

# 基於Carmel ASIC的交換機(Nexus 5548/5596)中的vPC對等鏈路上的L2MP轉發

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## 簡介

在vPC拓撲中，只有孤立埠流量或泛洪流量（未知的單播、廣播、組播）在對等鏈路上可見使用者流量。對於這種泛洪流量，交換機需要確保在vPC的一個分支上接收的泛洪流量不會在另一個vPC分支上返回，以便資料包不會發回源或複製到其他vPC。

在基於Carmel的交換機(Nexus 55xx)中，vPC環路避免實施與基於Gatos(Nexus 5010/5020)的實施不同，後者針對對等鏈路上的泛洪流量使用單獨的內部MCT VLAN。

由於基於Carmel的交換機支援L2MP或fabricpath，因此工程部門決定使用基於L2MP的對等鏈路轉發。在此型號中，vPC主交換機的交換機ID為2748(0xabc)，而vPC輔助交換機的交換機ID為2749(0xabd)。2750(0xabe)的模擬交換機ID將用作輸入vPC但通過對等鏈路傳送的幀的源交換機ID。vPC主交換機上的所有埠將是FTAG 256的成員，vPC輔助交換機上的所有埠將是FTAG 257的成員。在vPC主交換機中，只有孤立埠將是FTAG 257的成員，而在vPC輔助交換機中，孤立埠將是FTAG 256的成員。

## 必要條件

### 需求

本文件沒有特定需求。

### 採用元件

本文件所述內容不限於特定軟體和硬體版本。

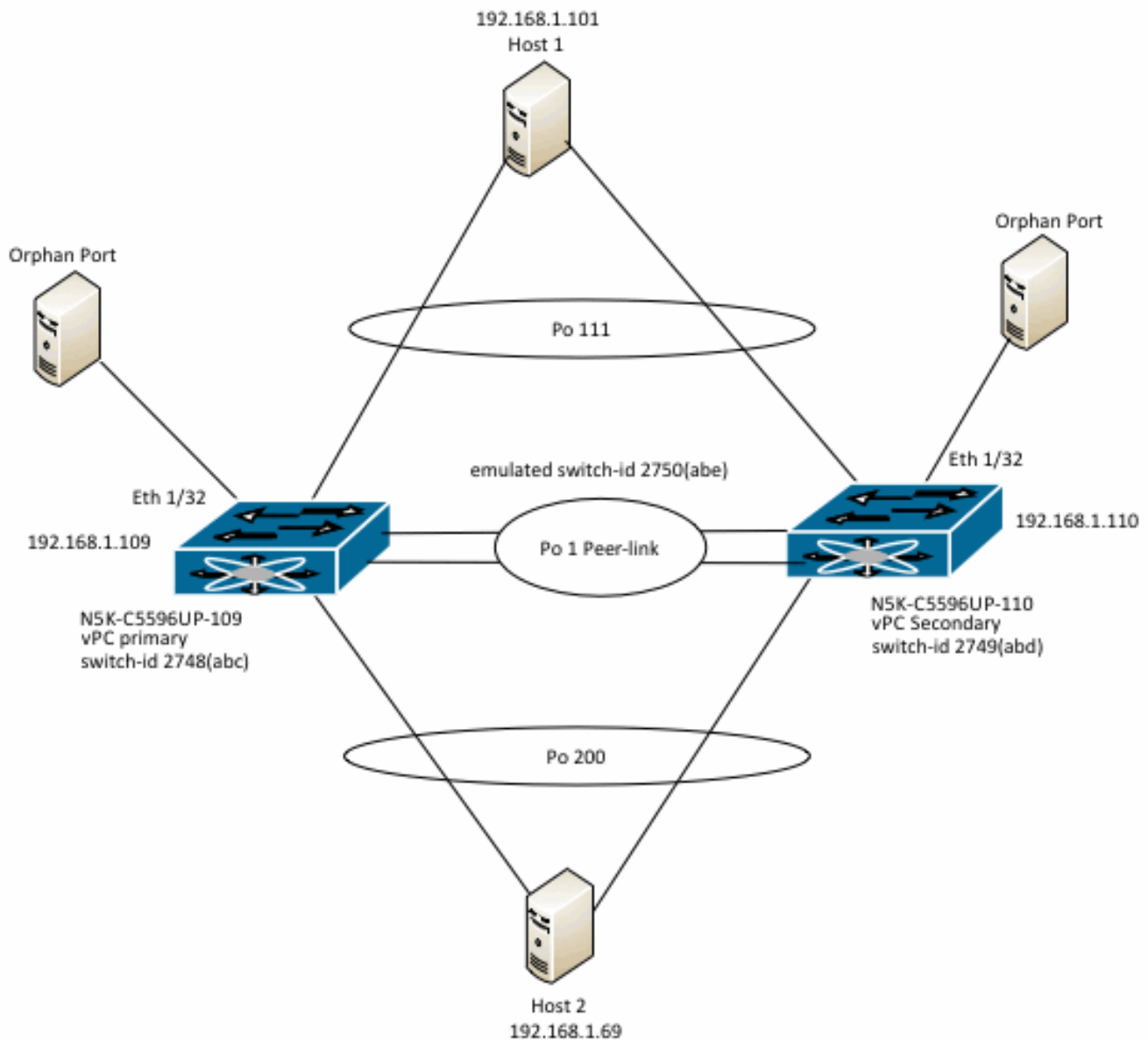
### 慣例

如需文件慣例的詳細資訊，請參閱[思科技術提示慣例](#)。

## 環路避免

對於進入vPC主交換機的廣播/未知單播/組播幀，將通過對等鏈路以256的FTAG傳送出去。當vPC輔助交換機通過vPC對等鏈路獲得此幀時，它會檢查FTAG，並且自其256以來，vPC輔助交換機只將其傳送到FTAG 256成員，該成員將僅是孤立埠。對於來自vPC輔助裝置的泛洪流量，將使用FTAG 257傳送該泛洪流量；當vPC主交換機收到此幀時，僅將收到的泛洪幀傳送到FTAG 257的成員，該成員將僅作為孤立埠。基於Carmel的交換機就是這樣實現vPC環路避免的。

