vPC物件追蹤

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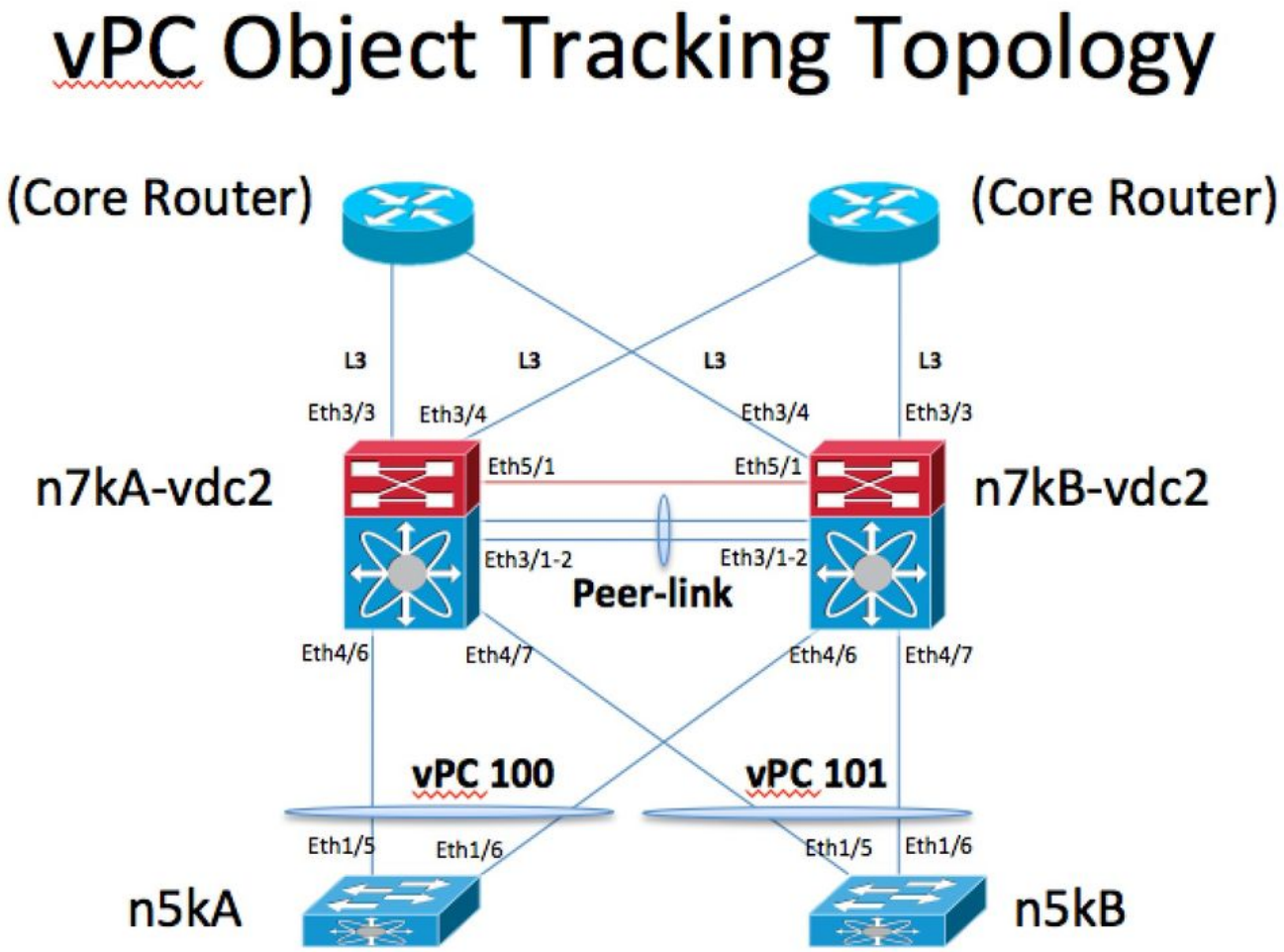
簡介

本文介紹vPC對象跟蹤、使用原因及工作原理。

vPC物件追蹤

網路圖表

以下是用於此演示的網路圖：



vPC對等鏈路是埠通道1。乙太網5/1是vPC對等保持連線鏈路。 每個N7K機箱上都有兩個通過L3 /30鏈路e3/3和e3/4連線的核心路由器。 N5KA和N5KB正在模擬vPC 100和vPC 101上連線的L2交換機vPC。N7KA是vPC主裝置。

