

Dépannage d'EVPN/VxLAN dans une configuration multisite

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Introduction

Ce document décrit l'approche de dépannage d'un VPN Ethernet/Virtual Extensible LAN (EVPN/VxLAN) dans une configuration multisite.

Conditions préalables

Exigences

Cisco vous recommande de prendre connaissance des rubriques suivantes :

- VPN de couche 3 MPLS (Multiprotocol Label Switching)
- Protocole MP-BGP (Multiprotocol-Border Gateway Protocol)
- EVPN

Composants utilisés

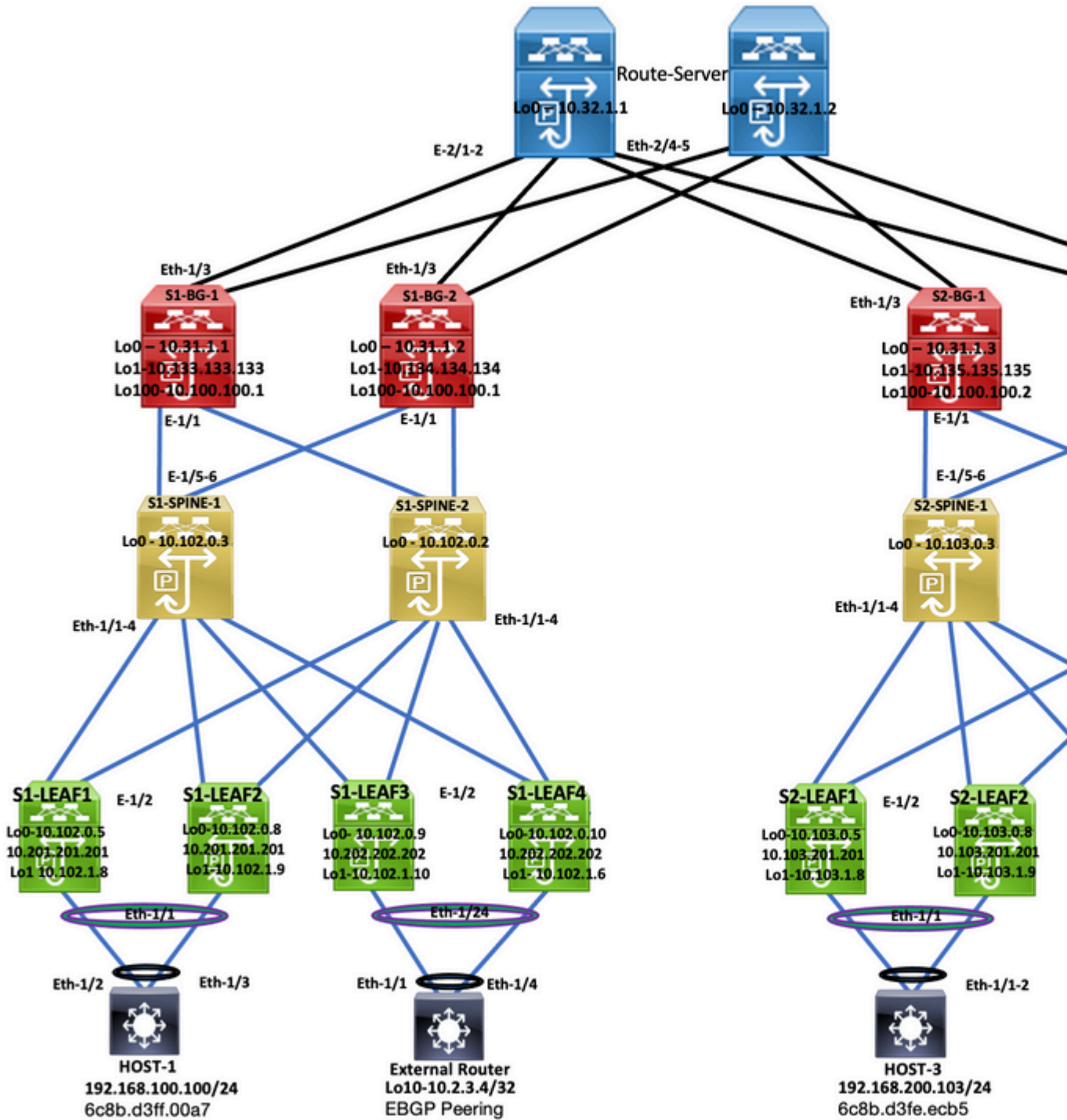
Les informations contenues dans ce document sont basées sur les versions de matériel et de logiciel suivantes :

Toutes les feuilles de site	N9K-C9336C-FX2	NXOS : 10.2(3)
Comm1_Spine1	N9K-C9364C	NXOS : 10.2(4)
Comm1_Spine2	N9K-C9364C	NXOS : 9.3(5)
S1_Border Gateway1, S2_Border Gateway2, S2_Border Gateway1	N9K-C932C	NXOS : 9.3(9)
Passerelle en limite S1_2	N9K-C932C	NXOS : 10.2(4)
Serveur de routage	N9K-C9396PX	NXOS : 9.2(2)
Hôte-1	N3K-C3264C-E	NXOS : 9.3(5)
Hôte 2 et Hôte 3	N3K-C3264C-E	NXOS : 9.2(2)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. Si votre réseau est en ligne,

assurez-vous de bien comprendre l'incidence possible des commandes.

