

# 멀티 사이트 환경에서 EVPN/VxLAN 문제 해결

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## 소개

이 문서에서는 멀티사이트 환경에서 이더넷 VPN/EVPN/VxLAN(Virtual Extensible LAN)의 문제를 해결하는 방법을 설명합니다.

## 사전 요구 사항

### 요구 사항

다음 주제에 대한 지식을 보유하고 있으면 유용합니다.

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

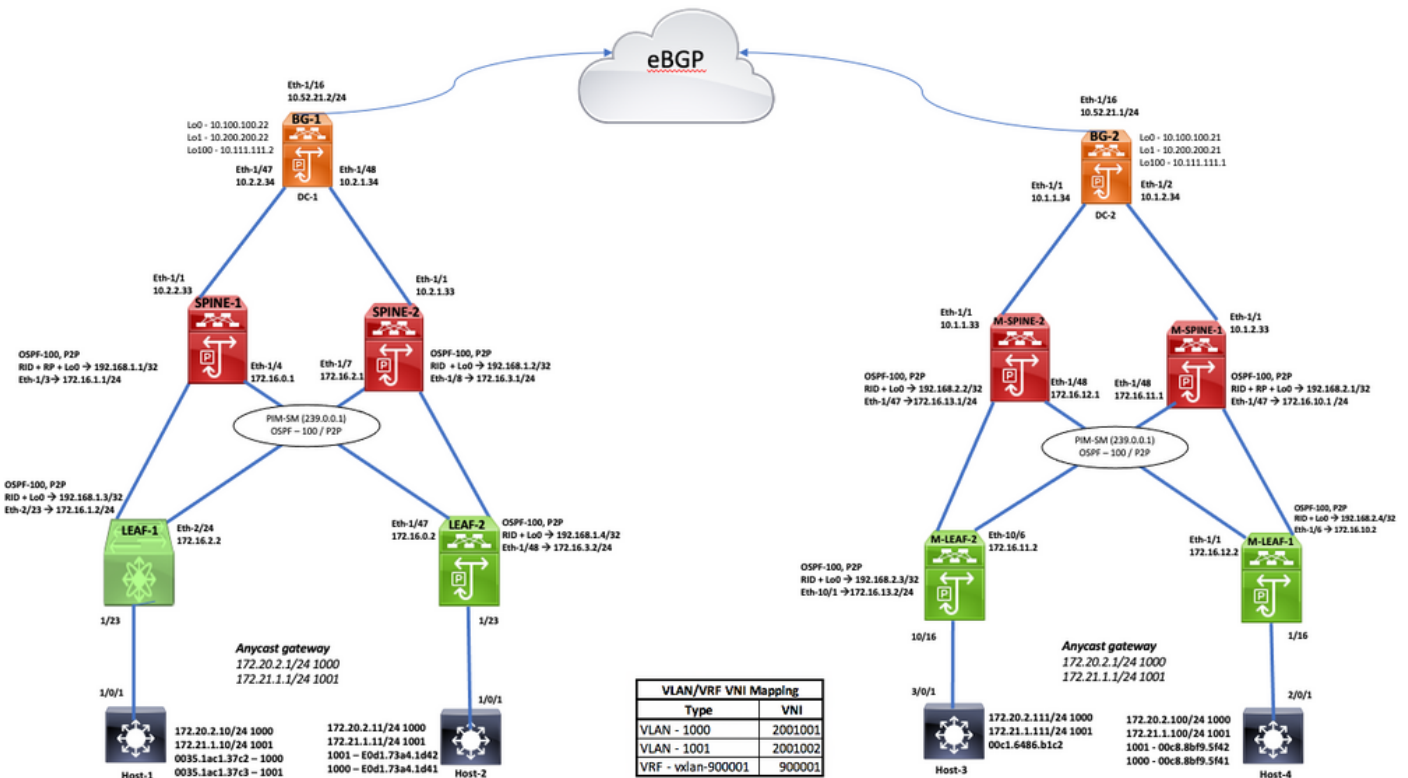
### 사용되는 구성 요소

이 문서의 정보는 다음 소프트웨어 및 하드웨어 버전을 기반으로 합니다.