基線Show命令

N7KA:

```
N7KA-vdc2# show run vpc

!Command: show running-config vpc
!Time: Thu Sep 26 19:51:57 2013

version 6.1(4)
feature vpc

vpc domain 102
  peer-keepalive destination 1.1.1.2 source 1.1.1.1 vrf vpc-keepalive
  peer-gateway
  track 1
  auto-recovery

interface port-channel1
  vpc peer-link

interface port-channel100
  vpc 100

interface port-channel101
  vpc 101

N7KA-vdc2# show run track

!Command: show running-config track
!Time: Thu Sep 26 19:51:59 2013

version 6.1(4)
track 1 list boolean or
  object 2
  object 3
  object 4
track 2 interface port-channel1 line-protocol
track 3 interface Ethernet3/3 line-protocol
track 4 interface Ethernet3/4 line-protocol


N7KA-vdc2# show vpc brief
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 102
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
Track object                      : 1
Peer Gateway                      : Enabled
```

```
Peer gateway excluded VLANs       : -
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
--------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ --------------------------------------------------
1    Po1    up     1

vPC status
----------------------------------------------------------------------
id   Port   Status Consistency Reason                     Active vlans
--   ----   ------ ----------- ------                     ------------
100  Po100  up     success     success                    1

101  Po101  up     success     success                    1

N7KA-vdc2# show track
Track 1
  List  Boolean or
  Boolean or is UP
  2 changes, last change 23:24:08
  Track List Members:
  object 4 UP
  object 3 UP
  object 2 UP
   Tracked by:
 vPCM                  102

Track 2
  Interface port-channel1 Line Protocol
  Line Protocol is UP
  1 changes, last change 23:26:59
  Tracked by:
    Track List  1

Track 3
  Interface Ethernet3/3 Line Protocol
  Line Protocol is UP
  3 changes, last change 23:26:50
  Tracked by:
    Track List  1

Track 4
  Interface Ethernet3/4 Line Protocol
  Line Protocol is UP
  3 changes, last change 23:26:48
  Tracked by:
    Track List  1

N7KA-vdc2#
```

N7KB:

```
N7KB-vdc2# show run vpc

!Command: show running-config vpc
!Time: Thu Sep 26 19:53:17 2013

version 6.1(4)
feature vpc
```

```
vpc domain 102
  peer-keepalive destination 1.1.1.1 source 1.1.1.2 vrf vpc-keepalive
  peer-gateway
  track 1
  auto-recovery

interface port-channel1
  vpc peer-link

interface port-channel100
  vpc 100

interface port-channel101
  vpc 101

N7KB-vdc2# show run track

!Command: show running-config track
!Time: Thu Sep 26 19:53:20 2013

version 6.1(4)
track 1 list boolean or
  object 2
  object 3
  object 4
track 2 interface port-channel1 line-protocol
track 3 interface Ethernet3/3 line-protocol
track 4 interface Ethernet3/4 line-protocol


N7KB-vdc2# show vpc brief
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 102
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
Track object                      : 1
Peer Gateway                      : Enabled
Peer gateway excluded VLANs       : -
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ --------------------------------------------------
1    Po1    up     1

vPC status
----------------------------------------------------------------------
id   Port   Status Consistency Reason                     Active vlans
--   ----   ------ ----------- ------                     ------------
100  Po100  up     success     success                    1

101  Po101  up     success     success                    1
```

```
N7KB-vdc2# show track
Track 1
  List  Boolean or
  Boolean or is UP
  2 changes, last change 23:25:51
  Track List Members:
  object 4 UP
  object 3 UP
  object 2 UP
   Tracked by:
 vPCM                   102

Track 2
  Interface port-channel1 Line Protocol
  Line Protocol is UP
  1 changes, last change 23:29:09
  Tracked by:
    Track List  1

Track 3
  Interface Ethernet3/3 Line Protocol
  Line Protocol is UP
  3 changes, last change 23:28:55
  Tracked by:
    Track List  1

Track 4
  Interface Ethernet3/4 Line Protocol
  Line Protocol is UP
  3 changes, last change 23:28:56
  Tracked by:
    Track List  1

N7KB-vdc2#
```