Topologie



Topologie

Ce document décrit l'origine du trafic depuis l'hôte 3 DC-2 (192.168.200.104/24), puis accompagne les paquets jusqu'à l'hôte 2 DC-1 de destination (10.2.3.4).

Vérification du plan de contrôle

Afin de vérifier le plan de contrôle, entrez ces commandes :

```
<#root>
HOST_3#
show ip int brief
□
```

```

                10.100.100.2                100                0 300 100 65111 i

*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224
                10.100.100.2                100                0 300 100 i
*>i[5]:[0]:[0]:[32]:[10.100.100.2]/224
                10.100.100.2

```

S2-Leaf2#

```
show bgp l2vpn evpn vrf vrf_2
```

BGP routing table information for VRF default, address family L2VPN EVPN
 BGP table version is 4389, Local Router ID is 10.103.0.8
 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: 10.103.0.8:5 (L3VNI 4000502)					
*>i[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.100.100.2		100	0 300 100	i
*>i[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.100.100.2		100	0 300 100 65111	i
*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224	10.100.100.2		100	0 300 100	i
*>i[5]:[0]:[0]:[32]:[10.100.100.2]/224	10.100.100.2		100	0 300 100	i

S2-Leaf2#

S2-leaf3#

```
show bgp l2vpn evpn vrf vrf_2
```

BGP routing table information for VRF default, address family L2VPN EVPN
 BGP table version is 4196, Local Router ID is 10.103.0.9
 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: 10.103.0.9:5 (L3VNI 4000502)					
*>i[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.100.100.2		100	0 300 100	i
*>i[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.100.100.2		100	0 300 100 65111	i
*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224	10.100.100.2		100	0 300 100	i
*>i[5]:[0]:[0]:[32]:[10.100.100.2]/224	10.100.100.2		100	0 300 100	i

S2-Leaf4#

S2-Leaf4#

```
show bgp l2vpn evpn vrf vrf_2
```

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 4381, Local Router ID is 10.102.0.10
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: 10.102.0.10:5 (L3VNI 4000502)

*>i[5]:[0]:[0]:[24]:[192.168.100.0]/224
10.100.100.2 100 0 300 100 i

*>i[5]:[0]:[0]:[32]:[10.2.3.4]/224
10.100.100.2 100 0 300 100 65111 i

*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224
10.100.100.2 100 0 300 100 i

*>i[5]:[0]:[0]:[32]:[10.100.100.2]/224
10.100.100.2 100 0 300 100 i

S2-Leaf4#
S2-Leaf4#

<#root>

S2-Spine1#

show bgp l2vpn evpn

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 1235, Local Router ID is 10.103.0.3
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, 2 - best2

Network Next Hop Metric LocPrf Weight Path
Route Distinguisher: 200:4000502

* i[5]:[0]:[0]:[24]:[192.168.100.0]/224
10.100.100.2 100 0 300 100

*>i 10.100.100.2 100 0 300 100 i

* i[5]:[0]:[0]:[32]:[10.2.3.4]/224
10.100.100.2 100 0 300 100 65111 i

*>i 10.100.100.2 100 0 300 100 65111 i

* i[5]:[0]:[0]:[32]:[10.100.100.1]/224
10.100.100.2 100 0 300 100 i

*>i 10.100.100.2 100 0 300 100 i

* i[5]:[0]:[0]:[32]:[10.100.100.2]/224
10.100.100.2 100 0 300 100 i

*>i 10.100.100.2 100 0 300 100 i

<#root>

S2-BG1#

show ip int brie

```

IP Interface Status for VRF "default"(1)
Interface      IP Address      Interface Status
Lo0            10.31.1.3      protocol-up/link-up/admin-up
Lo1            10.135.135.135 protocol-up/link-up/admin-up
Lo100         10.100.100.2   protocol-up/link-up/admin-up

Eth1/1        192.168.17.12  protocol-up/link-up/admin-up
Eth1/3        10.150.152.1   protocol-up/link-up/admin-up
S2-BG1#

```

S2-BG1#

```
show ip route 10.2.3.4 vrf vrf_2
```

```

IP Route Table for VRF "vrf_2"
'*' denotes best ucast next-hop
 '**' denotes best mcast next-hop
 '[x/y]' denotes [preference/metric]
 '%<string>' in via output denotes VRF <string>

```

```
10.2.3.4/32, ubest/mbest: 1/0
```

```
*via 10.100.100.1%default, [20/0], 04:09:46, bgp-200, external, tag 300, segid: 4000502 tunnelid: 0xa64
```

S2-BG1#

S2-BG1#

```
show bgp l2vpn evpn
```

```

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 6206, Local Router ID is 10.31.1.3
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, 2 - best2

