

排除NX-OS交換機上的vPC不一致問題

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簡介

本檔案介紹常見虛擬連線埠通道(vPC)不一致問題以及對其進行疑難排解的步驟。

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。

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除 (預設) 的組態來啟動。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

背景資訊

vPC允許物理連線到兩台不同交換機的鏈路顯示為第三台裝置的單個埠通道。

NX-OS裝置上的vPC故障排除

檢查輸出 `show vpc brief` 並檢視其中一個vPC成員埠是否存在任何相容性問題。

使用列出的命令檢查特定vPC的不一致性：

```
show vpc consistency-parameters global
```

```
show vpc consistency-parameters interface Ethernet x/y
```

```
show vpc consistency-parameters vlans
```

```
show vpc consistency-parameters vpc vpc-id
```

問題#1:vPC成員埠不相容

檢查vPC成員埠之間是否存在任何相容性問題，如「`show vpc`」

如果存在任何問題，則會報告為「Compatibility check failed」，如以下輸出所示

```
<#root>
```

```
`show vpc`
```

Legend:

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

vPC domain id : 1

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 : 18

Peer Gateway : Enabled

Dual-active excluded VLANs : -

Graceful Consistency Check : Enabled

Auto-recovery status : Enabled, timer is off.(timeout = 240s)

Delay-restore status : Timer is off.(timeout = 50s)

Delay-restore SVI status : Timer is off.(timeout = 10s)

vPC Peer-link status

```
-----  
id Port Status Active vlans
```

```
-----  
1 Po100 up 1,5,10,118,121-132,150,160,253
```

```
vPC status
```

```
-----  
id Port Status Consistency Reason Active vlans
```

```

-- -----
1 Po1 up success success 1,5,10,118, 121-132,150
2 Po2 down* failed Compatibility check failed - <--- for speed

```

<#root>

```

`show vpc consistency-parameters vpc 2`

```

Legend:

Type 1 : vPC will be suspended in case of mismatch

| Name | Type | Local Value | Peer Value |
|-------------------------|------|--|---|
| delayed-lacp | 1 | disabled | disabled |
| mode | 1 | active | active |
| Switchport Isolated | 1 | 0 | 0 |
| Interface type | 1 | port-channel | port-channel |
| LACP Mode | 1 | on | on |
| Virtual-ethernet-bridge | 1 | Disabled | Disabled |
| Speed | 1 | 10 Gb/s | 100 Gb/s <--- speed mismatch |
| Duplex | 1 | full | full |
| MTU | 1 | 9216 | 9216 |
| Port Mode | 1 | trunk | trunk |
| Native Vlan | 1 | 20 | 20 |
| Admin port mode | 1 | trunk | trunk |
| STP Port Guard | 1 | Default | Default |
| STP Port Type | 1 | Edge Trunk Port | Edge Trunk Port |
| STP MST Simulate PVST | 1 | Default | Default |
| lag-id | 1 | [(64, 0-23-4-ee-be-6d, 806b, 0, 0), (ffff, 50-6b-4b-46-3a-fa, 0, 0), (64, 50-6b-4b-46-39-6a, 1, 0, 0)] | [(0, 50-6b-4b-46-3a-fa, 0, 0), (64, 0-23-4-ee-be-6d, 806b, 0, 0)] |
| Vlan xlt mapping | 1 | Disabled | Disabled |
| vPC card type | 1 | N9K TOR | N9K TOR |
| Allowed VLANs | - | 1,5,10,118 | 1,5,10,118 |
| Local suspended VLANs | - | - | - |

疑難排解

- 確保vPC介面和遠端端 (伺服器/第三交換機) 配置了相同的速度。使用 `show vpc consistency-parameters vpc vpc-id` 檢查與對等vPC介面的速度不匹配。
- 此外，請確認vPC中的所有成員介面都配置了相同的速度。

問題#2：對等鏈路關閉

檢查對等體狀態是否為對等體連結是否處於關閉狀態 `show vpc`

如果對等鏈路狀態存在任何問題，則對於「對等體狀態」，必須將其報告為「對等鏈路已關閉」

, 如以下輸出所示 :

```
<#root>
```

```
`show vpc brief`
```

Legend:

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

```
vPC domain id          : 100
Peer status            : peer link is down    <--- peer-link is down then vPC is down

vPC keep-alive status  : peer is alive
Configuration consistency status : success
Per-vlan consistency status : success
Type-2 consistency status : failed
Type-2 inconsistency reason : SVI type-2 configuration incompatible
vPC role                : secondary
Number of vPCs configured : 1
Peer Gateway            : Disabled
Dual-active excluded VLANs : -
Graceful Consistency Check : Enabled
Auto-recovery status    : Disabled
Delay-restore status    : Timer is off.(timeout = 30s)
Delay-restore SVI status : Timer is off.(timeout = 10s)
Operational Layer3 Peer-router : Disabled
Virtual-peerlink mode   : Disabled
vPC Peer-link status
```

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

vPC status

```
-----
Id   Port           Status Consistency Reason           Active vlans
--   -
123  Po123           down   failed   Peer-link is down   -           <--- Reason: Peer-link down
```

疑難排解

- 檢查對等鏈路中配置的埠通道介面和成員介面的狀態。如果它們已關閉但未連線，請檢查物理連線，如電纜/SFP等。
- 需要將vPC對等鏈路埠通道配置為生成樹協定(STP)埠型別網路，以便在兩台vPC對等交換機上的所有vPC對等鏈路上啟用網橋保證。
- 驗證vPC對等鏈路是否配置為僅允許vPC VLAN的第2層埠通道中繼。
- 在對等體之間的vPC對等體鏈路最初建立之前，所有vPC埠通道都保持掛起狀態。如果vPC對等鏈路聯機後出現故障一段時間，輔助鏈路上的vPC將暫停，直到對等鏈路恢復。

問題#3：無法通過對等保持連線到達對等點

檢查vPC keep-alive status is peer is not reachable through peer-keepalive in `show vpc`

輸出報告vPC對等keepalive已關閉，原因是無法通過對等keepalive到達對等，如下所示：

```
<#root>
```

```
`show vpc brief`
```

Legend:

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

```
vPC domain id          : 100
Peer status            : peer adjacency formed ok
vPC keep-alive status  : peer is not reachable through peer-keepalive
```

```
<--- keep-alive is down
```

```
Configuration consistency status : success
Per-vlan consistency status      : success
Type-2 consistency status       : failed
Type-2 inconsistency reason      : SVI type-2 configuration incompatible
vPC role                         : secondary
Number of vPCs configured       : 1
Peer Gateway                    : Disabled
Dual-active excluded VLANs      : -
Graceful Consistency Check      : Enabled
Auto-recovery status            : Disabled
Delay-restore status            : Timer is off.(timeout = 30s)
Delay-restore SVI status        : Timer is off.(timeout = 10s)
Operational Layer3 Peer-router  : Disabled
Virtual-peerlink mode           : Disabled
vPC Peer-link status
```

```
-----
id   Port   Status Active vlans
--   -
1    Po1    up     1,10
```

```
vPC status
```

```
-----
Id   Port           Status Consistency Reason           Active vlans
--   -
123  Po123           up     success    success                    1,10
```

```
<-- vpc is still up
```

疑難排解

- 驗證第3層介面是否已與用於vPC對等交換器之間對等保持連線的正確虛擬路由轉送(VRF)相關聯。
- 如果用於對等保持連線的管理VRF，請確保將管理交換機連線到兩個vPC對等裝置上的管理埠。
- 驗證用於對等保持連線消息的源IP地址和目標IP地址是否可從與vPC對等保持連線鏈路關聯的VRF訪問。

- 確保已解析地址解析協定(ARP)，並且您可以在對等保持連線地址之間執行ping以測試可達性。 如果不存在可達性，請檢查路徑沿途的問題 (L1、STP等)。

問題#4：第1類不一致

檢查Type-1一致性狀態是否在 `show vpc`

如果檢測到配置一致性問題，命令結果將報告失敗的原因，如下所示：

<#root>

`show vpc`

Legend:

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

```
vPC domain id          : 1
Peer status            : peer adjacency formed ok
vPC keep-alive status  : peer is alive

Configuration consistency status : failed      <--- consistency check failed

Per-vlan consistency status      : success

Configuration inconsistency reason: vPC type-1 configuration incompatible - STP Mode inconsistent <---

Type-2 consistency status      : success
vPC role                       : primary
Number of vPCs configured      : 0
Peer Gateway                   : Enabled
Dual-active excluded VLANs     : -
Graceful Consistency Check     : Enabled
Auto-recovery status           : Enabled, timer is off.(timeout = 360s)
Delay-restore status           : Timer is on.(timeout = 150s, 30s left)
Delay-restore SVI status       : Timer is off.(timeout = 10s)
Operational Layer3 Peer-router : Enabled
Virtual-peerlink mode          : Disabled
```