vPC對象跟蹤用於此類場景。 有一個M132模組用於vPC對等鏈路以及到核心的L3上行鏈路。 如果由於硬體故障而丟失M132模組，您將丟失vPC對等鏈路以及L3上行鏈路。 如果在vPC輔助盒(N7KB)上發生這種情況，這不會造成問題，因為運行中的主對等體將接管暫停運行中的輔助裝置上的vPC埠通道和Vlan介面。 問題在於運行中的主裝置(N7KA)發生硬體故障時。如果未使用對象跟蹤，我們將掛起N7KB上的所有vPC埠通道以及Vlan介面。 對等鏈路也會關閉。 在此案例中，您沒有將核心層流量路由到我們的vPC VLAN的方法。

對象跟蹤通過關閉運行主節點上的vPC來繞過這一點，這樣我們就不會進入這種場景，即關閉盒子上的Vlan介面和vPC埠通道，該盒子具有到核心的其餘上行鏈路。

此處您會看到使用ethanalyzer的vPC對等保持連線消息：

```
N7KA# ethanalyzer local interface inband capture-filter "host 1.1.1.1 and host 1.1.1.2" limit-
captured-frames 4
Capturing on inband
2013-09-26 20:01:09.629309      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  D
estination port: 3200
2013-09-26 20:01:09.954909      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  D
estination port: 3200
2013-09-26 20:01:10.639097      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  D
estination port: 3200
2013-09-26 20:01:10.954944      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  D
estination port: 3200
4 packets captured
N7KA#
```

```
N7KB# ethanalyzer local interface inband capture-filter "host 1.1.1.1 and host 1.1.1.2" limit-
captured-frames 4
Capturing on inband
2013-09-26 20:00:22.606593      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  D
estination port: 3200
2013-09-26 20:00:22.922517      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  D
estination port: 3200
2013-09-26 20:00:23.616427      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  D
estination port: 3200
2013-09-26 20:00:23.922557      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  D
estination port: 3200
4 packets captured
N7KB#
```

現在，您通過關閉模組電源在N7KA上模擬模組3故障：

```
N7KA# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
N7KA(config)# poweroff mod 3
N7KA(config)# end
N7KA#

2013 Sep 26 20:03:25 N7KA %PLATFORM-2-PFM_MODULE_POWER_OFF: Manual power-off of Module 3  from
Command Line Interface
```

