
```

```
source interface Ethernet1/16 both
```

```
destination interface sup-eth0
```

```
no shut
```

```
MultisteLeaf1#
```

## Sessione di monitoraggio su foglia di destinazione

```
leaf2(config)#show run | section monitor
```

```
monitor session 1
```

```
source interface Ethernet1/23 both
```

```
destination interface sup-eth0
```

```
no shut
```

```
leaf2(config)#
```

## Acquisisci su foglia di origine

```
MultisteLeaf1#ethanalyzer local interface inband display-filter "ip.addr==172.20.2.100 &&  
ip.addr==172.20.2.11 && icmp" limit-captured-frames 0 detail
```

```
Capturing on inband
```

```
Frame 1 (791 bytes on wire, 791 bytes captured)
```

```
Arrival Time: May 31, 2020 15:44:46.767411000
```

```
[Time delta from previous captured frame: 0.000000000 seconds]
```











**Frame 4 (795 bytes on wire, 795 bytes captured)**

Arrival Time: May 31, 2020 15:44:46.888728000  
[Time delta from previous captured frame: 0.047867000 seconds]  
[Time delta from previous displayed frame: 0.047867000 seconds]  
[Time since reference or first frame: 0.121317000 seconds]  
Frame Number: 4  
Frame Length: 795 bytes  
Capture Length: 795 bytes  
[Frame is marked: False]  
[Protocols in frame: eth:vlan:ip:icmp:data]  
Ethernet II, Src: 00:c8:8b:f9:5f:41 (00:c8:8b:f9:5f:41), Dst: e0:d1:73:a4:1d:41 (e0:d1:73:a4:1d:41)  
Destination: e0:d1:73:a4:1d:41 (e0:d1:73:a4:1d:41)  
Address: e0:d1:73:a4:1d:41 (e0:d1:73:a4:1d:41)  
.... 0000 .... = IG bit: Individual address (unicast)  
.... 0000 .... = LG bit: Globally unique address (factory default)  
Source: 00:c8:8b:f9:5f:41 (00:c8:8b:f9:5f:41)  
Address: 00:c8:8b:f9:5f:41 (00:c8:8b:f9:5f:41)  
.... 0000 .... = IG bit: Individual address (unicast)  
.... 0000 .... = LG bit: Globally unique address (factory default)  
Type: 802.1Q Virtual LAN (0x8100)  
802.1Q Virtual LAN, PRI: 0, CFI: 0, ID: 1000  
000. .... = Priority: 0  
...0 .... = CFI: 0  
.... 0011 1110 1000 = ID: 1000  
Type: IP (0x0800)  
Internet Protocol, Src: 172.20.2.100 (172.20.2.100), Dst: 172.20.2.11 (172.20.2.11)  
Version: 4  
Header length: 20 bytes  
Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)  
0000 00.. = Differentiated Services Codepoint: Default (0x00)  
.... 00.. = ECN-Capable Transport (ECT): 0  
.... 00.. = ECN-CE: 0  
Total Length: 777  
Identification: 0xaf65 (44901)  
Flags: 0x02 (Don't Fragment)  
0.. = Reserved bit: Not Set  
.1. = Don't fragment: Set  
..0 = More fragments: Not Set  
Fragment offset: 0  
Time to live: 255  
Protocol: ICMP (0x01)  
Header checksum: 0xbd1b [correct]  
[Good: True]  
[Bad : False]  
Source: 172.20.2.100 (172.20.2.100)  
Destination: 172.20.2.11 (172.20.2.11)  
Internet Control Message Protocol  
Type: 8 (Echo (ping) request)  
Code: 0 ()  
Checksum: 0x704a [correct]  
Identifier: 0x001c  
Sequence number: 7430 (0x1d06)  
Data (749 bytes)

0000 00 00 00 00 14 67 5f aa be ef be ef be ef be ef .....g\_.....  
0010 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0020 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0030 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0040 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0050 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0060 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0070 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0080 be ef be ef be ef be ef be ef be ef be ef be ef .....

```

0090 be ef be ef be ef be ef be ef be ef be ef be ef .....
00a0 be ef be ef be ef be ef be ef be ef be ef be ef .....
00b0 be ef be ef be ef be ef be ef be ef be ef be ef .....
00c0 be ef be ef be ef be ef be ef be ef be ef be ef .....
00d0 be ef be ef be ef be ef be ef be ef be ef be ef .....
00e0 be ef be ef be ef be ef be ef be ef be ef be ef .....
00f0 be ef be ef be ef be ef be ef be ef be ef be ef .....
0100 be ef be ef be ef be ef be ef be ef be ef be ef .....
0110 be ef be ef be ef be ef be ef be ef be ef be ef .....
0120 be ef be ef be ef be ef be ef be ef be ef be ef .....
0130 be ef be ef be ef be ef be ef be ef be ef be ef .....
0140 be ef be ef be ef be ef be ef be ef be ef be ef .....
0150 be ef be ef be ef be ef be ef be ef be ef be ef .....
0160 be ef be ef be ef be ef be ef be ef be ef be ef .....
0170 be ef be ef be ef be ef be ef be ef be ef be ef .....
0180 be ef be ef be ef be ef be ef be ef be ef be ef .....
0190 be ef be ef be ef be ef be ef be ef be ef be ef .....
01a0 be ef be ef be ef be ef be ef be ef be ef be ef .....
01b0 be ef be ef be ef be ef be ef be ef be ef be ef .....
01c0 be ef be ef be ef be ef be ef be ef be ef be ef .....
01d0 be ef be ef be ef be ef be ef be ef be ef be ef .....

```

MultisteLeaf1#

## Controlli di base sull'ultimo hop DC-1, Leaf-2



leaf2#**show module**

Mod Ports Module-Type Model Status