疑難排解

- 驗證兩台對等交換機是否控制相同的生成樹模式。例如，如果對等交換器使用多重跨距樹狀目錄(MST)跨距樹狀目錄模式，而另一個對等交換器使用快速每個VLAN跨距樹狀目錄 (快速PVST)。將兩台交換器的跨距樹狀目錄模式更改為相同，以清除此錯誤。
- 使用以下命令變更生成樹模式：

```
Switch(config)# spanning-tree mode mst
```

或

```
Switch(config)# spanning-tree mode rapid-pvst
```

要檢視其他型別1型VPC全域性配置故障，請使用此命令確定類別以及本地和對等值：

<#root>

```
`show vpc consistency-parameters global`
```

Legend:

Type 1 : vPC will be suspended in case of mismatch

| Name | Type | Local Value | Peer Value |
|--|------|--------------------------------------|--------------------------------------|
| STP MST Simulate PVST | 1 | Enabled | Enabled |
| STP Port Type, Edge | 1 | Normal, Disabled, | Normal, Disabled, |
| BPDUFilter, Edge BPDUGuard | | Disabled | Disabled |
| STP MST Region Name | 1 | "" | "" |
| STP Disabled | 1 | None | None |
| STP Mode | 1 | Rapid-PVST | Rapid-PVST |
| STP Bridge Assurance | 1 | Enabled | Enabled |
| STP Loopguard | 1 | Disabled | Disabled |
| STP MST Region Instance to | 1 | | |
| VLAN Mapping | | | |
| STP MST Region Revision | 1 | 0 | 0 |
| Interface-vlan admin up | 2 | | 10 |
| Interface-vlan routing capability | 2 | 1 | 1,10 |
| QoS (Cos) | 2 | ([0-7], [], [], [], [], []) | ([0-7], [], [], [], [], []) |
| Network QoS (MTU) | 2 | (1500, 1500, 1500, 1500, 1500, 1500) | (1500, 1500, 1500, 1500, 1500, 1500) |
| Network QoS (Pause: T->Enabled, F->Disabled) | 2 | (F, F, F, F, F, F) | (F, F, F, F, F, F) |

```

Input Queuing (Bandwidth) 2 (0, 0, 0, 0, 0, 0) (0, 0, 0, 0, 0, 0)
Input Queuing (Absolute 2 (F, F, F, F, F, F) (F, F, F, F, F, F)
Priority: T->Enabled,
F->Disabled)
Output Queuing (Bandwidth 2 (0, 0, 0, 0, 0, 0) (0, 0, 0, 0, 0, 0)
Remaining)
Output Queuing (Absolute 2 (T, F, F, F, F, F) (T, F, F, F, F, F)
Priority: T->Enabled,
F->Disabled)
Allowed VLANs - 1,10 1,10
Local suspended VLANs - - -

```

此示例展示如何顯示特定vPC埠通道的vPC一致性引數：

<#root>

```

`show vpc consistency-parameters interface port-channel 10`

```

Legend:

Type 1 : vPC will be suspended in case of mismatch

| Name | Type | Local Value | Peer Value |
|----------------------------|------|---------------------|--------------------|
| STP Mode | 1 | Rapid-PVST | Rapid-PVST |
| STP Disabled | 1 | None | None |
| STP MST Region Name | 1 | "" | "" |
| STP MST Region Revision | 1 | 0 | 0 |
| STP MST Region Instance to | 1 | | |
| VLAN Mapping | | | |
| STP Loopguard | 1 | Disabled | Disabled |
| STP Bridge Assurance | 1 | Enabled | Enabled |
| STP Port Type | 1 | Normal | Normal |
| STP MST Simulate PVST | 1 | Enabled | Enabled |
| Allowed VLANs | - | 1-10,15-20,30,37,99 | 1-10,15-20,30,37,9 |

- 使用全域性和埠通道vPC一致性引數以及當前配置來標識vPC對等體之間的任何差異。

問題#5：第2類不一致

檢查Type-2一致性狀態是否在 `show vpc`

.

