

# اهحال صاوم كحتلا يوتسم عااخأ فاشكتسا FabricPath تائيبلا

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## عمدقملا

FabricPath ىرحتي نأ ةيساسألا تاوطخلا ةقيثو اذه فصوي

## ةيساسألا تابلطتملا

### تابلطتملا

ةيلالاتلا عيضاوملاب ةفرعم كيديل نوكت نأب Cisco NXOS® ي صوت

- FabricPath
- طيسولا ماظنلا ىل طيسولا ماظنلا لوكوتورب (IS-IS)
- ةدتمملا ةرچشلا لوكوتورب (STP)
- ةنمضملا قطنملا للحم ةدحو (ELAM)

### عمدختسملا تانوكملا

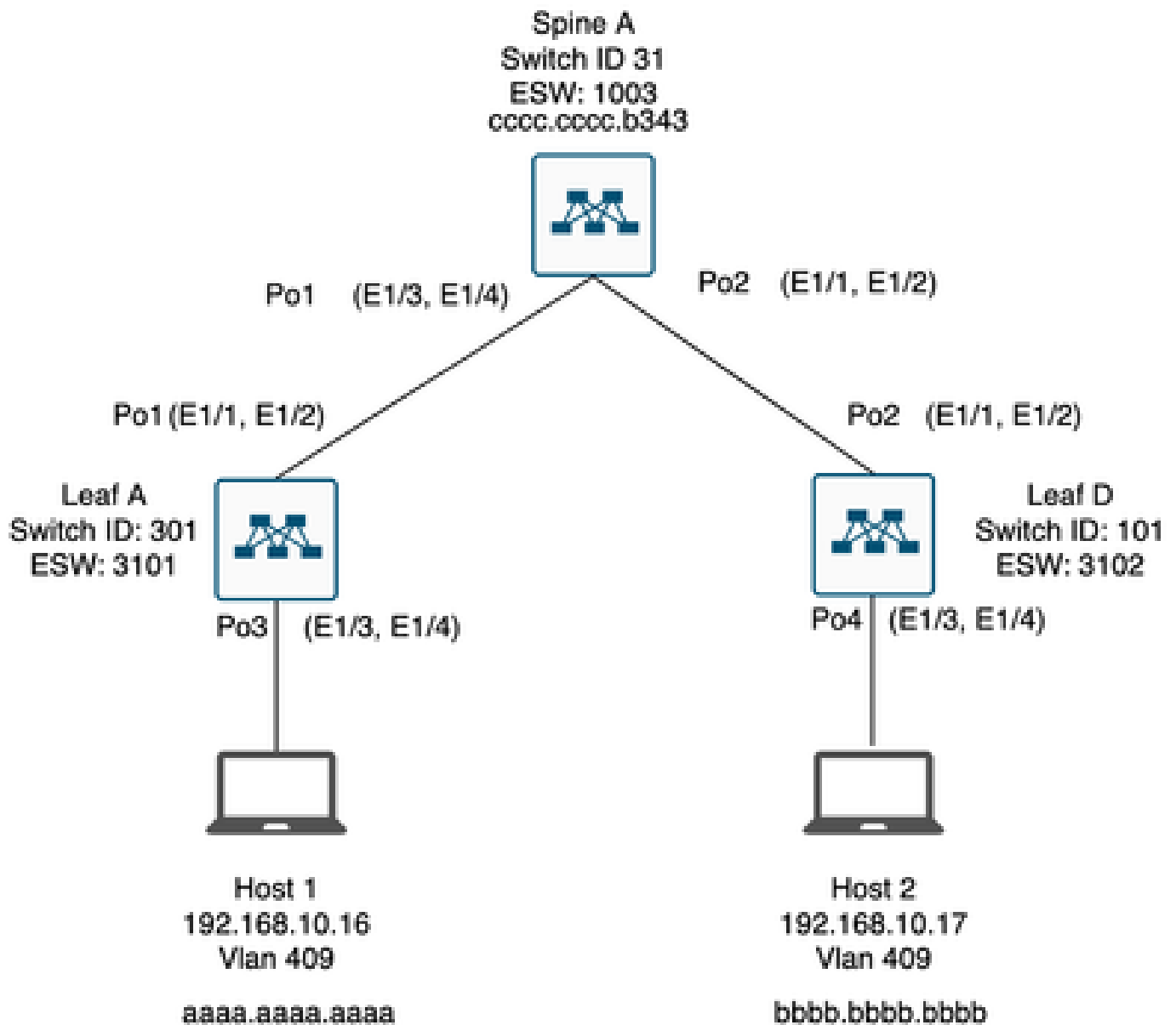
Nexus 7000 لثم ةنيعم ةزهجأ ىلع دنتسملا اذه رصتقي