為了深入研究基於L2MP/FTAG的泛洪幀在對等鏈路上的轉發，使用以下拓撲：



N5K-C5596UP-109和N5K-C5596UP-100是運行NX-OS 5.2(1)N1(2a)的Nexus 5596交換機的vPC對。N5K-C5596UP-109是vPC主交換機，N5K-C5596UP-110是vPC輔助交換機。埠通道1是vPC對等鏈路。圖中所示的IP地址屬於交換機的介面VLAN 1。主機1和主機2是通過VLAN 1中的vPC連線的Cisco交換機。在本文檔中，這些交換機稱為主機1和主機2。VLAN 1中有孤立埠連線到兩台交換機的Eth1/32。

以下是交換器的一些指令輸出：

N5K-C5596UP-109# show vpc

Legend:

(\*) - local vPC is down, forwarding via vPC peer-link

```
vPC domain id           : 2
Peer status             : peer adjacency formed ok
vPC keep-alive status   : peer is alive
Configuration consistency status : success
Per-vlan consistency status : success
Type-2 consistency status : success
vPC role                 : primary
Number of vPCs configured : 2
Peer Gateway             : Enabled
Peer gateway excluded VLANs : -
Dual-active excluded VLANs : -
Graceful Consistency Check : Enabled
Auto-recovery status    : Disabled
```

vPC Peer-link status

```
-----
id   Port   Status  Active vlans
-----
1    Po1    up      1
```

vPC status

```
-----
id     Port       Status Consistency Reason           Active vlans
-----
111    Po111        up     success    success                    1
200    Po200        up     success    success                    1
```

N5K-C5596UP-109# show platform fwm info l2mp myswid

switch id

switch id manager

```
-----
vpc role: 0
my primary switch id: 2748 (0xabc)
emu switch id: 2750 (0xabe)
peer switch id: 2749 (0xabd)
```

N5K-C5596UP-109# show vpc orphan-ports

Note:

-----::Going through port database. Please be patient.::-----

```
VLAN           Orphan Ports
-----
1              Eth1/32
```

N5K-C5596UP-110# show vpc

Legend:

(\*) - local vPC is down, forwarding via vPC peer-link

```

vPC domain id          : 2
Peer status            : peer adjacency formed ok
vPC keep-alive status  : peer is alive
Configuration consistency status : success
Per-vlan consistency status : success
Type-2 consistency status : success
vPC role               : secondary
Number of vPCs configured : 2
Peer Gateway           : Enabled
Peer gateway excluded VLANs : -
Dual-active excluded VLANs : -
Graceful Consistency Check : Enabled
Auto-recovery status   : Disabled
vPC Peer-link status

```

```

-----
id   Port   Status  Active vlans
--  -
1    Po1    up      1

```

vPC status

```

-----
id     Port      Status Consistency Reason           Active vlans
-----
111    Po111      up     success    success                1
200    Po200      up     success    success                1

```

N5K-C5596UP-110# show platform fwm info l2mp myswid

switch id

```

-----
switch id manager

```

```

-----
vpc role: 1
my primary switch id: 2749 (0xabd)
emu switch id: 2750 (0xabe)
peer switch id: 2748 (0xabc)

```

N5K-C5596UP-110# show vpc orphan-ports

Note:

```

-----::Going through port database. Please be patient.::-----

```

```

VLAN          Orphan Ports
-----
1             Eth1/32

```

Now lets check on default FTAGs used and its members.

N5K-C5596UP-109# show platform fwm info l2mp ftag all

L2MP FTAG

```

-----
ftag[0x9565b1c] id: 256 (0x100)
Topology ID: 0x111
Ftag flags: 0 (invalid ftag-flags)
Is stale: FALSE
ftag_mask[0x973eca4]
ifindex array:
0x160000c7 0x1600006e 0x1a01f000
0x15010000 0x15020000 0x1600007e
0x16000000

```

```
ifmap[0x88400fc]
ifmap idx 6: ref 1, lu_mcq_allocated 0, lu_mcq 15 (orig 15) 'not pruned'
ifmap idx 6: prune_ifmap 0, prune ref count 0, prune_unvisited 0
ifmap_idx 6: oifls_macg_ref_cnt 0, num_oifls 0
ifmap idx 6: ifs - sup-eth1 sup-eth2 Po200 Po1 Po111 Eth1/32 Po127
rpf: (0x0)
alternate: 0
intf:
Po1 (0x16000000)
ftag_ucast_index: 1
ftag_flood_index: 1
ftag_mcast_index: 32
ftag_alt_mcast_index: 48
```

```
-----
ftag[0x9565e3c] id: 257 (0x101)
Topology ID: 0x111
Ftag flags: 0 (invalid ftag-flags)
Is stale: FALSE
ftag_mask[0x95612b4]
ifindex array:
0x1a01f000 0x15010000 0x15020000
0x16000000
ifmap[0x883b81c]
ifmap idx 11: ref 1, lu_mcq_allocated 0, lu_mcq 14 (orig 14) 'not pruned'
ifmap idx 11: prune_ifmap 0, prune ref count 0, prune_unvisited 0
ifmap_idx 11: oifls_macg_ref_cnt 0, num_oifls 0
ifmap idx 11: ifs - sup-eth1 sup-eth2 Po1 Eth1/32
rpf: (0x0)
alternate: 1
intf:
Po1 (0x16000000)
ftag_ucast_index: 0
ftag_flood_index: -1
ftag_mcast_index: 0
ftag_alt_mcast_index: 0
```

```
-----
N5K-C5596UP-109#
```

```
N5K-C5596UP-110# show platform fwm info l2mp ftag all
L2MP FTAG
```

```
-----
ftag[0x956a99c] id: 256 (0x100)
Topology ID: 0x111
Ftag flags: 0 (invalid ftag-flags)
Is stale: FALSE
ftag_mask[0x98b4764]
ifindex array:
0x16000066 0x1a01f000 0x15010000
0x15020000 0x16000000
ifmap[0x9635adc]
ifmap idx 4: ref 1, lu_mcq_allocated 0, lu_mcq 15 (orig 15) 'not pruned'
ifmap idx 4: prune_ifmap 0, prune ref count 0, prune_unvisited 0
ifmap_idx 4: oifls_macg_ref_cnt 0, num_oifls 0
ifmap idx 4: ifs - sup-eth1 sup-eth2 Po103 Po1 Eth1/32
rpf: (0x0)
alternate: 1
intf:
Po1 (0x16000000)
ftag_ucast_index: 1
ftag_flood_index: -1
ftag_mcast_index: 32
ftag_alt_mcast_index: 48
```

```
-----
ftag[0x956acbc] id: 257 (0x101)
```

```

Topology ID: 0x111
Ftag flags: 0 (invalid ftag-flags)
Is stale: FALSE
ftag_mask[0x97359bc]
ifindex array:
0x160000c7 0x16000066 0x1600006e
0x1a01f000 0x15010000 0x15020000
0x1600007e 0x16000000
ifmap[0x95c624c]
ifmap idx 7: ref 1, lu_mcq_allocated 0, lu_mcq 16 (orig 16) 'not pruned'
ifmap idx 7: prune_ifmap 0, prune_ref count 0, prune_unvisited 0
ifmap_idx 7: oifls_macg_ref_cnt 0, num_oifls 0
ifmap idx 7: ifs - sup-eth1 sup-eth2 Po200 Po103 Po1 Po111 Eth1/32 Po127
rpf: (0x0)
alternate: 0
intf:
Po1 (0x16000000)
ftag_ucast_index: 0
ftag_flood_index: 1
ftag_mcast_index: 32
ftag_alt_mcast_index: 48