```

Network	Next Hop	Metric	LocPrf	Weight	Path
Route Distinguisher: 100:4000502					
*>e[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.100.100.1			0 300 100	i
*>e[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.100.100.1			0 300 100 65111	i
*>e[5]:[0]:[0]:[32]:[10.100.100.1]/224	10.100.100.1			0 300 100	i
*>e[5]:[0]:[0]:[32]:[10.100.100.2]/224	10.100.100.1			0 300 100	i

<#root>

S2-BG2#

```
show ip int brief
```

```
IP Interface Status for VRF "default"(1)
```

Interface	IP Address	Interface Status
Lo0	10.31.1.4	protocol-up/link-up/admin-up
Lo1	10.136.136.136	protocol-up/link-up/admin-up
Lo100	10.100.100.2	protocol-up/link-up/admin-up
Eth1/1	192.168.18.12	protocol-up/link-up/admin-up
Eth1/3	10.150.153.1	protocol-up/link-up/admin-up
S2-BG2#		
S2-BG2#		
S2-BG2#		

```
show ip route 10.2.3.4 vrf vrf_2
```

```
IP Route Table for VRF "vrf_2"
'*' denotes best ucast next-hop
 '**' denotes best mcast next-hop
 '[x/y]' denotes [preference/metric]
 '%<string>' in via output denotes VRF <string>
```

```
10.2.3.4/32, ubest/mbest: 1/0
```

```
*via 10.100.100.1%default, [20/0], 04:15:13, bgp-200, external, tag 300, segid: 4000502 tunnelid: 0
```

```
S2-BG2#
S2-BG2#
```

```
show bgp l2vpn evpn
```

```
BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 5455, Local Router ID is 10.31.1.4
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - best2
```

Network	Next Hop	Metric	LocPrf	Weight	Path
Route Distinguisher: 100:4000502					
*>e[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.100.100.1			0 300 100	i
*>e[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.100.100.1			0 300 100 65111	i
*>e[5]:[0]:[0]:[32]:[10.100.100.1]/224	10.100.100.1			0 300 100	i
*>e[5]:[0]:[0]:[32]:[10.100.100.2]/224	10.100.100.1			0 300 100	i

```
<#root>
```

```
Router_Server#
```

```
show ip int brief
```

```
IP Interface Status for VRF "default"(1)
```

Interface	IP Address	Interface Status
Lo0	10.32.1.1	protocol-up/link-up/admin-up

```
Eth2/1          10.150.150.2    protocol-up/link-up/admin-up
Eth2/2          10.150.151.2    protocol-up/link-up/admin-up
Eth2/4          10.150.152.2    protocol-up/link-up/admin-up
Eth2/5          10.150.153.2    protocol-up/link-up/admin-up
Router_Server#
Router_Server#
```

```
show ip route 10.100.100.1
```

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

```
10.100.100.1/32, ubest/mbest: 2/0
  *via 10.150.150.1, [20/0], 4d22h, bgp-300, external, tag 100
  *via 10.150.151.1, [20/0], 4d22h, bgp-300, external, tag 100
```

```
Router_Server#
Router_Server#
Router_Server#
```

```
show ip route 10.100.100.2
```

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

```
10.100.100.2/32, ubest/mbest: 2/0
  *via 10.150.152.1, [20/0], 3w5d, bgp-300, external, tag 200
  *via 10.150.153.1, [20/0], 3w5d, bgp-300, external, tag 200
```

```
Router_Server#
Router_Server#
```

```
show bgp l2vpn evpn
```

```
BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 4574, Local Router ID is 10.32.1.1
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: 200:4000100					
* e[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272	10.100.100.2	2000		0	200 i
*>e	10.100.100.2	2000		0	200 i
Route Distinguisher: 100:4000502					
*>e[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.100.100.1	2000		0	100 i
* e	10.100.100.1	2000		0	100 i
* e[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.100.100.1	2000		0	100 65111 i


```

*>e          10.100.100.1          2000          0 100 65111 i

*>e[5]:[0]:[0]:[32]:[10.100.100.1]/224
          10.100.100.1          2000          0 100 i
* e          10.100.100.1          2000          0 100 i
*>e[5]:[0]:[0]:[32]:[10.100.100.2]/224
>          10.100.100.1          2000          0 100 i
* e          10.100.100.1          2000          0 100 i

```

<#root>

S1_B2#
S1_B2#

show ip int brie

```

IP Interface Status for VRF "default"(1)
Interface          IP Address          Interface Status
Lo0                 10.31.1.2           protocol-up/link-up/admin-up
Lo1                 10.134.134.134      protocol-up/link-up/admin-up
Lo100              10.100.100.1        protocol-up/link-up/admin-up
Eth1/1             192.168.16.12       protocol-up/link-up/admin-up
Eth1/3             10.150.151.1        protocol-up/link-up/admin-up
S1_B2#
S1_B2#

```

sho ip route 192.168.100.103 vrf vrf_2