日誌：

```
N7KA:

2013 Sep 26 20:03:28 N7KA-vdc2 %ETHPORT-5-IF_DOWN_INITIALIZING: Interface port-channel1 is down
(Initializing) 2013 Sep 26 20:03:28 N7KA-vdc2 %ETHPORT-5-IF_DOWN_MODULE_REMOVED: Interface
Ethernet3/3 is down (module removed) 2013 Sep 26 20:03:28 N7KA-vdc2 %ETHPORT-5-
IF_DOWN_MODULE_REMOVED: Interface Ethernet3/4 is down (module removed)
2013 Sep 26 20:03:28 N7KA-vdc2 %VPC-2-TRACK_INTFS_DOWN: In domain 102, vPC tracked interfaces
down, suspending all vPCs and keep-alive
2013 Sep 26 20:03:28 N7KA-vdc2 %ETHPORT-5-IF_DOWN_NONE: Interface port-channel101 is down (None)
2013 Sep 26 20:03:28 N7KA-vdc2 %ETHPORT-5-IF_DOWN_NONE: Interface port-channel100 is down (None)
2013 Sep 26 20:03:28 N7KA-vdc2 %ETH_PORT_CHANNEL-5-PORT_DOWN: port-channel101: Ethernet4/7 is
down 2013 Sep 26 20:03:28 N7KA-vdc2 %ETH_PORT_CHANNEL-5-PORT_DOWN: port-channel100: Ethernet4/6
is down
2013 Sep 26 20:03:28 N7KA-vdc2 %ETH_PORT_CHANNEL-5-FOP_CHANGED: port-channel101: first
operational port changed from Ethernet4/7 to none 2013 Sep 26 20:03:28 N7KA-vdc2
%ETH_PORT_CHANNEL-5-FOP_CHANGED: port-channel100: first operational port changed from
Ethernet4/6 to none
2013 Sep 26 20:03:28 N7KA-vdc2 %ETH_PORT_CHANNEL-5-PORT_DOWN: port-channel1: Ethernet3/1 is down
2013 Sep 26 20:03:28 N7KA-vdc2 %ETH_PORT_CHANNEL-5-PORT_DOWN: port-channel1: Ethernet3/2 is down
2013 Sep 26 20:03:28 N7KA-vdc2 %ETH_PORT_CHANNEL-5-FOP_CHANGED: port-channel1: first operational
port changed from Ethernet3/1 to none 2013 Sep 26 20:03:28 N7KA-vdc2 %ETHPORT-5-
IF_DOWN_PORT_CHANNEL_MEMBERS_DOWN: Interface port-channel1 is down (No operational members)
N7KB: 2013 Sep 26 20:02:39 N7KB-vdc2 %ETH_PORT_CHANNEL-5-FOP_CHANGED: port-channel1: first
operational port changed from Ethernet3/1 to none 2013 Sep 26 20:02:40 N7KB-vdc2
%ETH_PORT_CHANNEL-5-PORT_DOWN: port-channel1: Ethernet3/2 is down 2013 Sep 26 20:02:40 N7KB-vdc2
%ETHPORT-5-IF_DOWN_LINK_FAILURE: Interface Ethernet3/2 is down (Link failure)
2013 Sep 26 20:02:45 N7KB-vdc2 %VPC-2-PEER_KEEP_ALIVE_RECV_FAIL: In domain 102, VPC peer keep-
alive receive has failed
2013 Sep 26 20:02:45 N7KB-vdc2 %ETHPORT-5-IF_DOWN_PORT_CHANNEL_MEMBERS_DOWN: Interface port-
channel1 is down (No operational members)
2013 Sep 26 20:02:45 N7KB-vdc2 %ETH_PORT_CHANNEL-5-PORT_DOWN: port-channel1: Ethernet3/1 is down
2013 Sep 26 20:02:45 N7KB-vdc2 %ETHPORT-5-IF_DOWN_LINK_FAILURE: Interface Ethernet3/1 is down
(Link failure) 2013 Sep 26 20:02:45 N7KB-vdc2 %ETHPORT-5-IF_DOWN_PORT_CHANNEL_MEMBERS_DOWN:
```

```
Interface port-channel1 is down (No operational members)
```

現在您處於此狀態。 N7KA是vPC主要對等體，但它停止向N7KB傳送vPC對等體保持連線消息，以便N7KB不會掛起。 N7KB是唯一具有上行鏈路的系統。

> **附註**：N7KB上的E3/4連線到N7KA上的另一個VDC，這也是它發生故障的原因。 重點是，您已在N7KB上跟蹤介面，而在N7KA上未跟蹤，因此它會停止在對等保持連線鏈路上向N7KB傳送消息。

N7KA的Ethanalyzer輸出：

（請注意，在TRACK_INTFS_DOWN系統日誌之後，我們不再向N7KB傳送對等加密鎖，我們僅從1.1.1.2的N7KB接收它們）

```
2013-09-26 20:03:23.684887      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:03:23.685766      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:03:24.684863 1.1.1.1 -> 1.1.1.2 UDP Source port: 3200 Destination port: 3200 2013-
09-26 20:03:24.685580 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013 Sep
26 20:03:25 N7KA-vdc2 %$ VDC-2 %$ %PLATFORM-2-PFM_MODULE_POWER_OFF: Manual power-off of Module 3
from Command Line Interface 2013 Sep 26 20:03:25 N7KA %$ VDC-1 %$ %PLATFORM-2-
PFM_MODULE_POWER_OFF: Manual power-off of Module 3 from Command Line Interface 2013-09-26
20:03:25.684869 1.1.1.1 -> 1.1.1.2 UDP Source port: 3200 Destination port: 3200 2013-09-26
20:03:25.685771 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200
2013-09-26 20:03:26.684835 1.1.1.1 -> 1.1.1.2 UDP Source port: 3200 Destination port: 3200 2013-
09-26 20:03:26.685716 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200
2013-09-26 20:03:27.690661 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013-
09-26 20:03:27.691367 1.1.1.1 -> 1.1.1.2 UDP Source port: 3200 Destination port: 3200 2013 Sep
26 20:03:28 N7KA-vdc2 %$ VDC-2 %$ %PLATFORM-2-MOD_PWRDN: Module 3 powered down (Serial number
JAF1703ALTD) 2013 Sep 26 20:03:28 N7KA %$ VDC-1 %$ %PLATFORM-2-MOD_PWRDN: Module 3 powered down
(Serial number JAF1703ALTD) 2013 Sep 26 20:03:28 N7KA-vdc2 %$ VDC-2 %$ %VPC-2-TRACK_INTFS_DOWN:
In domain 102, vPC tracked interfaces down, suspending all vPCs and keep-alive 2013-09-26
20:03:28.700594 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013-09-26
20:03:29.700538 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013-09-26
20:03:30.700603 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013-09-26
20:03:31.710665 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013-09-26
20:03:32.720601 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013-09-26
20:03:33.715295 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013-09-26
20:03:34.713112 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200 2013-09-26
20:03:35.713177 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200
```