```

## 測試1:進入vPC輔助裝置的廣播ARP流量

從主機1(192.168.1.101)對不存在的IP 192.168.1.199執行ping操作。因此，主機1不斷發出廣播ARP請求，詢問「誰是192.168.1.199」。主機1碰巧將該廣播流量雜湊到vPC輔助交換機N5K-C5596UP-110，後者又將其泛洪到VLAN 1中的所有埠，包括vPC對等鏈路Po1。

擷取連線埠通道1的TX SPAN以檢視此ARP廣播 (FP術語中的多目標訊框) 的光纖路徑標頭。檢視此多目標幀的交換矩陣路徑報頭。

The image shows a Wireshark capture of network traffic. The top part is a packet list table with 5 entries, all identified as ARP broadcasts. The bottom part shows the detailed view of the first packet, highlighting the source MAC address (abe.00.0000) and the FTAG value (257).

No.	Time	Source	Destination	Protocol	Length	Identification	Info
1	2012-10-31 15:26:29.57482340	Cisco_Of:b3:01	Broadcast	ARP	84	84	Who has 192.168.1.199? Tell 192.168.1.101
2	2012-10-31 15:26:46.578376630	Cisco_Of:b3:01	Broadcast	ARP	84	84	Who has 192.168.1.199? Tell 192.168.1.101
3	2012-10-31 15:26:48.577568140	Cisco_Of:b3:01	Broadcast	ARP	84	84	Who has 192.168.1.199? Tell 192.168.1.101
4	2012-10-31 15:26:52.577405320	Cisco_Of:b3:01	Broadcast	ARP	84	84	Who has 192.168.1.199? Tell 192.168.1.101
5	2012-10-31 15:27:06.577478840	Cisco_Of:b3:01	Broadcast	ARP	84	84	Who has 192.168.1.199? Tell 192.168.1.101

Packet Details for Packet 1:

- Frame 1: 84 bytes on wire (672 bits), 84 bytes captured (672 bits)
- Ethernet II, Src: Cisco\_Of:b3:01 (54:7f:ee:0f:b3:01), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
- MAC Destination: Broadcast (ff:ff:ff:ff:ff:ff)
- Source: **abe.00.0000**
- 1100 0000 01... .. FTAG: 257
- Hardware Resolution: Protocol (request)
- Hardware type: Ethernet (1)
- Protocol type: IP (0x0800)
- Hardware wire: 6
- Protocol size: 4
- Opcode: request (1)
- Sender MAC address: Cisco\_Of:b3:01 (54:7f:ee:0f:b3:01)
- Sender IP address: 192.168.1.101 (192.168.1.101)
- Target MAC address: Broadcast (ff:ff:ff:ff:ff:ff)
- Target IP address: 192.168.1.199 (192.168.1.199)

- 由於幀通過vPC(vPC 111)進入，因此源交換機ID是abe.00.0000。
- 目的地是廣播MAC FF:FF:FF:FF:FF:FF
- FTAG是257。

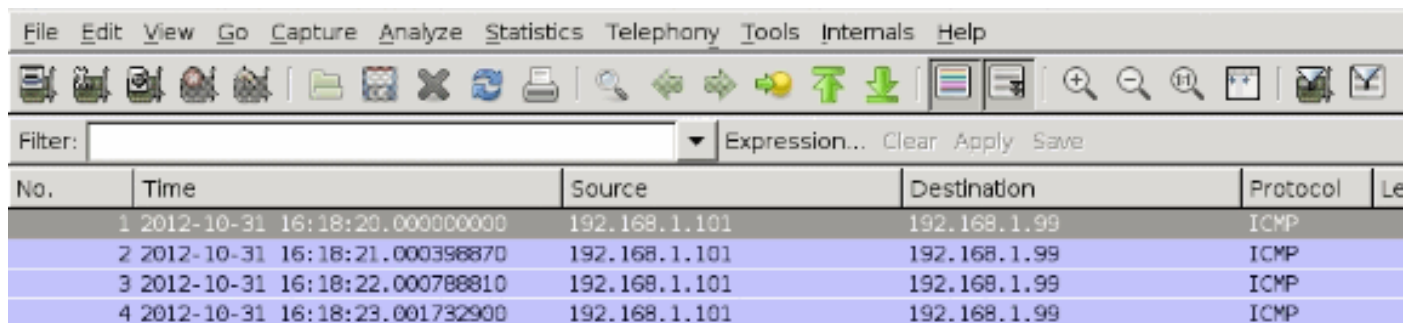
此幀進入vPC主交換機時，將檢查FTAG 257。因為只有孤立埠是FTAG 257的成員，所以此廣播