리프1#	N5K-C5672UP-16G-SUP	시스템: 버전 7.3(0)N1(1)
리프2#	N9K-C92160YC-X	NXOS: 버전 9.2(3)
spine1#	N9K-C9396PX	NXOS: 버전 9.2(3)
spine2#	N9K-C9396PX	NXOS: 버전 9.2(3)
멀티사이트BG1#	N9K-C93108TC-EX	NXOS: 버전 9.2(3)
멀티사이트BG2#	N9K-C93108TC-FX	NXOS: 버전 9.3(1)
멀티사이트스파인2#	N9K-C9372TX-E	NXOS: 버전 9.2(3)
멀티스테스파인1#	N9K-C92160YC-X	NXOS: 버전 9.2(3)
MultisteLeaf1#	N9K-C93108TC-EX	NXOS: 버전 7.0(3)I7(5)

이 문서의 정보는 특정 랩 환경의 디바이스를 토대로 작성되었습니다. 이 문서에 사용된 모든 디바이스는 초기화된(기본) 컨피그레이션으로 시작되었습니다. 현재 네트워크가 작동 중인 경우 모든 명령의 잠재적인 영향을 미리 숙지하시기 바랍니다.

## 토폴로지



이 문서에서는 트래픽이 어디에서 발생하는지(DC-1, Host1/2 - 172.20.2.10/11) 그리고 목적지 DC-2, Host4(172.20.2.100)까지 패킷을 걸어 봅니다.

## 컨트롤 플레인 확인



트래픽 흐름:  
스 노드에서 올바른 IP, VLAN을 확인합니다.

1단계. 소

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#

이제 소스 노드에서 SVI-GW의 Vlan-1000으로 연결할 수 있습니다.

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#

2단계. 첫 번째 흡인 leaf1로 이동하여 Layer-2 및 Layer-3 레벨에서 확인합니다.

이제 leaf1이 소스 노드의 mac, arp를 학습하는지 여부를 확인합니다.

예, 소스 노드의 mac 주소(0035.1ac1.37c2), IP 172.20.2.10은 eth1/23에서 Vlan1000을 통해 학습됩니다.

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#

```

## Source-Leaf에서 ARP 테이블 확인

```
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#
```

이는 leaf10이 소스 노드의 IP/mac 항목을 만들기 위해 메시지를 가져오는 방법을 보여줍니다.

```
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)
```





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#

## DC-1 Leaf1-Spine2 경로 확인

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-redirect, 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#

여러 개의 스파인이 있는 경우 서로 다른 스파인의 명령을 확인하여 확인합니다(경로 업데이트 유지).

DC-1에서 SPINE-1 및 SPINE-2는 Leaf1, Leaf2 및 BGW-1과 EVPN 네이버를 가집니다

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#

지금까지 SPINE 레이어까지 연결되었습니다. 이제 이것이 보더 게이트웨이(DC-1, BGW-1)로 전달 되는지 여부를 확인하십시오.

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#

<<<<<<<<<

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#

경로가 다른 사이트에 전파되는 DC-1의 BORDER 레이어에서 확인합니다.

그러면 BGW-1에서 누구와 어떤 경로로 얼마나 많은 경로가 교환되는지 볼 수 있습니다

## 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

MultisiteBG1#

DC-2/BGW-2에서 경로가 수신되면 연결된 SPINE-1(192.168.2.1)에 대한 경로 광고가 표시됩니다

### 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#

경로는 목적지가 연결된 DC-2, Leaf-1로 더 광고됩니다.

## DC-2 스파인-리프 경로 알림

Multistespinel#**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	

Multistespinel#

Multistespinel#**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

10.111.111.1	2000	100	0	200	i
--------------	------	-----	---	-----	---

Multistespinel#

이제 레이어 2 토폴로지가 DC-1, Leaf-1에서 DC-2, Leaf-1로 확장되었습니다.

## DC-2 Leaf-1 확인

MultisteLeaf1#**show bgp l2vpn evpn summary**





MultisteLeaf1#

DC-2, Leaf-1에서 Vlan1000을 통해 Host-4 Mac을 학습했습니다.

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	
172.20.2.100	00:04:09	00c8.8bf9.5f41	Vlan1000	

MultisteLeaf1#

## 데이터 플레인 문제 해결

여러 디바이스에서 데이터 계획 검증을 테스트하여 다양한 패킷 캡처 방법 및 변형을 이해합니다.



이 예에서 목적지 leaf인 N5K에서 확대

SOURCE: 172.20.2.100 (Host-4)  
DESTINATION: 172.20.2.10 (Host-1)

## Source-Host4에 대한 기본 검사



3 00de.fb01.9fb8 to 00de.fb01.9fcf FOC20162AGC

leaf1#

이제 asic/인스턴스 매핑을 확인하는 방법을 알아보십시오.

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  
lgb1/23 |2 |0 |1 |10 p |22 |b3 |en |up |1a016000|pass| 0.00  
leaf1#

여기에서 Leaf-1에서 Host-1로 이그레스(egress)되는 패킷을 볼 수 있습니다.

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 |
```



```
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#
```