Ethanalyzer輸出(N7KB):

```
2013-09-26 20:02:36.651007      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:36.651534      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:02:37.651053      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:37.651644      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:02:38.650967      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:38.651579      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
```

```
2013-09-26 20:02:39.656523      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:39.657500      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200

(Here we stop receiving keepalive messages from N7KA or 1.1.1.1):

2013-09-26 20:02:40.666531      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:41.666442      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:42.666479      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:43.676461      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:44.686478      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013 Sep 26 20:02:45 N7KB-vdc2 %$ VDC-2 %$ %VPC-2-PEER_KEEP_ALIVE_RECV_FAIL: In domain 102, VPC
peer keep-alive receive has failed

2013-09-26 20:02:45.681050      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:46.678911      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:47.678918      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:02:48.678961      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
```

N7KA:

```
N7KA-vdc2# sh vpc brief
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 102
Peer status                       : peer link is down
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
Track object                      : 1
Peer Gateway                      : Enabled
Peer gateway excluded VLANs       : -
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ --------------------------------------------------
1    Po1    down   -

vPC status
----------------------------------------------------------------------
id   Port   Status Consistency Reason                     Active vlans
--   ----   ------ ----------- ------                     ------------
100  Po100  down   success     success                    -
```

```
101  Po101  down   success     success                     -

N7KA-vdc2# show track
Track 1
  List  Boolean or
  Boolean or is DOWN
  3 changes, last change 00:20:50
  Track List Members:
  object 4 DOWN
  object 3 DOWN
  object 2 DOWN
   Tracked by:
 vPCM                   102

Track 2
  Interface port-channel1 Line Protocol
  Line Protocol is DOWN
  2 changes, last change 00:20:50
  Tracked by:
    Track List  1

Track 3
  Interface Ethernet3/3 Line Protocol
  Line Protocol is DOWN
  4 changes, last change 00:20:50
  Tracked by:
    Track List  1

Track 4
  Interface Ethernet3/4 Line Protocol
  Line Protocol is DOWN
  4 changes, last change 00:20:50
  Tracked by:
    Track List  1

N7KA-vdc2#
```

N7KB:

```
N7KB-vdc2# sh vpc brief
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 102
Peer status                       : peer link is down
vPC keep-alive status             : peer is alive
Configuration consistency status  : success
Per-vlan consistency status       : success
Type-2 consistency status         : success
vPC role                          : secondary, operational primary
Number of vPCs configured         : 2
Track object                      : 1
Peer Gateway                      : Enabled
Peer gateway excluded VLANs       : -
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ --------------------------------------------------
```

```
1    Po1    down   -

vPC status
----------------------------------------------------------------------
id   Port   Status Consistency Reason                     Active vlans
--   ----   ------ ----------- ------                     ------------
100  Po100  up     success     success                    1

101  Po101  up     success     success                    1

N7KB-vdc2# sh track
Track 1
  List  Boolean or
  Boolean or is UP
  2 changes, last change 23:57:10
  Track List Members:
  object 4 DOWN
  object 3 UP
  object 2 DOWN
   Tracked by:
 vPCM                   102

Track 2
  Interface port-channel1 Line Protocol
  Line Protocol is DOWN
  2 changes, last change 00:22:04
  Tracked by:
    Track List  1

Track 3
  Interface Ethernet3/3 Line Protocol
  Line Protocol is UP
  3 changes, last change 1d00h
  Tracked by:
    Track List  1

Track 4
  Interface Ethernet3/4 Line Protocol
  Line Protocol is DOWN
  4 changes, last change 00:22:04
  Tracked by:
    Track List  1

N7KB-vdc2#
```

