

含APS模式備援的STM1/OC3通道化卡的ASR5000交換

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簡介

本文檔介紹在Cisco ASR5000上執行同步傳輸模組(STM)/OC3卡切換所需的步驟。

背景資訊

ASR5000上的STM1/OC3卡提供STM-1埠，因此需要特別小心處理。

其 **STM-1 (級別1)**是同步數字體系(SDH)ITU-T光纖網路傳輸標準。它的位元率為155.52 Mbit/s。

SDH與乙太網不同，並且有一些必須考慮的具體事項。

問題

安裝程式具有配置有自動保護交換(APS)模式冗餘的一對STM1/OC3卡 — 卡21和卡37。卡37處於活動狀態，卡21處於備用狀態。埠21/1和21/2處於關閉狀態，APS工作正常。37/1和37/2埠已開啟，APS受到保護。

```
card 21
redundancy aps-mode
aps 1+1 uni-directional non-revertive
framing sdh e1
initial-e1-framing crc4
service-type frame-relay
#exit
```

```
***** show card table all *****
```

```
Slot Card Type Oper State SPOF Attach
```

```
-----
21: LC 4 PORT STM1/OC3 Channelized Card Standby - 5
37: LC 4 PORT STM1/OC3 Channelized Card Active No 5
```

```
[local]gre2mme01# show aps info 37/1
```

```
Port :37/1
Role : Protected
Mode : 1+1
Revertive : No
```

```
State : Active
Direction : Uni
Wait To Restore(sec) : 0
  Redundant Port : 21/1
Lockout : No
```

```
[local]gre2mme01# show aps info 21/1
Port :21/1
Role : Working
Mode : 1+1
Revertive : No
State : Standby
Direction : Uni
Wait To Restore(sec) : 0
Redundant Port : 37/1
Lockout : No
```

```
[local]mme01# show port table
Thursday March 08 11:20:20 CET 2018
Port Role Type Admin Oper Link State Pair Redundant
-----
21/1 Srvc STM1/OC3 Channelized Enabled - Down Standby 37/1 APS Workn
21/2 Srvc STM1/OC3 Channelized Enabled - Down Standby 37/2 APS Workn

37/1 Srvc STM1/OC3 Channelized Enabled - Up Active 21/1 APS Protd
37/2 Srvc STM1/OC3 Channelized Enabled - Up Active 21/2 APS Protd
```

在卡21和37之間執行切換的嘗試失敗，出現「錯誤冗餘模式」錯誤。

```
[local]gre2mme01# card switch from 37 to 21
Friday March 09 00:28:10 CET 2018
Failure: wrong redundancy mode
```

解決方案

STM1/OC3卡具有APS模式冗餘，不支援將卡交換機從X切換到Y。

必須改用APS特定的命令。

```
aps { clear slot#/port# | exercise slot#/port# | lockout slot#/port# | switch { force | manual }
slot#/port# }
```

```
switch { force | manual } slot#/port#
Switch to either the working port or the protection port:
```

force: Forces a switch of ports, even if there is an active alarm state.

manual: Implements a switch of ports if there are no active alarms.

slot#/port# is the CLC2/OLC2 slot number (valid range is 17 - 48) and appropriate port number (CLC2 valid range is 1 - 4; OLC2 valid value is 1)

在這種情況下，問題可通過以下方式解決：

```
aps switch manual 37/1
aps switch manual 37/2
```

附註：如果手動切換失敗，則可能是因為連線埠上的錯誤所致。使用「show aps port-status <card/slot>」驗證連線埠狀態。仍可使用「force」選項強制切換。

[local]gre2mme01# **show aps port-status 21/1**

Friday March 09 13:19:49 CET 2018

Port : 21/1
Role : Working
Lockout : No
APS Signal Failure : No
APS Signal Degrade : No
Switch Over : No
Far End Failiure : No
Remote Not Compatible : No
Current Command : No Request
Switch Status : No request

[local]gre2mme01#

[local]gre2mme01# **show aps port-status 37/1**

Friday March 09 13:20:07 CET 2018

Port : 37/1
Role : Protected
Lockout : No
APS Signal Failure : No
APS Signal Degrade : No
Switch Over : No
Far End Failiure : No
Remote Not Compatible : No
Current Command : No Request
Switch Status : No request
Invalid K1 K2 : No
Rx K1 : Regest : 0x 0 (-- Channel - 0)
Rx K2 : Status : 0x 0 (-- Channel - 0)
Tx K1 : Regest : 0x 0 (No Request Channel - 0)
Tx K2 : Status : 0x 4 (UNI,1+1 Channel - 0)