Tracciamento oggetti vPC

Sommario

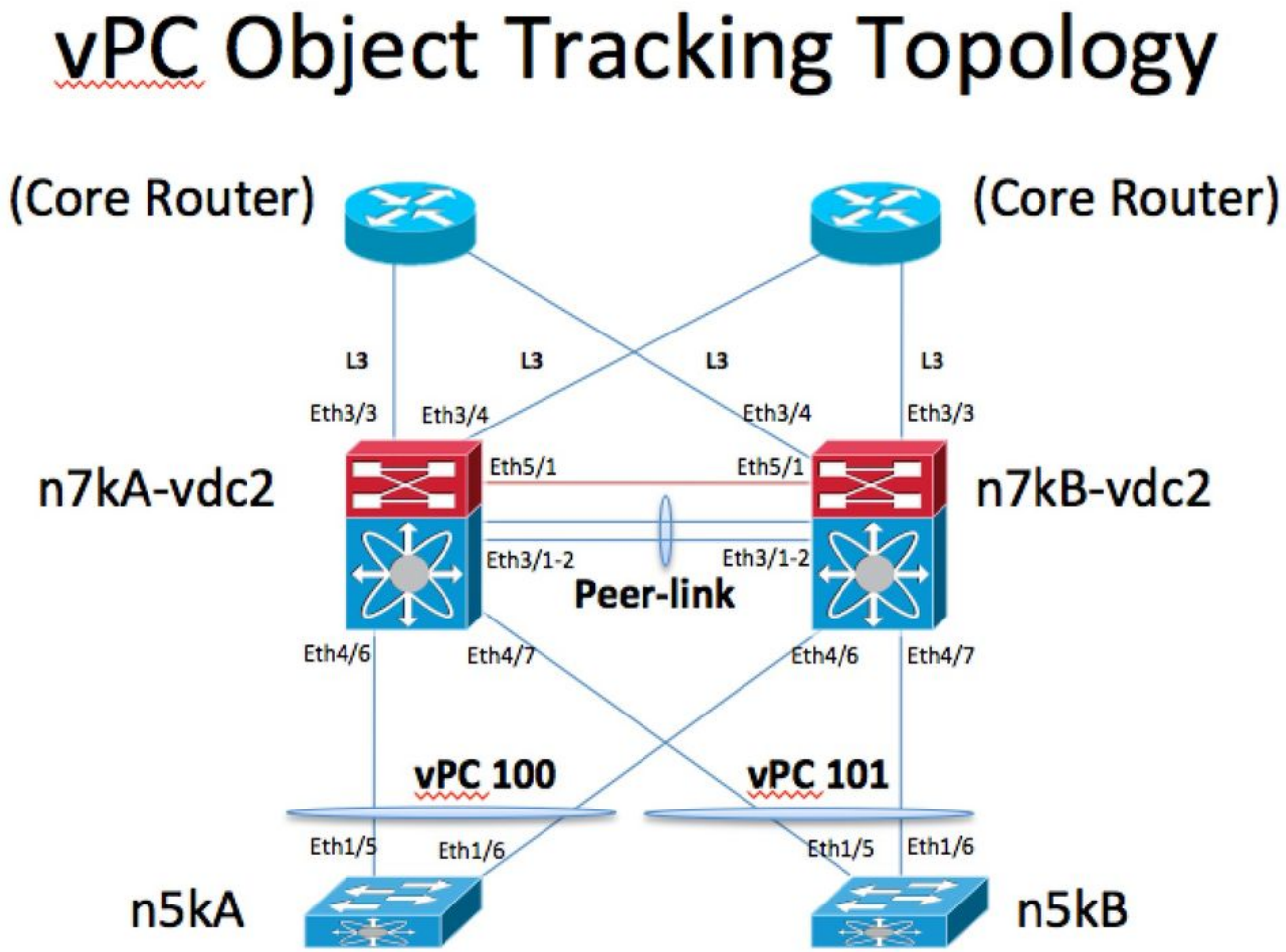
Introduzione

In questo documento viene descritto il tracciamento degli oggetti vPC, il motivo per cui viene utilizzato e il modo in cui funziona.