ARP 幀將只傳送到Eth 1/32。

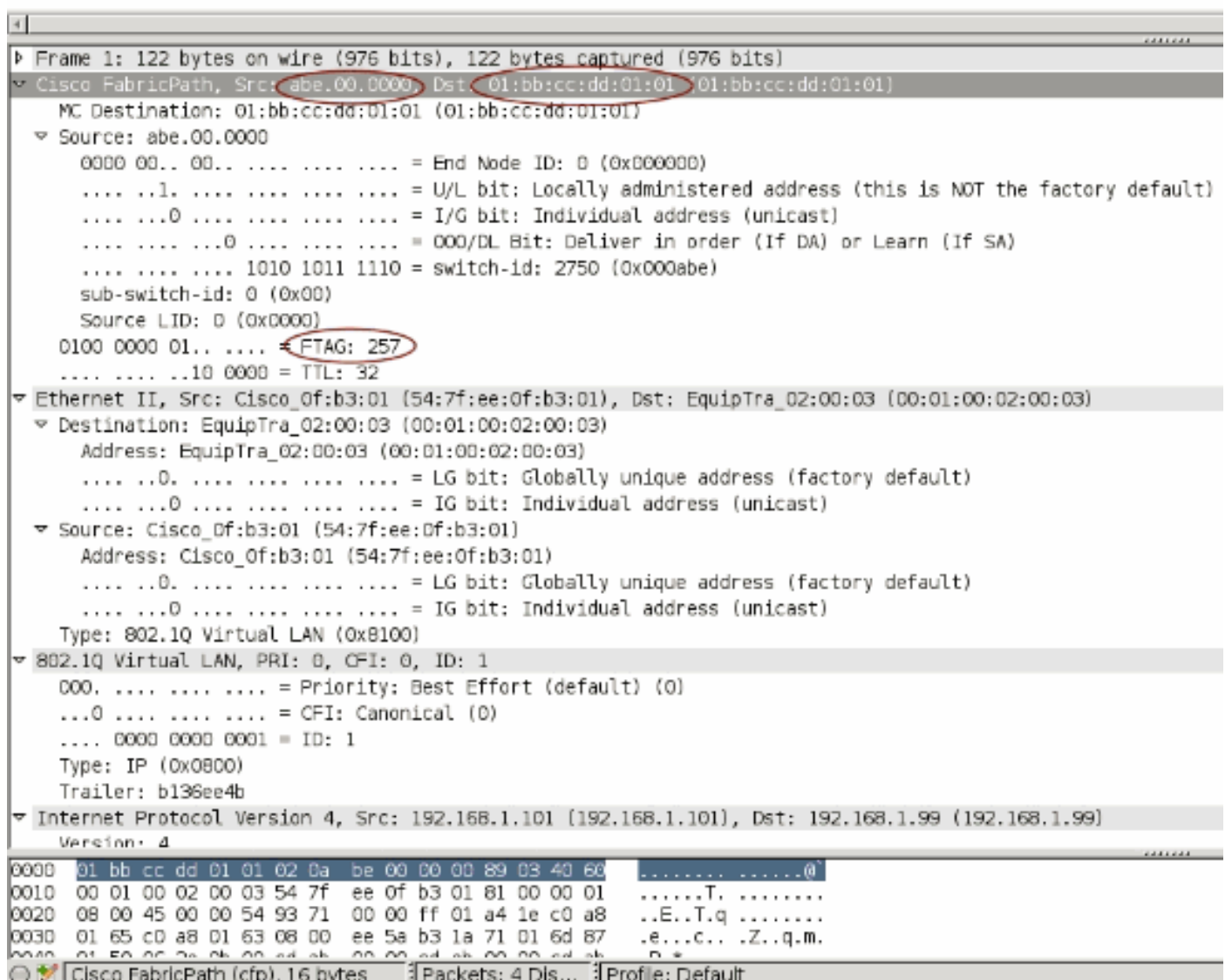
## 測試2:進入vPC輔助節點的未知單播幀

為了引入未知的單點傳播流量，在主機1上，我為192.168.1.99設定靜態ARP，靜態MAC為0001.0002.0003，並對192.168.1.99執行ping。ICMP回應請求到達N5K-C5596UP-110，因為它不知道MAC 0001.002.003的位置會將該幀泛洪到VLAN (包括對等鏈路)。

擷取連線埠通道1的TX SPAN來檢視此未知的單點傳播泛洪訊框 (FP術語中的多目的地訊框) 的光纖路徑標頭。檢視此多目標幀的交換矩陣路徑報頭。



No.	Time	Source	Destination	Protocol	Length
1	2012-10-31 16:18:20.000000000	192.168.1.101	192.168.1.99	ICMP	60
2	2012-10-31 16:18:21.000398870	192.168.1.101	192.168.1.99	ICMP	60
3	2012-10-31 16:18:22.000788810	192.168.1.101	192.168.1.99	ICMP	60
4	2012-10-31 16:18:23.001732900	192.168.1.101	192.168.1.99	ICMP	60



```
Frame 1: 122 bytes on wire (976 bits), 122 bytes captured (976 bits) on interface 0
Cisco FabricPath, Src: abe.00.0000, Dst: 01:bb:cc:dd:01:01 (01:bb:cc:dd:01:01)
  MC Destination: 01:bb:cc:dd:01:01 (01:bb:cc:dd:01:01)
  Source: abe.00.0000
    0000 00.. 00.. .. = End Node ID: 0 (0x000000)
    .... 1.. .. = U/L bit: Locally administered address (this is NOT the factory default)
    .... 0 .. = I/G bit: Individual address (unicast)
    .... 0 .. = OOO/DL Bit: Deliver in order (If DA) or Learn (If SA)
    .... 1010 1011 1110 = switch-id: 2750 (0x000abe)
    sub-switch-id: 0 (0x00)
    Source LID: 0 (0x0000)
    0100 0000 01.. .. = FTAG: 257
    .... 10 0000 = TTL: 32
  Ethernet II, Src: Cisco_Of:b3:01 (54:7f:ee:0f:b3:01), Dst: EquipTra_02:00:03 (00:01:00:02:00:03)
  Destination: EquipTra_02:00:03 (00:01:00:02:00:03)
  Address: EquipTra_02:00:03 (00:01:00:02:00:03)
    .... 0. .... = LG bit: Globally unique address (factory default)
    .... 0 .. = IG bit: Individual address (unicast)
  Source: Cisco_Of:b3:01 (54:7f:ee:0f:b3:01)
  Address: Cisco_Of:b3:01 (54:7f:ee:0f:b3:01)
    .... 0. .... = LG bit: Globally unique address (factory default)
    .... 0 .. = IG bit: Individual address (unicast)
  Type: 802.1Q Virtual LAN (0x8100)
  802.1Q Virtual LAN, PRI: 0, CFI: 0, ID: 1
    000. .... = Priority: Best Effort (default) (0)
    ...0 .... = CFI: Canonical (0)
    .... 0000 0000 0001 = ID: 1
  Type: IP (0x0800)
  Trailer: b136ee4b
  Internet Protocol Version 4, Src: 192.168.1.101 [192.168.1.101], Dst: 192.168.1.99 (192.168.1.99)
  Version: 4
  0000 01 bb cc dd 01 01 02 0a be 00 00 00 89 03 40 60 .....@
  0010 00 01 00 02 00 03 54 7f ee 0f b3 01 81 00 00 01 .....T.....
  0020 08 00 45 00 00 54 93 71 00 00 ff 01 a4 1e c0 a8 ..E..T.q.....
  0030 01 65 c0 a8 01 63 08 00 ee 5a b3 1a 71 01 6d 87 .e...c...Z..q.m.
  0040 01 50 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
```