現在您可以還原安裝程式：

```
N7KA# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
N7KA(config)# no poweroff mod 3
N7KA(config)# end
N7KA#

2013 Sep 26 20:26:53 N7KA %PLATFORM-2-PFM_MODULE_POWER_ON: Manual power-on of Module 3  from
Command Line Interface
2013 Sep 26 20:26:56 N7KA %PLATFORM-2-MOD_DETECT: Module 3 detected (Serial number JAF1703ALTD)
Module-Type 10 Gbps Ethernet XL Module Model N7K-M132XP-12L
2013 Sep 26 20:26:56 N7KA %PLATFORM-2-MOD_PWRUP: Module 3 powered up (Serial number JAF1703ALTD)
2013 Sep 26 20:26:56 N7KA %PLATFORM-5-MOD_STATUS: Module 3 current-status is
MOD_STATUS_POWERED_UP
```

N7KA:

```
N7KA-vdc2# sh vpc brief
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 102
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, operational secondary
Number of vPCs configured         : 2
Track object                      : 1
Peer Gateway                      : Enabled
Peer gateway excluded VLANs       : -
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ --------------------------------------------------
1    Po1    up     1

vPC status
----------------------------------------------------------------------------
id   Port   Status Consistency Reason                     Active vlans
--   ----   ------ ----------- ------                     ------------
100  Po100  up     success     success                    1

101  Po101  up     success     success                    1

N7KA-vdc2# sh track
Track 1
  List  Boolean or
  Boolean or is UP
  4 changes, last change 00:01:44
  Track List Members:
  object 4 UP
  object 3 UP
  object 2 UP
   Tracked by:
 vPCM                  102

Track 2
  Interface port-channel1 Line Protocol
  Line Protocol is UP
  3 changes, last change 00:01:40
  Tracked by:
    Track List  1

Track 3
  Interface Ethernet3/3 Line Protocol
  Line Protocol is UP
  5 changes, last change 00:01:43
  Tracked by:
    Track List  1

Track 4
  Interface Ethernet3/4 Line Protocol
  Line Protocol is UP
```

```
  5 changes, last change 00:01:44
  Tracked by:
    Track List  1

N7KA-vdc2#
```

N7KB:

```
N7KB-vdc2# sh vpc brief
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 102
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, operational primary
Number of vPCs configured         : 2
Track object                      : 1
Peer Gateway                      : Enabled
Peer gateway excluded VLANs       : -
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ --------------------------------------------------
1    Po1    up     1

vPC status
----------------------------------------------------------------------------
id   Port   Status Consistency Reason                     Active vlans
--   ----   ------ ----------- ------                     ------------
100  Po100  up     success     success                    1

101  Po101  up     success     success                    1

N7KB-vdc2# sh track
Track 1
  List  Boolean or
  Boolean or is UP
  2 changes, last change 1d00h
  Track List Members:
  object 4 UP
  object 3 UP
  object 2 UP
   Tracked by:
 vPCM                  102

Track 2
  Interface port-channel1 Line Protocol
  Line Protocol is UP
  3 changes, last change 00:02:07
  Tracked by:
    Track List  1

Track 3
  Interface Ethernet3/3 Line Protocol
  Line Protocol is UP
```

```
  3 changes, last change 1d00h
  Tracked by:
    Track List  1

Track 4
  Interface Ethernet3/4 Line Protocol
  Line Protocol is UP
  5 changes, last change 00:02:09
  Tracked by:
    Track List  1

N7KB-vdc2#
```

有關vPC對等保持連線故障的詳細資訊：

重新運行測試以檢視對等keepalive鏈路發生的情況。

雙向傳送keepalive — 目前一切正常，正常運行：

```
2013-09-26 20:32:12.532319      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:12.533083      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:13.532485 1.1.1.1 -> 1.1.1.2 UDP Source port: 3200 Destination port: 3200 2013-
09-26 20:32:13.533147 1.1.1.2 -> 1.1.1.1 UDP Source port: 3200 Destination port: 3200
```