Tracciamento oggetti vPC

Esempio di rete

Di seguito è riportato il diagramma di rete utilizzato per la dimostrazione:



Il collegamento peer vPC è Port-channel 1. Ethernet 5/1 è il collegamento peer-keepalive vPC. Ci sono due router core connessi tramite L3 /30 collegamenti e3/3 ed e3/4 su ogni confezione N7K. N5KA e N5KB simulano switch L2 vPC connessi su vPC 100 e vPC 101. N7KA è il dispositivo principale vPC.

Comandi di visualizzazione della linea di base

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#
```

N7 KB:

```
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#
```

In uno scenario di questo tipo viene utilizzato vPC Object Tracking. È disponibile un modulo M132 utilizzato per il collegamento peer vPC e gli uplink L3 al core. Nel caso in cui si debba perdere il modulo M132 a causa di un guasto hardware, si perderebbe il collegamento peer vPC e gli uplink L3. Se ciò dovesse accadere sulla scatola secondaria vPC (N7KB), non ci sarebbero problemi in quanto il peer primario operativo prenderebbe il controllo della sospensione dei canali della porta vPC e delle interfacce Vlan sulla porta secondaria operativa. Il problema si verifica in caso di errore hardware sul dispositivo primario operativo (N7KA). Se non si utilizza la registrazione degli oggetti, verranno sospesi tutti i canali della porta vPC su N7KB e le interfacce VLAN. Anche il collegamento peer non sarebbe attivo. In questo scenario, non sarebbe possibile instradare il traffico di base sulle VLAN vPC.

Object Tracking risolve il problema riducendo il vPC sul sistema operativo primario in modo da non entrare in questo scenario in cui le interfacce Vlan e i canali delle porte vPC vengono abbassati sul sistema con gli uplink rimanenti sul core.

Di seguito vengono visualizzati i messaggi keepalive peer vPC tramite l'analizzatore di etica:

```
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#
```

Si simula ora il guasto del modulo 3 su N7KA spegnendo il modulo:

```
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
```

Registri:

```
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)
```

Ora sei rimasto in questo stato. N7KA è il peer primario vPC, ma interrompe l'invio di messaggi keepalive peer vPC a N7KB in modo che N7KB non venga sospeso. N7KB è l'unico sistema con uplink attivi.

> **Nota:** e3/4 su N7KB si connette a un altro VDC su N7KA, motivo per cui è anche andato giù. Il punto è che avete rintracciato le interfacce su N7KB e nessuna su N7KA, quindi smette di inviare messaggi a N7KB sul collegamento peer-keepalive.

Output di etanalyzer da N7KA:

(Notate che dopo il syslog TRACK_INTFS_DOWN non inviamo più peer-keepalive a N7KB, li riceviamo solo da N7KB che è 1.1.1.2)

```
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
```

Output di Ethanalyzer da 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#
```

N7 KB:

```
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#
```

Ora è possibile ripristinare l'installazione:

```
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#
```

N7 KB:

```
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#
```

Dettagli sull'errore vPC Peer-keepalive:

Eseguire nuovamente il test per verificare cosa succede al collegamento peer-keepalive.

Inviare i pacchetti keepalive in modo bidirezionale - attualmente tutto è attivo e operativo:

```
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
```

Spegnere nuovamente il modulo M132 3 su N7KA:

```
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)
```

Ora, solo N7KB (1.1.1.2) sta inviando i messaggi keepalive a N7KA (1.1.1.1):

```
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
```

Di seguito viene riportato lo stato della versione N7KB che indica che il peer keepalive ha avuto esito negativo:

```
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#
```

Ora si ricomincia a ricevere messaggi keepalive peer da N7KA dopo un breve periodo (90

secondi):

```
<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
```

Verrà quindi visualizzato lo stato più recente in N7KB (il peer visualizzato è attivo):

```
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#
```