ةصاخ ةيلمعم ةئيبي يف ةدوجوملا ةزهجألا نم دنتسملا اذه يف ةدراولا تامولعملا عاشنإ مت تناك اذا. (يضايرتفا) حوسمم نيوكتب دنتسملا اذه يف عمدختسملا ةزهجألا عيمج تادب رمايال لمحتحملا ريثاتلل كمهف نم دكأتف، ليغشتلا دي قكتكبش

## ةيساسأ تامولعم

يف ةصاخو، تنرثي تالكبش تاناكم ني سحت ىل فدهت يتلا Cisco ةينقت يه FabricPath قاطنلا ةعساو تانايابللا زكارم تائيبلا





## اهحال صاوا عا طخال فاشك سا

2. فيضم ل عم لص تي ال عي ط تي 1 فيضم ل

<#root>

Leaf\_A#

ping 192.168.10.17

```

PING 192.168.10.17 (192.168.10.17): 56 data bytes
ping: sendto 192.168.10.17 64 chars, No route to host
Request 0 timed out
ping: sendto 192.168.10.17 64 chars, No route to host
^C
--- 192.168.10.17 ping statistics ---
2 packets transmitted, 0 packets received, 100.00% packet loss
Leaf_A#

```

1) نې فيض ملل جي حص لک شېب MAC ناونع لودج ءىبعت نم ققحت 1)

<#root>

Leaf\_A#

show mac address-table vlan 409

Note: MAC table entries displayed are getting read from software.  
 Use the 'hardware-age' keyword to get information related to 'Age'

Legend:

\* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC  
 age - seconds since last seen,+ - primary entry using vPC Peer-Link,  
 (T) - True, (F) - False , ~~~ - use 'hardware-age' keyword to retrieve age info  
 VLAN MAC Address Type age Secure NTFY Ports/SWID.SSID.LID

-----+-----+-----+-----+-----+-----+-----+-----

\* 409 aaaa.aaaa.aaaa dynamic ~~~ F F Po3

<----- Leaf A is not learning the mac address of Host

Leaf\_A#

<#root>

Leaf\_D#

show mac address-table vlan 409

Note: MAC table entries displayed are getting read from software.  
 Use the 'hardware-age' keyword to get information related to 'Age'

Legend:

\* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC  
 age - seconds since last seen,+ - primary entry using vPC Peer-Link,  
 (T) - True, (F) - False , ~~~ - use 'hardware-age' keyword to retrieve age info  
 VLAN MAC Address Type age Secure NTFY Ports/SWID.SSID.LID

-----+-----+-----+-----+-----+-----+-----+-----

\* 409 bbbb.bbbb.bbbb dynamic ~~~ F F Po4

409 aaaa.aaaa.aaaa dynamic ~~~ F F 3101.1.65535 <----- Leaf D is correctly learning both Mac Address

Leaf\_D#

2) FabricPath نيكمت بجي. راسم لابل ةين عمل VLAN ةكبشو ةهجاو لك نيوكت نم ققحت

<#root>

Leaf\_A#

show run fabricpath

!Command: show running-config fabricpath

!Time: Mon Apr 22 23:12:40 2024

version 6.2(12)

install feature-set fabricpath

feature-set fabricpath

vlan 409

mode fabricpath

fabricpath domain default

fabricpath switch-id 301

vpc domain 301

fabricpath switch-id 3101

interface port-channel1

switchport mode fabricpath

interface port-channel2

switchport mode fabricpath

interface Ethernet1/1

switchport mode fabricpath

interface Ethernet1/2

switchport mode fabricpath

Leaf\_A#

<#root>

Leaf\_D#

show run fabricpath

!Command: show running-config fabricpath

!Time: Mon Apr 22 23:12:40 2024

version 6.2(12)