소스에서 일부 데이터를 전송하고 대상 리프에 캡처하려는 경우 다음 절차를 수행합니다.

1. Host-4에서 Host-2로의 ping을 시작합니다.
2. 소스: 172.20.2.100 // 소스 MAC 주소: 00:C8:8B:F9:5F:41
3. 대상: 172.20.2.11 // Dst MAC 주소: E0:D1:73:A4:1D:41
4. 패킷 크기: 777
5. 조각화 금지: 예
6. 데이터 패턴 문자열: beef

이 예에서는 소스 및 대상 리프의 패킷을 캡처할 수 있도록 충분한 패킷 수가 있습니다.

```
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#
```

# 첫 번째 HopDC-2, Leaf-1에 대한 기본 검사



```
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(FDO22150SJZ)
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
```















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 .....  
01e0 be ef be ef be ef be ef be ef be ef be ef be ef .....  
01f0 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0200 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0210 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0220 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0230 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0240 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0250 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0260 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0270 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0280 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0290 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 .....  
02b0 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 .....  
02d0 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: 0000000014675F78BEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEF...

[Length: 749]

**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)

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

## Last Hop DC-1, Leaf-2에 대한 기본 검사



```
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 FDO22111H2V

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)
Eth1/48 121 R S s N9K-C9396PX Eth1/8
```

```
Total entries displayed: 3
```

```
leaf2#
```

```
leaf2#show hardware internal tah interface ethernet1/23
```

```
#####
IfIndex: 0x1a002c00
DstIndex: 6056
IfType: 26
Asic: 0 <<<<<<<<<<<
Asic: 0
AsicPort: 2
SrcId: 4 <<<<<<<<<<<
Slice: 0 <<<<<<<<<<<
PortOnSlice: 2
<.....snipped for brevity.....>
leaf2#
```

```
leaf2#show system internal ethpm info interface ethernet 1/23 | grep slice
```

```
IF_STATIC_INFO: port_name=Ethernet1/23,if_index:0x1a002c00,ltl=6056,slot=0,
nxos_port=88,dmod=1,dpid=2,unit=0,queue=65535,xbar_unitbmp=0x0,ns_pid=255,slice_num=0,port_on_sl
ice=2,src_id=4
leaf2#
```







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 .....  
01e0 be ef be ef be ef be ef be ef be ef be ef be ef .....  
01f0 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0200 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0210 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0220 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0230 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0240 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0250 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0260 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0270 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0280 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0290 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 .....  
02b0 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 .....  
02d0 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: 00000000147F4ADBEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEF...

[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 .....  
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 .....  
01e0 be ef be ef be ef be ef be ef be ef be ef be ef .....

01f0 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0200 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0210 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0220 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0230 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0240 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0250 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0260 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0270 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0280 be ef be ef be ef be ef be ef be ef be ef be ef .....  
0290 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 .....  
02b0 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 .....  
02d0 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: 00000000147F4AFDBEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEFBEEF...

[Length: 749]

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