```
-----
1 54 48x10G + 4x40G + 2x100G Ethernet Modu N9K-C92160YC-X active *
```

Mod Sw Hw Slot

```
-----
1 9.2(3) 1.3 NA
```

Mod MAC-Address(es) Serial-Num

```
-----
1 70-79-b3-3e-81-1c to 70-79-b3-3e-81-69 FD022111H2V
```

Mod Online Diag Status

```
-----
1 Pass
```

\* this terminal session

leaf2#**show cdp neighbors**

Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge  
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 Port ID

```

Tleaf2 Eth1/23 142 S I WS-C3750X-24S Gig1/0/1 <<<<<<<<<<<<<<<<<< Towards Host-2
switch(SAL2024RRYF)
Eth1/47 175 R S I s N9K-C9372PX-E Eth1/4
spine2(SAL1949UELD)

```









0290 be ef be ef be ef be ef be ef be ef be ef be ef be ef .....  
02a0 be ef be ef be ef be ef be ef be ef be ef be ef be ef .....  
02b0 be ef be ef be ef be ef be ef be ef be ef be ef be ef .....  
02c0 be ef be ef be ef be ef be ef be ef be ef be ef be ef .....  
02d0 be ef be ef be ef be ef be ef be ef be ef be ef be ef .....  
02e0 be ef be ef be ef be ef be ef be ef be ef 00 .....

Data: 00000000147F4ADBEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEF...  
[Length: 749]

Frame 2 (791 bytes on wire, 791 bytes captured)

Arrival Time: May 31, 2020 15:45:55.694904000

[Time delta from previous captured frame: 0.020346000 seconds]

[Time delta from previous displayed frame: 0.020346000 seconds]

[Time since reference or first frame: 0.020346000 seconds]

Frame Number: 2

Frame Length: 791 bytes

Capture Length: 791 bytes

[Frame is marked: False]

[Protocols in frame: eth:ip:icmp:data]

Ethernet II, Src: 00:c8:8b:f9:5f:41 (00:c8:8b:f9:5f:41), Dst: e0:d1:73:a4:1d:41 (e0:d1:73:a4:1d:41)

Destination: e0:d1:73:a4:1d:41 (e0:d1:73:a4:1d:41)

Address: e0:d1:73:a4:1d:41 (e0:d1:73:a4:1d:41)

.... 0 = IG bit: Individual address (unicast)

... 0 = LG bit: Globally unique address (factory default)

Source: 00:c8:8b:f9:5f:41 (00:c8:8b:f9:5f:41)

Address: 00:c8:8b:f9:5f:41 (00:c8:8b:f9:5f:41)

.... 0 = IG bit: Individual address (unicast)

... 0 = LG bit: Globally unique address (factory default)

Type: IP (0x0800)

Internet Protocol, Src: 172.20.2.100 (172.20.2.100), Dst: 172.20.2.11 (172.20.2.11)

Version: 4

Header length: 20 bytes

Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)

0000 00.. = Differentiated Services Codepoint: Default (0x00)

... 0 = ECN-Capable Transport (ECT): 0

... 0 = ECN-CE: 0

Total Length: 777

Identification: 0x8237 (33335)

Flags: 0x02 (Don't Fragment)

0.. = Reserved bit: Not Set

.1. = Don't fragment: Set

..0 = More fragments: Not Set

Fragment offset: 0

Time to live: 255

Protocol: ICMP (0x01)

Header checksum: 0xea49 [correct]

[Good: True]

[Bad : False]

Source: 172.20.2.100 (172.20.2.100)

Destination: 172.20.2.11 (172.20.2.11)

Internet Control Message Protocol

Type: 8 (Echo (ping) request)

Code: 0 ()

Checksum: 0x980f [correct]

Identifier: 0x001f

Sequence number: 2515 (0x09d3)

Data (749 bytes)

0000 00 00 00 00 14 7f 4a fd be ef be ef be ef be ef .....J.....  
0010 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0020 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0030 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0040 be ef be ef be ef be ef be ef be ef be ef be ef .....



## Informazioni su questa traduzione

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