install feature-set fabricpath

feature-set fabricpath

<----- FabricPath is not enabled for VLAN 409

```
fabricpath switch-id 101
```

```
vpc domain 302  
fabricpath switch-id 3102
```

```
interface port-channel1  
switchport mode fabricpath
```

```
interface port-channel2  
switchport mode fabricpath
```

```
interface Ethernet1/1  
switchport mode fabricpath
```

```
interface Ethernet1/2  
switchport mode fabricpath
```

```
Leaf_D#  
Leaf_D#
```

```
<#root>
```

```
Spine_A#
```

```
show run fabricpath
```

```
!Command: show running-config fabricpath  
!Time: Mon Apr 22 23:12:40 2024
```

```
version 6.2(12)  
install feature-set fabricpath  
feature-set fabricpath
```

```
vlan 409  
mode fabricpath  
fabricpath domain default
```

```
fabricpath switch-id 31
```

```
vpc domain 101  
fabricpath switch-id 1003
```

```
interface port-channel1  
switchport mode fabricpath
```

```
interface port-channel2  
switchport mode fabricpath
```

```
interface Ethernet1/1  
switchport mode fabricpath
```

```
interface Ethernet1/2  
switchport mode fabricpath
```

```
interface Ethernet1/3
switchport mode fabricpath
```

```
interface Ethernet1/4
switchport mode fabricpath
```

```
Spine_A#
```

3) FabricPath في كراشم زاهج لكل تالوحملا تافرع نم ققحتلا

```
<#root>
```

```
Leaf_A#
```

```
show fabricpath switch-id local
```

```
Switch-Id: 301
System-Id: aaaa.aaaa.b341
Leaf_A#
```

```
<#root>
```

```
Leaf_D#
```

```
show fabricpath switch-id local
```

```
Switch-Id: 101
System-Id: bbbb.bbbb.b342
Leaf_D#
```

```
<#root>
```

```
Spine_A#
```

```
show fabricpath switch-id local
```

```
Switch-Id: 31
System-Id: cccc.cccc.b343
Spine_A#
```

4) زاهج لكل لوجملا فرع مادختساب ةحيجصللا تاراسملا نيوكت نم ققحت

```
<#root>
```

```
Leaf_A#
```

```
show fabricpath route switchid 101
```

FabricPath Unicast Route Table  
'a/b/c' denotes ftag/switch-id/subswitch-id  
'[x/y]' denotes [admin distance/metric]  
ftag 0 is local ftag  
subswitch-id 0 is default subswitch-id

FabricPath Unicast Route Table for Topology-Default

1/101/0, number of next-hops: 1  
via Po1, [115/5], 1 day/s 12:21:29, isis\_fabricpath-default  
<----- The route from Leaf A to Leaf D is correctly configured.

Leaf\_A

<#root>

Leaf\_D#

show fabricpath route switchid 301

FabricPath Unicast Route Table  
'a/b/c' denotes ftag/switch-id/subswitch-id  
'[x/y]' denotes [admin distance/metric]  
ftag 0 is local ftag  
subswitch-id 0 is default subswitch-id

FabricPath Unicast Route Table for Topology-Default

1/301/0, number of next-hops: 1  
via Po2, [115/5], 1 day/s 12:21:29, isis\_fabricpath-default  
<----- The route from Leaf D to Leaf A is correctly configured.

Leaf\_D

<#root>

Spine\_A#

show fabricpath route switchid 301

FabricPath Unicast Route Table  
'a/b/c' denotes ftag/switch-id/subswitch-id  
'[x/y]' denotes [admin distance/metric]  
ftag 0 is local ftag  
subswitch-id 0 is default subswitch-id

FabricPath Unicast Route Table for Topology-Default

1/301/0, number of next-hops: 1  
via Po1, [115/20], 1 day/s 06:13:21, isis\_fabricpath-default



<----- The route from Spine A to Leaf A is correctly configured.

Spine\_A#

Spine\_A#

show fabricpath route switchid 101

FabricPath Unicast Route Table  
'a/b/c' denotes ftag/switch-id/subswitch-id  
'[x/y]' denotes [admin distance/metric]  
ftag 0 is local ftag  
subswitch-id 0 is default subswitch-id

FabricPath Unicast Route Table for Topology-Default

1/101/0, number of next-hops: 1  
via Po2, [115/20], 1 day/s 06:13:21, isis\_fabricpath-default

<----- The route from Spine A to Leaf D is correctly configured.