```

IP Route Table for VRF "vrf_2"
'*' denotes best ucast next-hop
 '**' denotes best mcast next-hop
 '[x/y]' denotes [preference/metric]
 '%<string>' in via output denotes VRF <string>

```

```

192.168.100.103/32, ubest/mbest: 1/0
  *via 10.100.100.2%default, [20/0], 4d23h, bgp-100, external, tag 300, segid: 4000502 tunnelid: 0xa64

```

S1_B2#
S1_B2#

show ip route 10.2.3.4 vrf vrf_2

```

IP Route Table for VRF "vrf_2"
'*' denotes best ucast next-hop
 '**' denotes best mcast next-hop
 '[x/y]' denotes [preference/metric]
 '%<string>' in via output denotes VRF <string>

```

```

10.2.3.4/32, ubest/mbest: 1/0
  *via 10.102.1.10%default, [200/0], 05:04:19, bgp-100, internal, tag 65111, segid: 4000502 tunnelid:

```

S1_B2#
S1_B2#
S1_B2#

show bgp l2vpn evpn

BGP routing table information for VRF default, address family L2VPN EVPN
 BGP table version is 5449, Local Router ID is 10.31.1.2
 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-redist, I-injected
 Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - best2

Network	Next Hop	Metric	LocPrf	Weight	Path
Route Distinguisher: 200:4000100					
*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.df3b]:[32]:[192.168.100.104]/272	10.100.100.2			0 300 200	i
*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272	10.100.100.2			0 300 200	i

<#root>

Route Distinguisher: 200:4000200					
*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.df3b]:[32]:[192.168.100.104]/272	10.100.100.2			0 300 200	i
*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272	10.100.100.2			0 300 200	i

Route Distinguisher: 10.102.0.9:5					
*>i[2]:[0]:[0]:[48]:[cc7f.76fa.118f]:[0]:[0.0.0.0]/216	10.202.202.202		100	0	i
*>i[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.102.1.10		100	0	i
*>i[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.102.1.10		100	0 65111	i

*>i[5]:[0]:[0]:[32]:[10.100.100.2]/224	10.102.1.10		100	0	i
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Route Distinguisher: 10.102.0.10:5					
*>i[2]:[0]:[0]:[48]:[cc7f.76c6.a673]:[0]:[0.0.0.0]/216	10.202.202.202		100	0	i
*>i[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.102.1.6		100	0	i
*>i[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.102.1.6		100	0 65111	i
*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224	10.102.1.6		100	0	i

Route Distinguisher: 10.31.1.2:5 (L3VNI 4000502)					
*>l[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.134.134.134		100	0	i
*>l[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.134.134.134		100	0 65111	i
*>l[5]:[0]:[0]:[32]:[10.100.100.1]/224	10.134.134.134		100	0	i
*>l[5]:[0]:[0]:[32]:[10.100.100.2]/224	10.134.134.134		100	0	i

S1_B2#

<#root>

S1-Bg1#

show ip int brie

IP Interface Status for VRF "default"(1)

Interface	IP Address	Interface Status
Lo0	10.31.1.1	protocol-up/link-up/admin-up
Lo1	10.133.133.133	protocol-up/link-up/admin-up
Lo100	10.100.100.1	protocol-up/link-up/admin-up
Eth1/1	192.168.15.12	protocol-up/link-up/admin-up
Eth1/3	10.150.150.1	protocol-up/link-up/admin-up

S1-Bg1#

S1-Bg1#

show ip route 10.100.100.2 vrf vrf_2

IP Route Table for VRF "vrf_2"

'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%<string>' in via output denotes VRF <string>

10.100.100.2/32, ubest/mbest: 1/0

*via 10.102.1.10%default, [200/0], 4d23h, bgp-100, internal, tag 100, segid: 4000502 tunnelid: 0xa66

S1-Bg1#

S1-Bg1#

show ip route 192.168.100.103 vrf vrf_2

IP Route Table for VRF "vrf_2"

'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%<string>' in via output denotes VRF <string>

192.168.100.103/32, ubest/mbest: 1/0

*via 10.100.100.2%default, [20/0], 4d23h, bgp-100, external, tag 300, segid: 4000502 tunnelid: 0xa66

S1-Bg1#

S1-Bg1#

show ip route 10.2.3.4 vrf vrf_2

IP Route Table for VRF "vrf_2"

'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%<string>' in via output denotes VRF <string>

10.2.3.4/32, ubest/mbest: 1/0

*via 10.102.1.10%default, [200/0], 05:21:41, bgp-100, internal, tag 65111, segid: 4000502 tunnelid:

S1-Bg1#

S1-Bg1#

show bgp l2vpn evpn

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 6654, Local Router ID is 10.31.1.1
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: 200:4000100					
*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.df3b]:[32]:[192.168.100.104]/272	10.100.100.2			0 300 200	i

*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272	10.100.100.2			0 300 200	i
---	--------------	--	--	-----------	---

Route Distinguisher: 200:4000200					
*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.df3b]:[32]:[192.168.200.104]/272	10.100.100.2			0 300 200	i

*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.200.103]/272	10.100.100.2			0 300 200	i
---	--------------	--	--	-----------	---

Route Distinguisher: 10.31.1.1:32867 (L2VNI 4000100)					
*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272	10.100.100.2			0 300 200	i

*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ff09]:[32]:[192.168.100.102]/272	10.202.202.202		100	0	i
---	----------------	--	-----	---	---

* i	10.202.202.202		100	0	i
-----	----------------	--	-----	---	---

*>i[2]:[0]:[0]:[48]:[6c8b.d3ff.00a7]:[32]:[192.168.100.100]/272	10.201.201.201		100	0	i
---	----------------	--	-----	---	---

* i	10.201.201.201		100	0	i
-----	----------------	--	-----	---	---

*>e[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.200.103]/272	10.100.100.2			0 300 200	i
---	--------------	--	--	-----------	---

*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ff09]:[32]:[192.168.200.102]/272	10.202.202.202		100	0	i
---	----------------	--	-----	---	---

* i	10.202.202.202		100	0	i
-----	----------------	--	-----	---	---

*>i[2]:[0]:[0]:[48]:[6c8b.d3ff.00a7]:[32]:[192.168.200.100]/272	10.201.201.201		100	0	i
---	----------------	--	-----	---	---

* i	10.201.201.201		100	0	i
-----	----------------	--	-----	---	---

Route Distinguisher: 10.102.0.10:5					
*>i[2]:[0]:[0]:[48]:[cc7f.76c6.a673]:[0]:[0.0.0.0]/216	10.202.202.202		100	0	i

*>i[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.102.1.6		100	0	i
---	------------	--	-----	---	---

*>i[5]:[0]:[0]:[32]:[10.2.3.4]/224	10.102.1.6		100	0 65111	i
------------------------------------	------------	--	-----	---------	---

*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224	10.102.1.6		100	0	i
--	------------	--	-----	---	---

Route Distinguisher: 10.31.1.1:5 (L3VNI 4000502)

*>l[5]:[0]:[0]:[24]:[192.168.100.0]/224