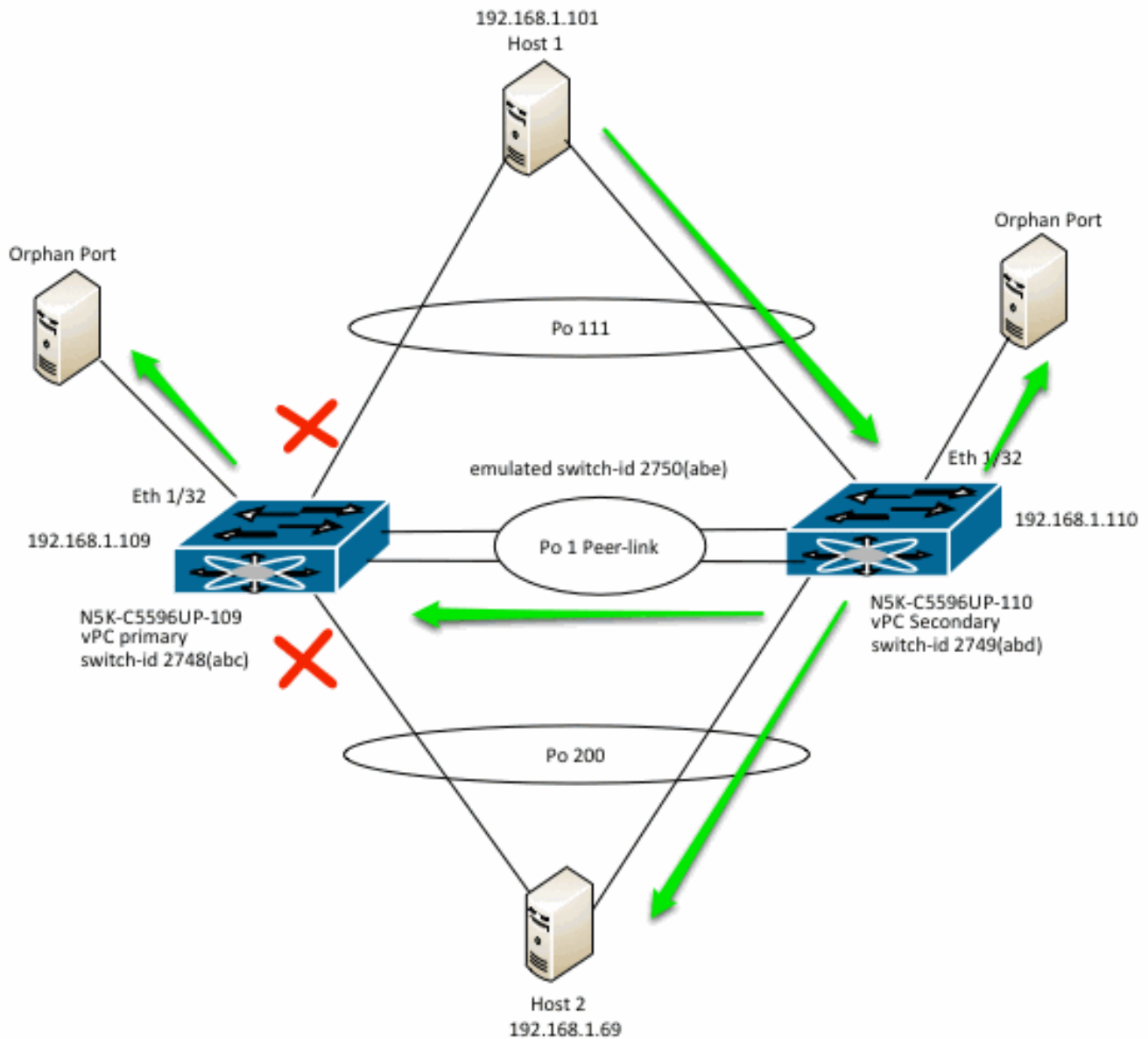
- 由於幀通過vPC(vPC 111)進入，因此源交換機ID是abe.00.0000
- 目的地是組播MAC 01:bb:cc:dd:01:01