Spine\_A#

5) يرقفلا دومعلاو قاروألانېب (IS-IS) طيسو ماظن ىلإ طيسو ماظن رواجت نم ققحتلا

<#root>

Leaf\_A#

show fabricpath isis adjacency

Fabricpath IS-IS domain: default Fabricpath IS-IS adjacency database:  
System ID SNPA Level State Hold Time Interface  
cccc.cccc.b343 N/A 1 UP 00:00:27 port-channel1

Leaf\_A#

<#root>

Leaf\_D#

show fabricpath isis adjacency

Fabricpath IS-IS domain: default Fabricpath IS-IS adjacency database:  
System ID SNPA Level State Hold Time Interface  
cccc.cccc.b343 N/A 1 UP 00:00:27 port-channel2

Leaf\_D#

6) ةيلا ءلا رشننلا ةيلمع يف تااضراعت ءوؤ و مءع نم ءكأت 6).

```
<#root>
```

```
Leaf_A#
```

```
show fabricpath conflict all
```

```
No Fabricpath ports in a state of resource conflict.
```

```
No Switch id Conflicts
```

```
No transitions in progress
```

```
Leaf_A#
```

```
<#root>
```

```
Leaf_D#
```

```
show fabricpath conflict all
```

```
No Fabricpath ports in a state of resource conflict.
```

```
No Switch id Conflicts
```

```
No transitions in progress
```

```
Leaf_D#
```

```
<#root>
```

```
Spine_A#
```

```
show fabricpath conflict all
```

```
No Fabricpath ports in a state of resource conflict.
```

```
No Switch id Conflicts
```

```
No transitions in progress
```

```
Spine_A#
```

7) IS-IS VLAN قاطن ىلإ VLAN تاكبش ةفاضل نم ققحت 7).

```
<#root>
```

Leaf\_A#

```
show fabricpath isis vlan-range
```

```
Fabricpath IS-IS domain: default
MT-0
Vlans configured:1,409
Leaf_A#
```

<#root>

Leaf\_D#

```
show fabricpath isis vlan-range
```

```
Fabricpath IS-IS domain: default
MT-0
Vlans configured:1          <----- VLAN 409 is not present
Leaf_D
```

<#root>

Spine\_A#

```
show fabricpath isis vlan-range
```

```
Fabricpath IS-IS domain: default
MT-0
Vlans configured:1, 409
Spine_A#
```

8) A. يرقف ال دومع ال في ELAM لي غشت مت اذا امم ققحت

<#root>

```
module-1# show hardware internal dev-port-map          <----- Determine the
```

F4

ASIC that is used for the FE on port

Eth1/2

. Enter this command in order to verify this.

```
-----
CARD_TYPE: 48 port 10G
>Front Panel ports:48
-----
```

```
Device name Dev role Abbr num_inst:
-----
```

```
> Flanker Eth Mac Driver DEV_ETHERNET_MAC MAC_0 6
> Flanker Fwd Driver DEV_LAYER_2_LOOKUP L2LKP 6
> Flanker Xbar Driver DEV_XBAR_INTF XBAR_INTF 6
```

```

> Flanker Queue Driver DEV_QUEUEING QUEUE 6
> Sacramento Xbar ASIC DEV_SWITCH_FABRIC SWICHF 2
> Flanker L3 Driver DEV_LAYER_3_LOOKUP L3LKP 6
> EDC DEV_PHY PHYS 7
+-----+
+-----+++FRONT PANEL PORT TO ASIC INSTANCE MAP+++-----+
+-----+
FP port | PHYS | MAC_0 |

L2LKP

| L3LKP | QUEUE | SWICHF
  1      0      0      0      0      0      0,1
  2      0      0      0      0      0      0,1

...
module-1#
module-1#
module-1# elam asic flanker instance 0
module-1(fln-elam)#
module-1(fln-elam)# elam asic flanker instance 0
module-1(fln-elam)# layer3
module-1(fln-l2-elam)#
module-1(fln-l2-elam)# trigger dbus ipv4 ingress if source-ipv4-address 192.168.10.17
module-1(fln-l2-elam)#
module-1(fln-l2-elam)# trigger rbus ingress if trig
module-1(fln-l2-elam)# start
module-1(fln-l2-elam)#
module-1(fln-l2-elam)#
module-1(fln-l2-elam)# status
ELAM Slot 1 instance 0: L2 DBUS Configuration: trigger dbus ipv4 ingress if source-ipv4-address 192.168
L2 DBUS: Armed
ELAM Slot 1 instance 0: L2 RBUS Configuration: trigger rbus ingress if trig
L2 RBUS: Armed
module-1(fln-l2-elam)# status
ELAM Slot 1 instance 0: L2 DBUS Configuration: trigger dbus ipv4 ingress if source-ipv4-address 192.168
L2 DBUS: Armed
ELAM Slot 1 instance 0: L2 RBUS Configuration: trigger rbus ingress if trig
L2 RBUS: Armed
module-1(fln-l2-elam)#