如果檢測到配置不一致，此命令結果將報告失敗原因：

<#root>

```

`show vpc`

```

Legend:

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

vPC domain id : 1


```

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 : failed <--- Type-2 inconsistency found

Type-2 inconsistency reason : SVI type-2 configuration incompatible <--- Reason for Type-2 inc

vPC role : primary
Number of vPCs configured : 0
Peer Gateway : Enabled
Dual-active excluded VLANs : -
Graceful Consistency Check : Enabled
Auto-recovery status : Enabled, timer is off.(timeout = 360s)
Delay-restore status : Timer is off.(timeout = 150s)
Delay-restore SVI status : Timer is off.(timeout = 10s)
Operational Layer3 Peer-router : Enabled
Virtual-peerlink mode : Disabled

```

此命令可用於深入挖掘，檢視所有型別2的不一致情況，以及對等項和本地值的配置，以檢視配置是否不匹配：

<#root>

```

`show vpc consistency-parameters global`

```

Legend:

Type 1 : vPC will be suspended in case of mismatch

| Name | Type | Local Value | Peer Value | |
|--|------|-------------------|-------------------|--------------------------------------|
| STP MST Simulate PVST | 1 | Enabled | Enabled | |
| STP Port Type, Edge | 1 | Normal, Disabled, | Normal, Disabled, | |
| BPDUFILTER, Edge BPDUGuard | | Disabled | Disabled | |
| STP MST Region Name | 1 | "" | "" | |
| STP Disabled | 1 | None | None | |
| STP Mode | 1 | Rapid-PVST | Rapid-PVST | |
| STP Bridge Assurance | 1 | Enabled | Enabled | |
| STP Loopguard | 1 | Disabled | Disabled | |
| STP MST Region Instance to VLAN Mapping | 1 | | | |
| STP MST Region Revision | 1 | 0 | 0 | |
| Interface-vlan admin up | 2 | | 10 | <--- mismatch for SVIs between peers |
| Interface-vlan routing | 2 | 1 | 1,10 | <--- mismatch for SVIs between peers |

capability

| | | | |
|---|---|---|---|
| QoS (Cos) | 2 | ([0-7], [], [], [], [], []) | ([0-7], [], [], [], [], []) |
| Network QoS (MTU) | 2 | (1500, 1500, 1500, 1500, 1500, 1500) | (1500, 1500, 1500, 1500, 1500, 1500) |
| Network QoS (Pause: T->Enabled, F->Disabled) | 2 | (F, F, F, F, F, F) | (F, F, F, F, F, F) |
| Input Queuing (Bandwidth) | 2 | (0, 0, 0, 0, 0, 0) | (0, 0, 0, 0, 0, 0) |
| Input Queuing (Absolute Priority: T->Enabled, F->Disabled) | 2 | (F, F, F, F, F, F) | (F, F, F, F, F, F) |
| Output Queuing (Bandwidth Remaining) | 2 | (0, 0, 0, 0, 0, 0) | (0, 0, 0, 0, 0, 0) |
| Output Queuing (Absolute Priority: T->Enabled, F->Disabled) | 2 | (T, F, F, F, F, F) | (T, F, F, F, F, F) |
| Allowed VLANs | - | 1,10 | 1,10 |
| Local suspended VLANs | - | - | - |

inconsistent

疑難排解

- 驗證vPC介面與 `show vpc consistency-parameters vpc vpc-id`.

檢查STP埠型別不匹配的步驟：

<#root>

```
`show vpc consistency-parameters vpc 123`
```

Legend:

Type 1 : vPC will be suspended in case of mismatch

| Name | Type | Local Value | Peer Value |
|----------------|------|-----------------|--------------|
| Interface type | 1 | port-channel | port-channel |
| LACP Mode | 1 | on | on |
| STP Port Guard | 1 | Default | Default |
| STP Port Type | 1 | Edge Trunk Port | Default |

<--- this VPC port-channel is configured as Edge Trunk port while peer has Default STP port type.

- 在兩個對等體上配置STP埠型別以匹配vPC介面。可以將生成樹埠配置為邊緣埠、網路埠或普通埠。在指定的時間，連線埠只能處於其中一種狀態。預設跨距樹狀目錄連線埠型別為正常型別。
- STP埠型別可以全域性配置或在介面級別配置。

相關資訊

- [思科技術支援與下載](#)

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。