```

                10.133.133.133                100          0 i
*>l[5]:[0]:[0]:[32]:[10.2.3.4]/224
                10.133.133.133                100          0 65111 i
*>l[5]:[0]:[0]:[32]:[10.100.100.1]/224
                10.133.133.133                100          0 i
*>l[5]:[0]:[0]:[32]:[10.100.100.2]/224
                10.133.133.133                100          0 i
S1-Bg1#

```

<#root>

S1-Leaf1#

show ip int brief

```

IP Interface Status for VRF "default"(1)
Interface          IP Address      Interface Status
Lo0                10.102.0.5     protocol-up/link-up/admin-up
Lo1                10.102.1.8     protocol-up/link-up/admin-up
Eth1/2             192.168.17.12  protocol-up/link-up/admin-up
S1-Leaf1#

```

S1-Leaf1#

show bgp l2vpn evpn vrf vrf_2

```

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 918, Local Router ID is 10.102.0.5
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: 10.102.0.5:5 (L3VNI 4000502)
*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272
                10.100.100.1                100          0 300 200 i
*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.200.103]/272
                10.100.100.1                100          0 300 200 i
*>i[5]:[0]:[0]:[24]:[192.168.100.0]/224
                10.102.1.10             100          0 i
* i                10.102.1.6                 100          0 i
*>i[5]:[0]:[0]:[32]:[10.2.3.4]/224
                10.102.1.10             100          0 65111 i
* i                10.102.1.6                 100          0 65111 i

*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224
                10.102.1.6                 100          0 i
*>i[5]:[0]:[0]:[32]:[10.100.100.2]/224
                10.102.1.10             100          0 i

```

S1-Leaf1#

S1-Leaf2#

show ip int brie

```

IP Interface Status for VRF "default"(1)
Interface          IP Address      Interface Status

```

```

Lo0          10.102.0.8      protocol-up/link-up/admin-up
Lo1          10.102.1.9      protocol-up/link-up/admin-up
Eth1/2       192.168.18.12   protocol-up/link-up/admin-up
S1-Leaf2#
S1-Leaf2#
S1-Leaf2#

```

```
show bgp l2vpn evpn vrf vrf_2
```

```

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 680, Local Router ID is 10.102.0.8
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: 10.102.0.8:5 (L3VNI 4000502)					
*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272	10.100.100.1		100	0 300 200	i
*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.200.103]/272	10.100.100.1		100	0 300 200	i
*>i[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.102.1.10	100	0		i
* i	10.102.1.6		100		0 i
* i[5]:[0]:[0]:[32]:[10.2.3.4]/224					
	10.102.1.6		100		0 65111 i
*>i	10.102.1.10		100		0 65111 i
*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224	10.102.1.6		100		0 i
*>i[5]:[0]:[0]:[32]:[10.100.100.2]/224	10.102.1.10		100		0 i

```

S1-Leaf3#
S1-Leaf3#