- FTAG是257。

當此幀進入vPC主交換機時，它將檢查FTAG 257。因為只有孤立埠是FTAG 257的成員，所以此vPC主交換機將僅將該幀泛洪到孤立埠Eth 1/32。

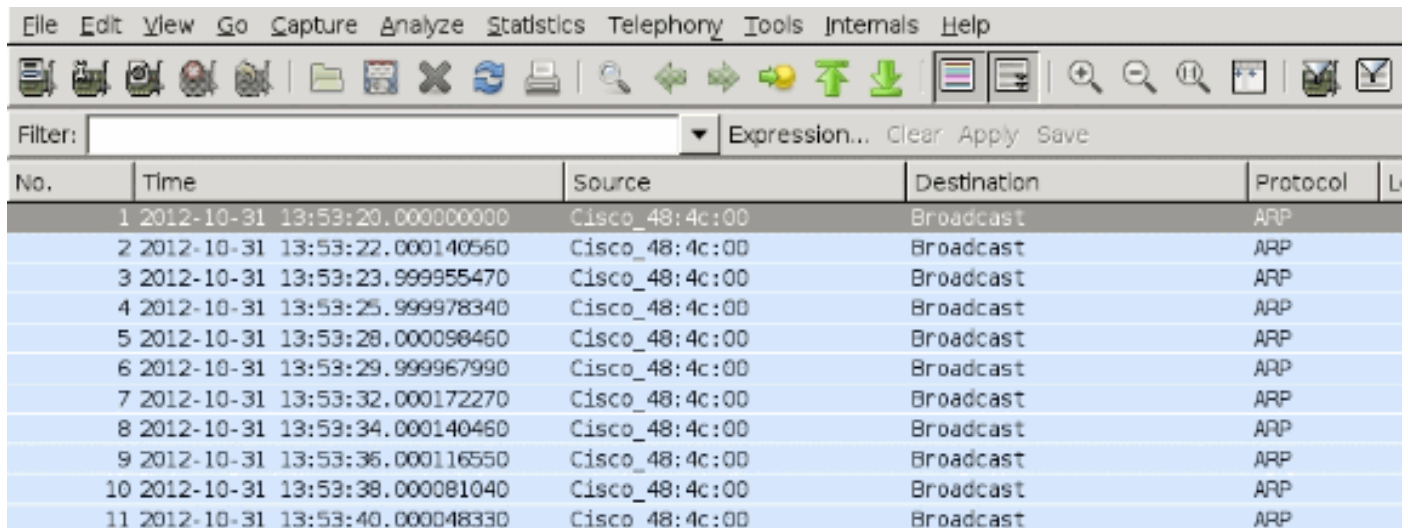
由於上述機制，以下是流入vPC輔助交換機的泛洪流量。



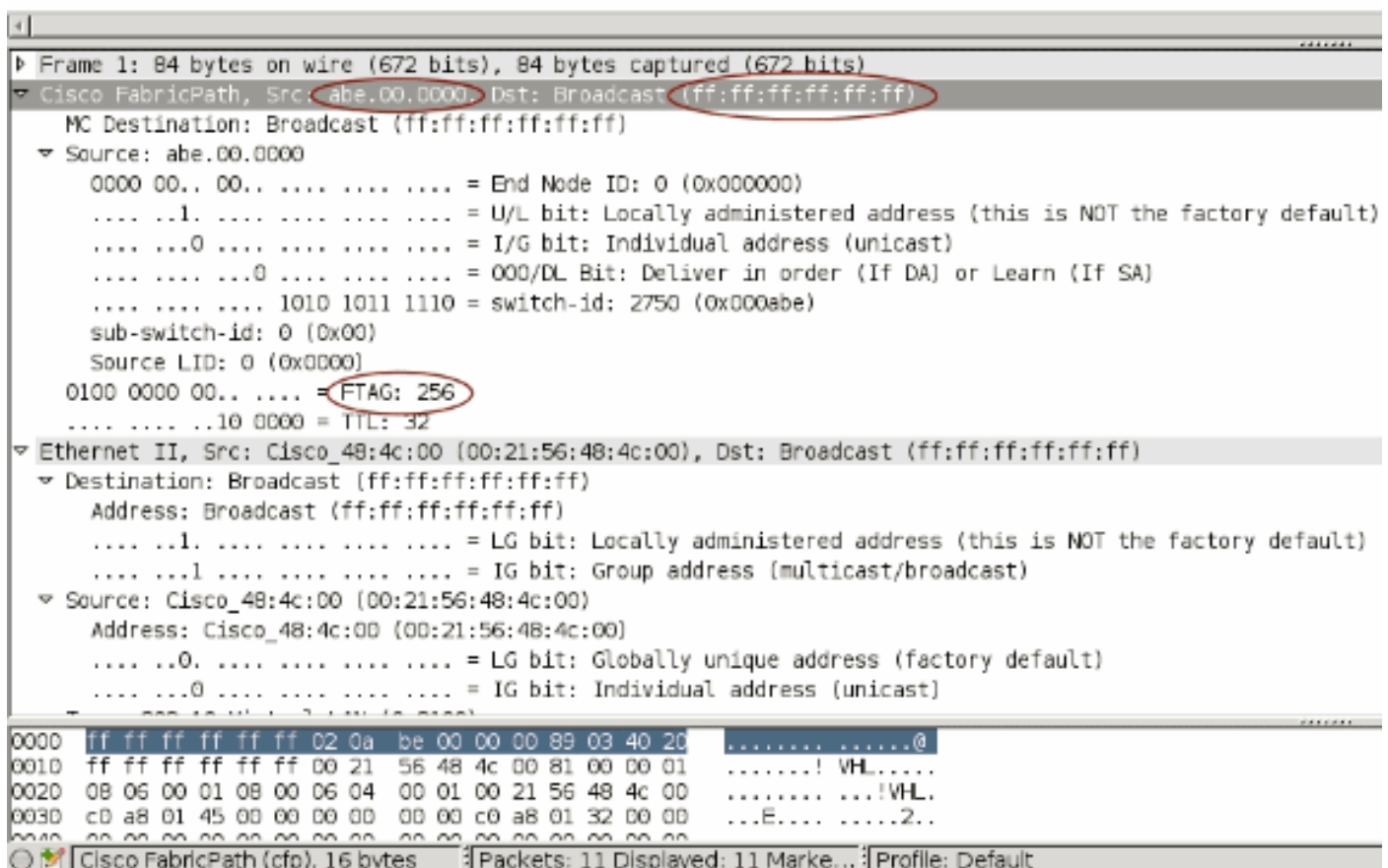
### 測試3:進入vPC主交換機的廣播ARP流量

從主機2(192.168.1.69)對不存在的IP 192.168.1.200執行ping操作。因此，主機2不斷發出廣播ARP請求，詢問「誰是192.168.1.200」。主機2碰巧將該廣播流量雜湊到vPC主交換機N5K-C5596UP-109，後者又將其泛洪到VLAN 1中的所有埠，包括vPC對等鏈路Po1。

