

في اء حال ص او EVPN/VxLAN ءاطخأ فاشك تسأ ءءءءم لاء ءق او م لاء ءئبب

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[2-ءءف ص، DC-1 ءو طءءءء ءلء ءئبب ساسأ ءا قءءءم](#)

ءمءم لاء

ءءس و م لاء LAN ءكءبش Ethernet VPN/ ءكءبش ءاطخأ فاشك تسأ ءف ءف ءءءءم لاء اءءء ءضو ءءءءم لاء ءق او م لاء ءئبب في ءء حال ص او (EVPN/VxLAN) ءف رءءا ط لاء

ءئبب ساسأ لاء ءاب ل طءم لاء

ءاب ل طءم لاء

ءئلءاء لاء ءف ءص او م لاء ءف رءم ءءءل نو كء ناء Cisco ءف صوء

- Multiprotocol Label Switching (MPLS) Layer 3 VPN
- (MP-BGP) ءوءءلء-ءا لو كوء و رءب لاء ءءءم ءرءب ءلء لو كوء و رءب
- EVPN

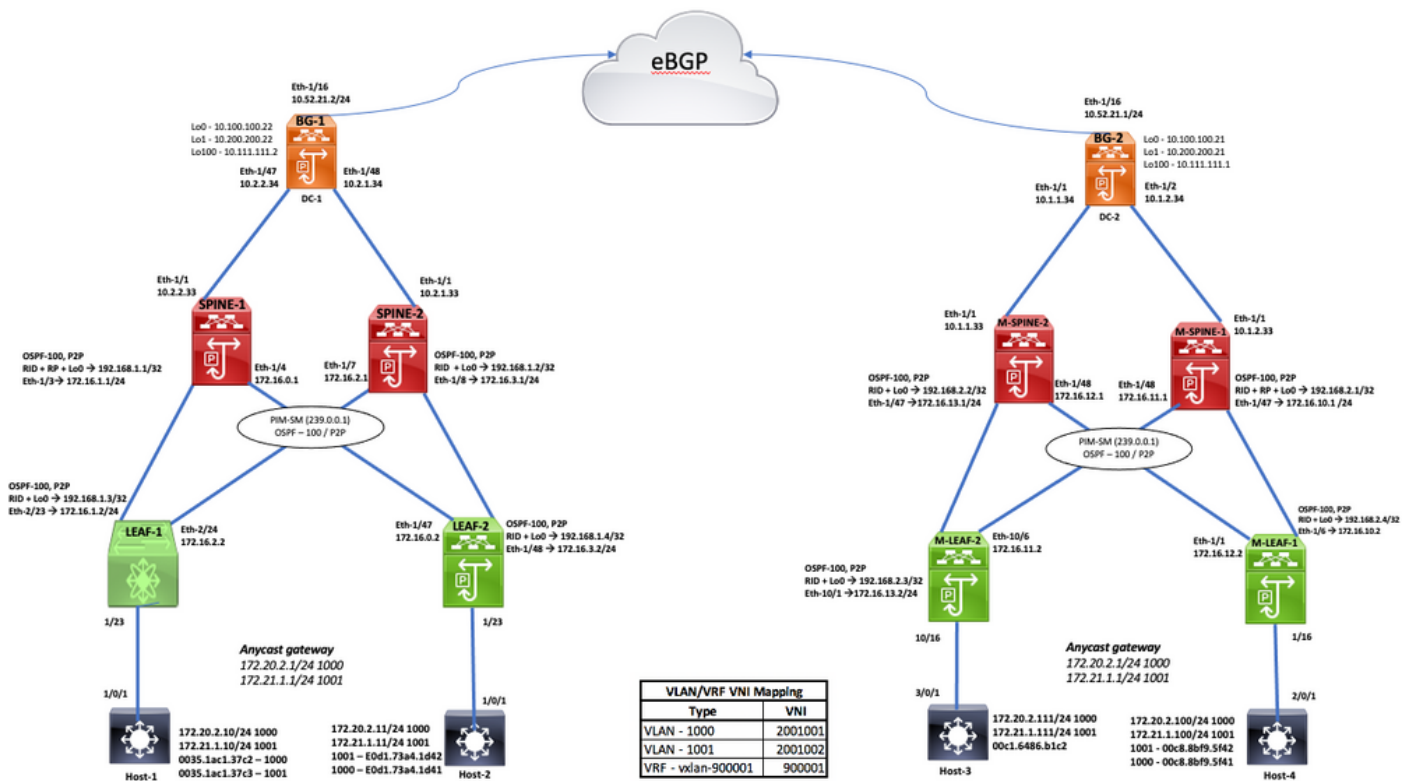
ةمدختسمل اتانوكملا

ةيلالتل ةيدامل اتانوكملاو ءم اربلا تارادصل لىل دن تسمل اذ ءف ةدراول تامول عمل دن تست