```

```
show ip int brie
```

```

IP Interface Status for VRF "default"(1)
Interface      IP Address      Interface Status
Lo0            10.102.0.9     protocol-up/link-up/admin-up
Lo1            10.102.1.10   protocol-up/link-up/admin-up
Eth1/2         192.168.19.12 protocol-up/link-up/admin-up

```

```

S1-Leaf3#
S1-Leaf3#
S1-Leaf3#
S1-Leaf3#

```

```
show bgp l2vpn evpn vrf vrf_2
```

```

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 5431, Local Router ID is 10.102.0.9
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: 10.102.0.9:5 (L3VNI 4000502)
*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272
    10.100.100.1          100          0 300 200 i
* i[5]:[0]:[0]:[24]:[192.168.100.0]/224
    10.102.1.6          100          0 i
*>l          10.102.1.10        100          32768 i
* i[5]:[0]:[0]:[32]:[10.2.3.4]/224
    10.102.1.6          100          0 65111 i
*>l          10.102.1.10        100          0 65111 i
*>i[5]:[0]:[0]:[32]:[10.100.100.1]/224
    10.102.1.6          100          0 i
*>l[5]:[0]:[0]:[32]:[10.100.100.2]/224
    10.102.1.10        100          32768 i

```

S1-Leaf3#

S1_Leaf4#

S1_Leaf4#

show ip int brief

IP Interface Status for VRF "default"(1)

Interface	IP Address	Interface Status
Lo0	10.102.0.10	protocol-up/link-up/admin-up
Lo1	10.102.1.6	protocol-up/link-up/admin-up
Eth1/2	192.168.20.12	protocol-up/link-up/admin-up

S1_Leaf4#

S1_Leaf4#

S1_Leaf4#

show bgp l2vpn evpn vrf vrf_2

BGP routing table information for VRF default, address family L2VPN EVPN

BGP table version is 5118, Local Router ID is 10.102.0.10

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: 10.102.0.10:5 (L3VNI 4000502)					
*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.100.103]/272	10.100.100.1		100	0	300 200 i
*>i[2]:[0]:[0]:[48]:[6c8b.d3fe.ecb5]:[32]:[192.168.200.103]/272	10.100.100.1		100	0	300 200 i
*>i[2]:[0]:[0]:[48]:[6c8b.d3ff.00a7]:[32]:[192.168.100.100]/272	10.201.201.201		100	0	i
* i	10.201.201.201		100	0	i
* i[5]:[0]:[0]:[24]:[192.168.100.0]/224	10.102.1.10		100	0	i
*>l	10.102.1.6		100	32768	i
*>l[5]:[0]:[0]:[32]:[10.2.3.4]/224					

```

10.102.1.6                                0 65111 i

* i          10.102.1.10                    100      0 65111 i

*>l[5]:[0]:[0]:[32]:[10.100.100.1]/224
10.102.1.6                                100      32768 i
*>i[5]:[0]:[0]:[32]:[10.100.100.2]/224
10.102.1.10                               100      0 i
S1_Leaf4#

```

Vérification du plan de données

La vérification du plan de données est testée sur plusieurs périphériques afin de comprendre différentes méthodes et variantes de capture de paquets.

Envoyez une requête ping au routeur externe loopback 100 « 10.2.3.4 » à partir de l'adresse IP source 192.168.100.103 sur l'hôte 3.

```
<#root>
```

```
HOST_3#
```

```
HOST_3#
```

```
ping 10.2.3.4 source 192.168.100.103
```

```

PING 10.2.3.4 (10.2.3.4) from 192.168.100.103: 56 data bytes
64 bytes from 10.2.3.4: icmp_seq=0 ttl=250 time=1.153 ms
64 bytes from 10.2.3.4: icmp_seq=1 ttl=250 time=0.569 ms
64 bytes from 10.2.3.4: icmp_seq=2 ttl=250 time=0.562 ms
64 bytes from 10.2.3.4: icmp_seq=3 ttl=250 time=0.525 ms
64 bytes from 10.2.3.4: icmp_seq=4 ttl=250 time=0.527 ms
--- 10.2.3.4 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.525/0.667/1.153 ms
HOST_3#