擷取連線埠通道1的TX SPAN以檢視此ARP廣播 (FP術語中的多目標訊框) 的光纖路徑標頭。檢視此多目標幀的交換矩陣路徑報頭。



No.	Time	Source	Destination	Protocol
1	2012-10-31 13:53:20.000000000	Cisco_48:4c:00	Broadcast	ARP
2	2012-10-31 13:53:22.000140560	Cisco_48:4c:00	Broadcast	ARP
3	2012-10-31 13:53:23.999955470	Cisco_48:4c:00	Broadcast	ARP
4	2012-10-31 13:53:25.999978340	Cisco_48:4c:00	Broadcast	ARP
5	2012-10-31 13:53:28.000098460	Cisco_48:4c:00	Broadcast	ARP
6	2012-10-31 13:53:29.999967990	Cisco_48:4c:00	Broadcast	ARP
7	2012-10-31 13:53:32.000172270	Cisco_48:4c:00	Broadcast	ARP
8	2012-10-31 13:53:34.000140460	Cisco_48:4c:00	Broadcast	ARP
9	2012-10-31 13:53:36.000116550	Cisco_48:4c:00	Broadcast	ARP
10	2012-10-31 13:53:38.000081040	Cisco_48:4c:00	Broadcast	ARP
11	2012-10-31 13:53:40.000048330	Cisco_48:4c:00	Broadcast	ARP



```
Frame 1: 84 bytes on wire (672 bits), 84 bytes captured (672 bits) on interface 0
Cisco FabricPath, Src: abe.00.0000, Dst: Broadcast (ff:ff:ff:ff:ff:ff)
  MC Destination: Broadcast (ff:ff:ff:ff:ff:ff)
  Source: abe.00.0000
    0000 00.. 00.. .... = End Node ID: 0 (0x000000)
    .... .1. .... = U/L bit: Locally administered address (this is NOT the factory default)
    .... .0. .... = I/G bit: Individual address (unicast)
    .... .0. .... = 000/DL Bit: Deliver in order (If DA) or Learn (If SA)
    .... .1010 1011 1110 = switch-id: 2750 (0x000abe)
    sub-switch-id: 0 (0x00)
    Source LID: 0 (0x0000)
    0100 0000 00.. .... = FTAG: 256
    .... .10 0000 = TTL: 32
Ethernet II, Src: Cisco_48:4c:00 (00:21:56:48:4c:00), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
  Destination: Broadcast (ff:ff:ff:ff:ff:ff)
    Address: Broadcast (ff:ff:ff:ff:ff:ff)
    .... .1. .... = LG bit: Locally administered address (this is NOT the factory default)
    .... .1. .... = IG bit: Group address (multicast/broadcast)
  Source: Cisco_48:4c:00 (00:21:56:48:4c:00)
    Address: Cisco_48:4c:00 (00:21:56:48:4c:00)
    .... .0. .... = LG bit: Globally unique address (factory default)
    .... .0. .... = IG bit: Individual address (unicast)
```

0000 ff ff ff ff ff 02 0a be 00 00 00 89 03 40 20 .....@

0010 ff ff ff ff ff 00 21 56 48 4c 00 81 00 00 01 .....!VH.....

0020 08 06 00 01 08 00 06 04 00 01 00 21 56 48 4c 00 .....!VH.

0030 c0 a8 01 45 00 00 00 00 00 00 c0 a8 01 32 00 00 ...E.....2..

Cisco FabricPath (cfp), 16 bytes | Packets: 11 Displayed: 11 Marke... | Profile: Default

- 由於幀通過vPC(vPC 200)進入，因此源交換機ID是abe.00.0000
- 目的地是廣播MAC FF:FF:FF:FF:FF:FF
- FTAG是256。

當此幀進入vPC輔助交換機時，它將檢查FTAG 256。因為只有孤立埠是FTAG 256的成員，所以此廣播ARP幀將只傳送到Eth 1/32。

#### 測試4:進入vPC主交換機的未知單播幀

為了引入未知的單點傳播流量，在主機2上，使用靜態MAC 0003.0004.0005設定192.168.1.200的靜態ARP，並且ping 192.168.1.200。ICMP回應請求雜湊到vPC主N5K-C5596UP-109，因為它不知道MAC 0003.0004.0005的位置，所以它會將此幀泛洪到VLAN (包括對等鏈路)。擷取連線埠通道1的TX SPAN以檢視此未知單點傳播泛洪訊框 (FP術語中的多目標訊框) 的光纖路徑標頭。檢視此多目標幀的交換矩陣路徑報頭。