現在再次關閉N7KA上的M132模組3:

```
2013 Sep 26 20:32:14 N7KA %$ VDC-1 %$ %PLATFORM-2-PFM_MODULE_POWER_OFF: Manual power-off of
Module 3  from Command Line Interface
2013 Sep 26 20:32:14 N7KA-vdc3 %$ VDC-3 %$ %PLATFORM-2-PFM_MODULE_POWER_OFF: Manual power-off of
Module 3  from Command Line Interface
2013 Sep 26 20:32:14 N7KA-vdc2 %$ VDC-2 %$ %PLATFORM-2-PFM_MODULE_POWER_OFF: Manual power-off of
Module 3  from Command Line Interface

2013-09-26 20:32:14.532364      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:14.533217      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:32:15.532453      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:15.533158      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:32:16.532452      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:16.536224      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013 Sep 26 20:32:17 N7KA %$ VDC-1 %$ %PLATFORM-2-MOD_PWRDN: Module 3 powered down (Serial
number JAF1703ALTD)
2013 Sep 26 20:32:17 N7KA-vdc3 %$ VDC-3 %$ %PLATFORM-2-MOD_PWRDN: Module 3 powered down (Serial
number JAF1703ALTD)
2013 Sep 26 20:32:16 N7KA-vdc2 %$ VDC-2 %$ %VPC-2-TRACK_INTFS_DOWN: In domain 102, vPC tracked
interfaces down, suspending all vPCs and keep-alive
2013 Sep 26 20:32:17 N7KA-vdc2 %$ VDC-2 %$ %PLATFORM-2-MOD_PWRDN: Module 3 powered down (Serial
number JAF1703ALTD)
```

現在您看到只有N7KB(1.1.1.2)正在向N7KA(1.1.1.1)傳送keepalive消息：

```
2013-09-26 20:32:17.549161      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:18.549352      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:19.549294      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:20.549358      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:21.549303      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:32:22.549991      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
```

此處您會看到N7KB上的狀態顯示對等體keepalive已失敗：

```
N7KB-vdc2# sh vpc brief
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 102
Peer status                       : peer link is down
vPC keep-alive status             : peer is not reachable through peer-keepalive
Configuration consistency status  : success
Per-vlan consistency status       : success
Type-2 consistency status         : success
vPC role                          : secondary, operational primary
Number of vPCs configured         : 2
Track object                      : 1
Peer Gateway                      : Enabled
Peer gateway excluded VLANs       : -
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ --------------------------------------------------
1    Po1    down   -

vPC status
----------------------------------------------------------------------------
id   Port   Status Consistency Reason                     Active vlans
--   ----   ------ ----------- ------                     ------------
100  Po100  up     success     success                    1

101  Po101  up     success     success                    1

N7KB-vdc2#
```

現在，經過短時間後（90秒），您又開始收到來自N7KA的對等保持連線消息：

```
<snip>
2013-09-26 20:33:42.630255      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:33:43.630199      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:33:44.630263      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:33:45.640201      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
```

```
3200
2013-09-26 20:33:46.650262      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:33:47.652445      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:33:47.660318      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:33:48.652768      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:33:48.653347      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:33:49.652409      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:33:49.652705      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:33:50.652423      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:33:50.652773      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200

2013-09-26 20:33:51.652401      1.1.1.1 -> 1.1.1.2      UDP Source port: 3200  Destination port:
3200
2013-09-26 20:33:51.652839      1.1.1.2 -> 1.1.1.1      UDP Source port: 3200  Destination port:
3200
```

然後您會看到N7KB上的最新狀態（顯示對等體處於活動狀態）：

```
N7KB-vdc2# sh vpc brief
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 102
Peer status                       : peer link is down
vPC keep-alive status             : peer is alive
Configuration consistency status  : success
Per-vlan consistency status       : success
Type-2 consistency status         : success
vPC role                          : secondary, operational primary
Number of vPCs configured         : 2
Track object                      : 1
Peer Gateway                      : Enabled
Peer gateway excluded VLANs       : -
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ --------------------------------------------------
1    Po1    down   -

vPC status
----------------------------------------------------------------------
id   Port   Status Consistency Reason                     Active vlans
--   ----   ------ ----------- ------                     ------------
100  Po100  up     success     success                    1
```

```
101   Po101  up      success     success                   1

N7KB-vdc2#
```