page1#	N5K-C5672UP-16G-SUP	ماظنلا : 7.3(0)N1(1)
page2#	N9K-C92160YC-X	NXOS: رادصلال 9.2(3)
spine1#	N9K-C9396PX	NXOS: رادصلال 9.2(3)
spine2#	N9K-C9396PX	NXOS: رادصلال 9.2(3)
multisiteBG1#	N9K-C93108TC-EX	NXOS: رادصلال 9.2(3)
multisiteBG2#	N9K-C93108TC-FX	NXOS: رادصلال 9.3(1)
ءق او ملاء دءءم 2#	N9K-C9372TX-E	NXOS: رادصلال 9.2(3)
multistespine1#	N9K-C92160YC-X	NXOS: رادصلال 9.2(3)
MultisteLeaf1#	N9K-C93108TC-EX	NXOS: رادصلال 7.0(3)I7(5)

ةصاخ ةيلمعم ةئيب ءف ةءوءوملاء ءزهجال نم دن تسمل اذ ءف ةدراول تامول عمل ءاشنل مء تناك اذل . (ءضارءف) ءوسمم نءوكءب دن تسمل اذ ءف ةمدختسمل ءزهجال ءءمء ءءب رمأ ل لمءءملاء رءءءلل كمءف نم ءكءءف ، لءءغشءل ءءق ءءءبش

اءءول وءبوء



ءم ءشملاء مء (DC-1, Host1/2 - 172.20.2.10/11) رورملاء ءءء ءاشنل ناك نم دن تسمل اذ ءضوءى ءم ءشملاء (DC-2, Host4 (172.20.2.100)).

مءءءل ءوءسم نم ءءءءل

ةءءء ءءءء



رورملا:
ردصملا ةدقع ىلع VLAN، نم يألأ IP نم ققحت

1. ةوطخلا

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#

VLAN-1000 نم اهب صاخلا SVI-GW ىلى ردصملا ةدقعلا نم لوصولا ةيلباق كيدل نألأ

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#

يوتسم ىلع ءايشألأ نم ققحتو 1 ءحفص يه يتلا ىلوالا ةوطخلا ىلى لقتنا 2. ةوطخلا
3. ةقبطلاو 2 ةقبطلا

ال وأ ةدقع ردصم نم arp، كام فرعت 1 ةقرولا اذا ام دهاش نألأ

يف ردصملا ةدقعل IP 172.20.2.10 و MAC (0035.1ac1.37c2) ناو نع ىلع فرعتلا متي، م عن
ETH1/23 نم لخال 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#

```

ردصم الة قروي ف ARP لودج نم ققحت الة

```
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
172.20.2.10	00:00:58	0035.1ac1.37c2	Vlan1000
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#
```

ةدق ردصم نم لخدم ip/mac لعلج نأ ةلاس رللا لصح 1 ةقروي فيك يدب اذ.

```

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#

مهملة بقارملا طاقن يدح| هذه نوكت ، 1 ةقرولا يف MAC/IP لادخ| ةيفيك نم ققحتلا درجمب
L2VPN/EVPN تاراسمك اهنع نالعالا متي و BGP عم MAC/MAC-IP تامولعم طبر متي شح

```
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:
```

```
RT:200:2001002
```


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#

SPINE2 إلى DC-1 Leaf1 من راسملا نم ققحتلا

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					
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					

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#

ةيساسأ تاقرط ىلع ةفلتخملا رماوأل نم ققحت، ةيساسأل تازيملا نم ديدعلا دوجول ارظن
راسملا تاثيرحت ةمالس ىلع ظافحلا) دكأتلل ةفلتخم

في DC-1، SPINE-1 و SPINE-2 مهيدل EVPN م رواجملا Leaf1، Leaf2، و BGW-1

spinel#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

spinel#

```
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#
```

إلى اهريرمت مت دق ناك اذا ام رظنا نآل او، يرق فال دومعلا ةقبط ىتح تلصو دقل، نآل ىتح
ال م أ (DC-1، BGW-1) ةي دودحلا ةب اوبلا

```
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#

فلتختم عقوم إلى تاراسم الراشن متي شيح نم، DC-1 لة دودحلا قبطال لى ع ققحت.

BGW-1 في اهلدابت متي يتل قرطال ددو تاراسم لى ع ونو نم عم ىرت نأ كنكمي ذئدنوع

زارطال 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#

يسئرلا زمرلا لى لى راسم لى نال ع لدهاشم كن كمى، DC-2/BGW-2 لى لى ع تاراسم لى مالت س لى درجم ب
ل (192.168.2.1) ه ب لصت م لى

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#

اهب ةلصتم ةهجولا نوكت ثيح Leaf-1، DC-2 مكحتلا ةدحو لىإ تاهجوملا نع نالعالإ متي امك.

ةقرولا راسم نالعالإ لىإ يف لخال DC-2 دومع