No.	Time	Source	Destination	Protocol
1	2012-11-01 11:52:09.494715320	192.168.1.69	192.168.1.200	ICMP
2	2012-11-01 11:52:11.494739360	192.168.1.69	192.168.1.200	ICMP

```

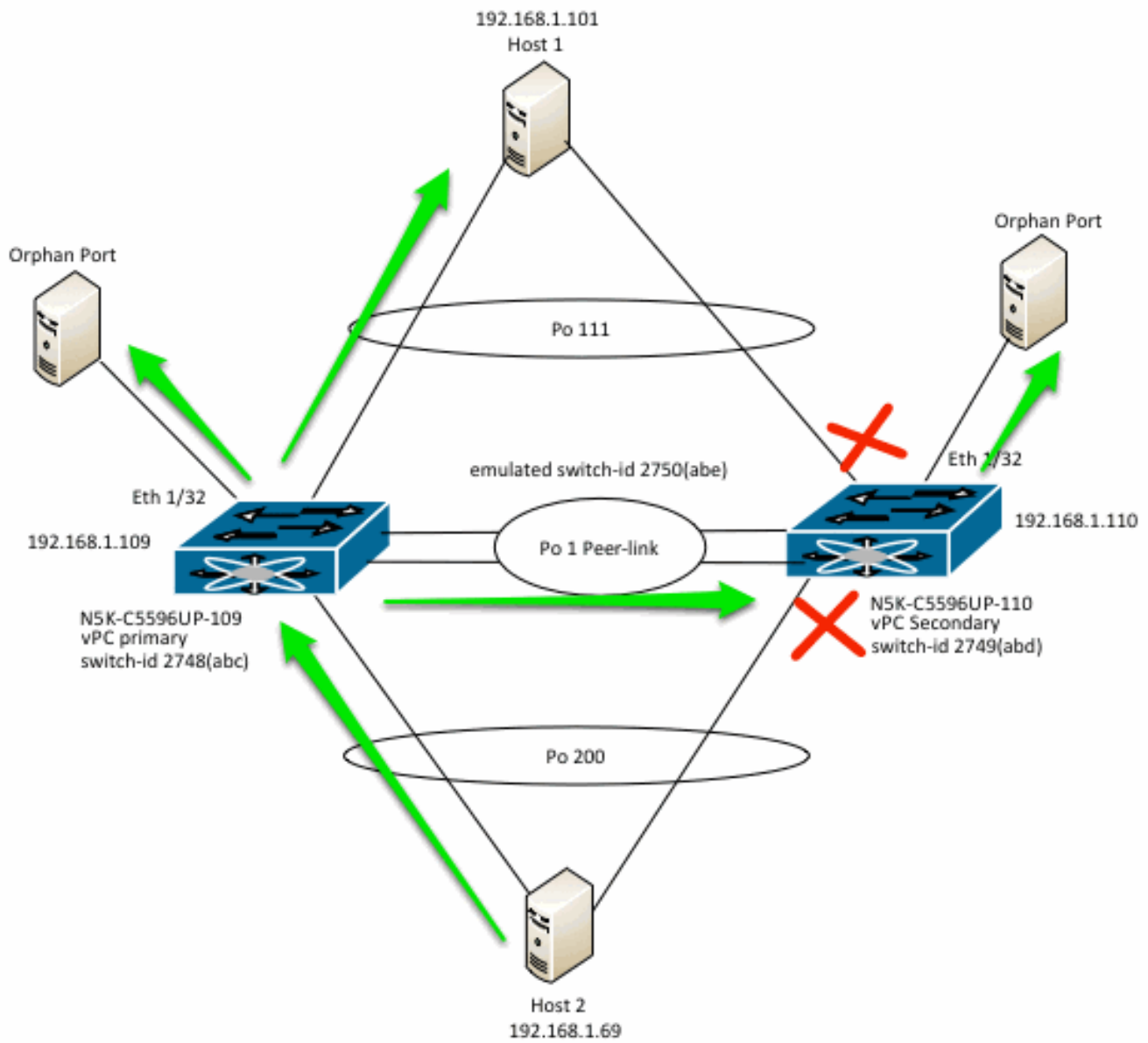
Frame 1: 138 bytes on wire (1104 bits), 138 bytes captured (1104 bits)
Cisco FabricPath, Src: abe.00.0000, Dst: 01:bb:cc:dd:01:01 (01:bb:cc:dd:01:01)
  MC Destination: 01:bb:cc:dd:01:01 (01:bb:cc:dd:01:01)
  Source: abe.00.0000
    0000 00.. 00.. .... = End Node ID: 0 (0x000000)
    .... .l. .... = U/L bit: Locally administered address (this is NOT the factory default)
    .... ..0 .... = I/G bit: Individual address (unicast)
    .... ....0 .... = 000/DL Bit: Deliver in order (If DA) or Learn (If SA)
    .... .... 1010 1011 1110 = switch-id: 2750 (0x000abe)
    sub-switch-id: 0 (0x00)
    Source LID: 0 (0x0000)
    0100 0000 00.. .... FTAG: 256
    .... .... ..10 0000 = TTL: 32
Ethernet II, Src: Cisco_48:4c:00 (00:21:56:48:4c:00), Dst: Barracud_04:00:05 (00:03:00:04:00:05)
  Destination: Barracud_04:00:05 (00:03:00:04:00:05)
    Address: Barracud_04:00:05 (00:03:00:04:00:05)
    .... ..0. .... = LG bit: Globally unique address (factory default)
    .... ....0 .... = IG bit: Individual address (unicast)
  Source: Cisco_48:4c:00 (00:21:56:48:4c:00)
    Address: Cisco_48:4c:00 (00:21:56:48:4c:00)
    .... ..0. .... = LG bit: Globally unique address (factory default)
    .... ....0 .... = IG bit: Individual address (unicast)
  Type: 802.1Q Virtual LAN (0x8100)
802.1Q Virtual LAN, PRI: 0, CFI: 0, ID: 1
  000. .... = Priority: Best Effort (default) (0)
  ...0 .... = CFI: Canonical (0)
  .... 0000 0000 0001 = ID: 1
  Type: IP (0x0800)
  Trailer: 42b8cb0e
Internet Protocol Version 4, Src: 192.168.1.69 (192.168.1.69), Dst: 192.168.1.200 (192.168.1.200)
  Version: 4
0000 01 bb cc dd 01 01 02 0a be 00 00 00 89 03 40 20 .....@
0010 00 03 00 04 00 05 00 21 56 48 4c 00 81 00 00 01 .....! VHL.....
0020 08 00 45 00 00 64 52 56 00 00 ff 01 e4 e4 c0 a8 ..E..dRV .....
0030 01 45 c0 a8 01 c8 08 00 ec 58 00 1d 01 fe 00 00 .E..... .X.....
0040 00 00 04 5e 03 7e ab ed ab ed ab ed ab ed ab ed 7d1
Cisco FabricPath (cftp), 16 bytes | Packets: ... | Profile: Default
  
```

- 由於幀通過vPC(vPC 200)進入，因此源交換機ID是abe.00.0000

- 目的地是組播MAC 01:bb:cc:dd:01:01，用於未知的單點傳播泛洪
- FTAG是256。

當此幀進入vPC輔助交換機時，它將檢查FTAG 257。因為只有孤立埠是FTAG 256的成員，所以此vPC主交換機將僅將該幀泛洪到孤立埠Eth 1/32。

由於上述機制，以下為流入vPC主交換機的泛洪流量。



## 相關資訊

- [技術支援與文件 - Cisco Systems](#)