```

Ethalyzer est utilisé sur Site 2 Leaf-1 et Leaf-2 afin de confirmer quel leaf reçoit/transfère le trafic pour l'accessibilité du bouclage de routeur externe 10.2.3.4.

```
<#root>
```

```
S2-Leaf1(config-monitor)#
```

```
sho clock
```

```
Warning: No NTP peer/server configured. Time may be out of sync.
```

```
07:11:37.455 UTC Tue Feb 21 2023
```

```
Time source is NTP
```

```
S2-Leaf1(config-monitor)#
```

```
S2-Leaf1(config-monitor)#
```

```
show run section monitor
```



```
show running-config | section monitor
icam monitor scale
monitor session 1
  source interface port-channel100 both
  destination interface sup-eth0
  no shut
S2-Leaf1(config-monitor)#
S2-Leaf2(config-monitor)#
S2-Leaf2(config-monitor)#

ethanalyzer local interface inband display-filter "ip.addr==10.2.3.4 && ip.addr==192.168.100.103 && icmp"
```

```
Capturing on 'ps-inb'
1385 2023-02-21 07:10:46.424195144 192.168.100.103 â†’ 10.2.3.4 ICMP 102 Echo (ping) request id=0xc
1386 2023-02-21 07:10:46.424818423 10.2.3.4 â†’ 192.168.100.103 ICMP 98 Echo (ping) reply id=0xc
1387 2023-02-21 07:10:46.425263621 192.168.100.103 â†’ 10.2.3.4 ICMP 102 Echo (ping) request id=0xc
1388 2023-02-21 07:10:46.425486046 10.2.3.4 â†’ 192.168.100.103 ICMP 98 Echo (ping) reply id=0xc
1389 2023-02-21 07:10:46.425856150 192.168.100.103 â†’ 10.2.3.4 ICMP 102 Echo (ping) request id=0xc
1390 2023-02-21 07:10:46.426095692 10.2.3.4 â†’ 192.168.100.103 ICMP 98 Echo (ping) reply id=0xc
1391 2023-02-21 07:10:46.426438174 192.168.100.103 â†’ 10.2.3.4 ICMP 102 Echo (ping) request id=0xc
1392 2023-02-21 07:10:46.426642605 10.2.3.4 â†’ 192.168.100.103 ICMP 98 Echo (ping) reply id=0xc
1393 2023-02-21 07:10:46.427004108 192.168.100.103 â†’ 10.2.3.4 ICMP 102 Echo (ping) request id=0xc
1394 2023-02-21 07:10:46.427210984 10.2.3.4 â†’ 192.168.100.103 ICMP 98 Echo (ping) reply id=0xc
10
S2-Leaf2(config-monitor)#
S2-Leaf2(config-monitor)#

sho clock
```

```
Warning: No NTP peer/server configured. Time may be out of sync.
07:12:31.069 UTC Tue Feb 21 2023
Time source is NTP
S2-Leaf2(config-monitor)#
```

Le résultat de l'interface de ligne de commande a confirmé que Site 2 Leaf-2 reçoit et transfère la requête ICMP (Internet Control Message Protocol) pour le routeur externe 10.2.3.4.

L'exemple de CLI suivant confirme que le site 1 vérifie quel terminal transmet les paquets vers la destination 10.2.3.4.

```
<#root>

S1-Leaf3(config-monitor)#
S1-Leaf3(config-monitor)#

ethanalyzer local interface inband display-filter "ip.addr==10.2.3.4 && ip.addr==192.168.100.103 && icmp"

Capturing on 'ps-inb'
253 2023-02-21 07:10:50.379741403 192.168.100.103 â†’ 10.2.3.4 ICMP 98 Echo (ping) request id=0xc
254 2023-02-21 07:10:50.380357311 10.2.3.4 â†’ 192.168.100.103 ICMP 102 Echo (ping) reply id=0xc
255 2023-02-21 07:10:50.380810012 192.168.100.103 â†’ 10.2.3.4 ICMP 98 Echo (ping) request id=0xc
256 2023-02-21 07:10:50.381025676 10.2.3.4 â†’ 192.168.100.103 ICMP 102 Echo (ping) reply id=0xc
257 2023-02-21 07:10:50.381401968 192.168.100.103 â†’ 10.2.3.4 ICMP 98 Echo (ping) request id=0xc
258 2023-02-21 07:10:50.381631838 10.2.3.4 â†’ 192.168.100.103 ICMP 102 Echo (ping) reply id=0xc
259 2023-02-21 07:10:50.381984272 192.168.100.103 â†’ 10.2.3.4 ICMP 98 Echo (ping) request id=0xc
260 2023-02-21 07:10:50.382176820 10.2.3.4 â†’ 192.168.100.103 ICMP 102 Echo (ping) reply id=0xc
```

```
261 2023-02-21 07:10:50.382549820 192.168.100.103 â†’ 10.2.3.4 ICMP 98 Echo (ping) request id=0xc
262 2023-02-21 07:10:50.382746640 10.2.3.4 â†’ 192.168.100.103 ICMP 102 Echo (ping) reply id=0x
```

```
S1-Leaf3(config-monitor)#
```

```
sho clock
```

```
Warning: No NTP peer/server configured. Time may be out of sync.
```

```
07:11:22.514 UTC Tue Feb 21 2023
```

```
Time source is NTP
```

```
S1-Leaf3(config-monitor)#
```

```
S1-Leaf3(config-monitor)#
```

```
show run section monitor
```

```
show running-config | section monitor
```

```
monitor session 1
```

```
source interface port-channel2 both
```

```
destination interface sup-eth0
```

```
no shut
```

```
S1-Leaf3(config-monitor)#
```

```
S1-Leaf3(config-monitor)#
```

```
show moni sess 1
```

```
session 1
```

```
-----
type           : local
state          : up
acl-name       : acl-name not specified
source intf    :
  rx           : Po2
  tx           : Po2
  both         : Po2
source VLANs   :
  rx           :
  tx           :
  both         :
filter VLANs   : filter not specified
source fwd drops :
destination ports : sup-eth0
source VSANs   :
  rx           :
```

```
S1-Leaf3(config-monitor)#
```

```
S1_Leaf4(config-monitor)#
```

```
ethalyzer local interface inband display-filter "ip.addr==192.168.100.103" limit-captured-frames 0
```

```
Capturing on 'ps-inb'
```

```
S1_Leaf4(config-monitor)#
```

```
S1_Leaf4(config-monitor)#
```

```
sho clock
```

```
Warning: No NTP peer/server configured. Time may be out of sync.
```

```
07:11:15.187 UTC Tue Feb 21 2023
```

```
Time source is NTP
```

```
S1_Leaf4(config-monitor)#
```