```

9) FabricPath على VLAN 409 مقرر كإضافة.

```

Leaf_D(config)# vlan 409
Leaf_D(config-vlan)# mode fabricpath
Leaf_D(config-vlan)# show run vlan

```

```

!Command: show running-config vlan
!Time: Wed Apr 24 20:27:29 2024

```

```

version 6.2(12)
vlan 1,409
vlan 409
mode fabricpath

```

```

Leaf_D(config-vlan)#

```



```

module-1(fln-elam)# elam asic flanker instance 0
module-1(fln-elam)# layer2
module-1(fln-l2-elam)#
module-1(fln-l2-elam)# trigger dbus ipv4 ingress if source-ipv4-address 192.168.10.17
module-1(fln-l2-elam)#
module-1(fln-l2-elam)# trigger rbus ingress if trig
module-1(fln-l2-elam)# start
module-1(fln-l2-elam)#
module-1(fln-l2-elam)# status
ELAM Slot 1 instance 0: L2 DBUS Configuration: trigger dbus ipv4 ingress if source-ipv4-address 192.168.10.17
L2 DBUS: Armed
ELAM Slot 1 instance 0: L2 RBUS Configuration: trigger rbus ingress if trig
L2 RBUS: Armed
module-1(fln-l2-elam)# status
ELAM Slot 1 instance 0: L2 DBUS Configuration: trigger dbus ipv4 ingress if source-ipv4-address 192.168.10.17
L2 DBUS: Triggered                <----- ELAM triggered

ELAM Slot 1 instance 0: L2 RBUS Configuration: trigger rbus ingress if trig
L2 RBUS: Triggered                <----- ELAM triggered

module-1(fln-l2-elam)#

```

3) فيضم الـ A إلى A ة قورولا نم لاصت الـ نم ققحت 3)

```
<#root>
```

```
Leaf_A#
```

```
ping 192.168.10.17
```

```

PING 192.168.10.17 (192.168.10.17): 56 data bytes
64 bytes from 192.168.10.17: icmp_seq=0 ttl=254 time=1.703 ms
64 bytes from 192.168.10.17: icmp_seq=1 ttl=254 time=1.235 ms
64 bytes from 192.168.10.17: icmp_seq=2 ttl=254 time=1.197 ms
64 bytes from 192.168.10.17: icmp_seq=3 ttl=254 time=3.442 ms
64 bytes from 192.168.10.17: icmp_seq=4 ttl=254 time=1.331 ms

```

```

--- 192.168.10.17 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.197/1.781/3.442 ms
Leaf_A#

```

## ةلص تاذا تامول عم

[Cisco FabricPath](#)

[Cisco Nexus 7000 NX-OS ةلسلس FabricPath رماو أعجم](#)

[Nexus 7000 M3 ةيطمن لة ةدحول ل ELAM ءارءا](#)

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ادخت ساب دن ت س مل ا ذه Cisco ت مچرت  
م ل اع ل اء ان ا ع مچ ي ف ن م دخت س مل ل م عد و ت ح م م دقت ل ة يرش ب ل و  
امك ة ق ي ق د ن و ك ت ن ل ة ل آل ة مچرت ل ض ف ا ن ا ة ظ ح ال 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 ال ا ة مچرت ل ا ع م ل ا ح ل ا و ه  
ى ل ا م اء ا د ع و ج ر ل ا ب ي ص و ت و ت ا مچرت ل ا هذه 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 مل ا