```
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#


```

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، terminal-1 في ضرمال مرجع 4 MAC through 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	
172.20.2.100	00:04:09	00c8.8bf9.5f41	Vlan1000	

MultisteLeaf1#

اهال صاوانا ايل يوتسم ااطخا فاشكتسا

ةفلتخمل مزحلا طاقتلا قرط مهفل ةددعتم ةزهجأ لىل ع تانايل لاطخ نم ققحتلا رابتخا متي اهعونتو.



N9K.

نم مغرلا ىلعو. 2-فضملا ىلا طيسب لاصتا رابتخا اءارج او 4-فضملا نم ادبلا كنكمي هذه ءلعم ىلع ارداق تنك اذا امم ققحتلا لازي ال، ءي فرطال تالو حملل روبع رورم ءكرح اهان DC-1/Leaf-2. يف دكات ال و اءيحص لكشب مزحلا

نم ethalyzer/dmirror لءش و CPU ىلا مزحلا كلت تمكولو، th-1/23 نراقلا تبقرار، دكاتلا لءا نم سفنل.

ءبقارملا لم ءسلج نيوكت

```
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#ethalyzer 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#ethalyzer 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#
```

وه اذه، ءقرو ءياءلا ىلع طاقتل او رءصملا نم تانايبلا ضعب لاسرا ديرت تنك اذا ام ءلح يف اءءال:

- 2-فضملا ىلا 4-فضملا نم لاصتا رابتخا ادبا.
- رءصملا: 172.20.2.100 // SRC ناونع MAC: 00:C8:8b:F9:5F:41

3. هجول: 172.20.2.11 // DST ناونع MAC: E0:D1:73:A4:1D:41
 4. هجول: 777
 5. معن: هئجتل مدع
 6. رقبول: تانايبول طامنأ هلسلس
- ههول و ردصملا قاروا ىلع مزحل طاقتل كنكمي ىتح لاثملا اذه يف مزحل نم فاك ددع كيدل.

```
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#
```

HopDC-2، Leaf-1 ىلع هيساسال ققحتل تايلمع



```
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#

Host-4. نم مزحلا لعفلاب تاملتسا يتلا ةزهألا يوتسم نم ققحت

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#
```

ردصم لآ ىلع تللكش ةسلج بآردم لآ، رارمتساب ربتخي هعد، PCAP ك ىري نأ تنأ ڊري نإ
ةقرو ةهولواو.

ةقرو رصم لآ ةسلج بآردم

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

```
monitor session 1
```

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

```
destination interface sup-eth0
```

```
no shut
```

```
MultisteLeaf1#
```

ةقرو ةياغ لآ ةسلج بآردم

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

```
monitor session 1
```

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

```
destination interface sup-eth0
```

```
no shut
```

```
leaf2(config)#
```

ردصم لآ ةقرو لآ طاقنلآ

```
MultisteLeaf1#ethalyzer 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]
```

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


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 efg_.....
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#

```

2-ةحفص ، DC-1 ةوطخ رخآ ىلع ةيساسا تاققحت



```

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

```


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 efJ.....
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

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ادخت ساب دن تسم ل ا اذ ه Cisco ت مچرت
م ل ا ل ا ا ن ا ع مچ ي ف ن ي م د خ ت س م ل ل م ع د ي و ت ح م م ي د ق ت ل ة ي ر ش ب ل و
ا م ك ة ق ي ق د ن و ك ت ن ل ة ل ا ة مچرت ل ض ف ا ن ا ة ظ ح ا ل م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب
Cisco ي ل خ ت . ف ر ت ح م مچرت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ا ل ا ة مچرت ل ا ع م ل ا ح ل ا و ه
ي ل ا م ا د ع و ج ر ل ا ب ي ص و ت و ت ا مچرت ل ا ه ذ ه ة ق د ن ع ا ه ت ي ل و ئ س م Cisco
Systems (ر ف و ت م ط ب ا ر ل ا) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا دن ت س م ل ا