Le client répond qu'il rencontre des problèmes de connectivité entre l'hôte 3 et le routeur externe. Le client veut confirmer que tout va bien dans le fabric VXLAN et a besoin de confirmation que notre leaf transfère le trafic vers le routeur externe. Les étapes à suivre pour résoudre ce problème sont les suivantes :

1. Lancez une requête ping vers le routeur externe et vérifiez si l'adresse IP 10.2.3.4 est accessible ou non.
2. Effectuez des captures ELAM (Embedded Logic Analyzer Module) sur S1-Leaf3 et S1-Leaf4 afin de voir s'il se déclenche (en fonction de la topologie et du flux de trafic).
3. Avec la capture ELAM, vérifiez que le paquet est transféré depuis l'interface et pointe vers le routeur externe.
4. Site 2 - Avec l'éthanaliseur, nous pouvons voir la requête et la réponse ICMP. En l'absence de réponse, le problème se situe du côté distant .
5. Si 10.2.3.4 est accessible à partir de l'hôte 4 et que l'hôte 3 rencontre des problèmes, il peut s'agir d'un problème spécifique à l'hôte. Vérifiez la liste de contrôle d'accès (ACL), les erreurs CRC (Cyclic Redundancy Check) et la liaison de hachage.

```
<#root>
```

```
HOST_3#
```

```
ping 10.2.3.4 source 192.168.100.103
```

```
PING 10.2.3.4 (10.2.3.4) from 192.168.100.103: 56 data bytes
Request 0 timed out
Request 1 timed out
Request 2 timed out
Request 3 timed out
Request 4 timed out
--- 10.2.3.4 ping statistics ---
5 packets transmitted, 0 packets received, 100.00% packet loss
HOST_3#
```

```
Host4#
```

```
ping 10.2.3.4 source 192.168.100.104
```

```
PING 10.2.3.4 (10.2.3.4) from 192.168.100.104: 56 data bytes
64 bytes from 10.2.3.4: icmp_seq=0 ttl=250 time=1.266 ms
64 bytes from 10.2.3.4: icmp_seq=1 ttl=250 time=0.62 m
64 bytes from 10.2.3.4: icmp_seq=2 ttl=250 time=0.603 ms
64 bytes from 10.2.3.4: icmp_seq=3 ttl=250 time=0.474 ms
64 bytes from 10.2.3.4: icmp_seq=4 ttl=250 time=0.457 ms
--- 10.2.3.4 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.457/0.684/1.266 ms
```

Vérification du plan de données

Effectuer des captures ELAM pour vérifier le port ASIC, la tranche et l'ID source

```
<#root>
```

```
show hardware internal tah interface
```

```
show system internal ethpm info interface
```

```
| i i src
```

```
<#root>
```

```
S1-Leaf3(TAH-elam)#
```

```
debug platform internal tah elam asic 0
```

```
S1-Leaf3(TAH-elam)#
```

```
trigger init asic 0 slice 1 in-select 7 out-select 0 use-src-id 8
```

```
Slot 1: param values: asic 0, slice 1, lu-a2d 1, in-select 7, out-select 0, src_id 8
```

```
S1-Leaf3(TAH-elam-insel7)#
```

```
set inner ipv4 src_ip 192.168.100.103
```

```
S1-Leaf3(TAH-elam-insel7)#
```

```
start
```

```
S1-Leaf3(TAH-elam-insel7)#
```

```
report
```

```
HEAVENLY ELAM REPORT SUMMARY
```



```
ELAM not triggered yet on slot - 1, asic - 0, slice - 1  
S1_Leaf4(TAH-elam-insel7)#
```

La conclusion du résultat d'ELAM est que le leaf transfère le trafic au routeur externe, mais il n'y a pas de réponse du routeur externe. Par conséquent, vérifiez auprès de l'€™équipe du routeur externe la réponse ICMP.

À propos de cette traduction

Cisco a traduit ce document en traduction automatisée vérifiée par une personne dans le cadre d'un service mondial permettant à nos utilisateurs d'obtenir le contenu d'assistance dans leur propre langue.

Il convient cependant de noter que même la meilleure traduction automatisée ne sera pas aussi précise que celle fournie par un traducteur professionnel.