

在ONS15454和Catalyst交换机上通过RPR使用ML卡配置EtherChannel

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简介

此文档说明配置EtherChannel和802.1Q的步骤建立隧道使用一台思科Catalyst 3500xl交换机和ML-series卡在Resilient Packet Ring (RPR)间在Cisco ONS 15454环境。

先决条件

要求

Cisco 建议您了解以下主题：

- Cisco ONS 15454
- Cisco ONS 15454 ML-Series以太网卡
- Catalyst 3500xl交换机

使用的组件

本文档中的信息基于以下软件和硬件版本：

- Cisco ONS 15454版本6.x
- 运行Cisco IOS软件版本12.0(5)XC的Catalyst 3500xl交换机
- ML (被捆绑作为ONS15454 6.0版本一部分)该运行Cisco IOS软件版本12.2(27)SV和以后

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

网络图

本文以两ONS15454节点和两台Catalyst 3500xl交换机使用一个实验室设置。EachONS 15454配备有一个ML1000-2卡，并且Resilient Packet Ring (RPR)被建立在他们之间在ML1000-2卡间。Catalyst 3500 XL的两千兆以太网端口连接到各自ML1000-2卡的两千兆以太网端口。网络图在[图1](#)显示。

图 1：网络图

配置

配置RPR

完成这些步骤构件RPR：

1. 创建在POS 0 ML1000-2在ONS15454 A和POS ML1000-2 1之间的一个电路在ONS15454 B的。
2. 创建在POS 1 ML1000-2在ONS15454 A和POS ML1000-2 0之间的一个电路在ONS15454 B的。
3. 配置在ONS15454 A的ML1000-2卡。启用集成的桥接和路由(IRB)。

bridge irb 创建网桥1

Bridge 1 protocol rstp 配置SRP接口。

```
interface SPR1
  no ip address
  no keepalive
  spr station-id 3
  spr topology discovery
  hold-queue 150 in
!
interface SPR1.1
  encapsulation dot1Q 1 native
  no snmp trap link-status
  bridge-group 1
  bridge-group 1 spanning-disabled
```

配置接口POS0。

```
!
interface POS0
  no ip address
  load-interval 30
  spr interface-id 1
  spr keepalive
  crc 32
!
```

配置接口POS1。

```
!
interface POS1
  no ip address
  load-interval 30
  spr interface-id 1
  spr keepalive
  crc 32
```

- !
4. 配置在ONS15454 B.的ML1000-2卡。启用集成的桥接和路由(IRB)。

bridge irb 创建网桥1

Bridge 1 protocol rstp 配置SRP接口。

```
interface SPR1
  no ip address
  no keepalive
  spr station-id 4
  spr topology discovery
  hold-queue 150 in
!
interface SPR1.1
  encapsulation dot1Q 1 native
  no snmp trap link-status
  bridge-group 1
  bridge-group 1 spanning-disabled
```

配置接口POS0。

```
!
interface POS0
  no ip address
  load-interval 30
  spr interface-id 1
  spr keepalive
  crc 32
```

配置接口POS1。

```
!
interface POS1
  no ip address
  load-interval 30
  spr interface-id 1
  spr keepalive
  crc 32
!
```

配置以太网信道

完成这些步骤构件EtherChannel：

1. 配置接口GigabitEthernet0/1和GigabitEthernet0/2在CAT3500_A。

```
!
interface GigabitEthernet0/1
  port group 1 distribution destination
  switchport trunk encapsulation dot1q
  switchport mode trunk
```

```
!
interface GigabitEthernet0/2
  port group 1 distribution destination
  switchport trunk encapsulation dot1q
  switchport mode trunk
```

2. 配置接口GigabitEthernet0/1和GigabitEthernet0/2在CAT3500_B。

```
!
interface GigabitEthernet0/1
  port group 1 distribution destination
  switchport trunk encapsulation dot1q
  switchport mode trunk
```

```
!
interface GigabitEthernet0/2
```

```
port group 1 distribution destination
switchport trunk encapsulation dot1q
switchport mode trunk
!
```

3. 配置在ONS15454 A.的ML1000-2。配置interface gigabitethernet 0和GigabitEthernet1。

```
!
interface GigabitEthernet0
no ip address
channel-group 1
mode dot1q-tunnel
l2protocol-tunnel cdp
l2protocol-tunnel stp
l2protocol-tunnel vtp
no cdp enable
!
interface GigabitEthernet1
no ip address
channel-group 1
mode dot1q-tunnel
l2protocol-tunnel cdp
l2protocol-tunnel stp
l2protocol-tunnel vtp
no cdp enable
!
```

配置Port-Channel。

```
!
interface Port-channel1
no ip address
hold-queue 225 in
!
interface Port-channel1.1
encapsulation dot1Q 1 native
no snmp trap link-status
bridge-group 1
bridge-group 1 spanning-disabled
!
```

4. 配置在ONS15454 B.的ML1000-2。配置接口GigabitEthernet0和GigabitEthernet1。

```
!
interface GigabitEthernet0
no ip address
channel-group 1
mode dot1q-tunnel
l2protocol-tunnel cdp
l2protocol-tunnel stp
l2protocol-tunnel vtp
no cdp enable
!
interface GigabitEthernet1
no ip address
channel-group 1
mode dot1q-tunnel
l2protocol-tunnel cdp
l2protocol-tunnel stp
l2protocol-tunnel vtp
no cdp enable
!
```

配置Port-Channel。

```
!
interface Port-channel1
no ip address
hold-queue 225 in
!
```

```

interface Port-channel1.1
 encapsulation dot1Q 1 native
 no snmp trap link-status
 bridge-group 1
 bridge-group 1 spanning-disabled
!
```

验证

完成这些步骤验证配置：

1. 发出**show interfaces port-channel**命令从在ONS15454 A.的ML1000-2。此命令**show that EtherChannel**包含两千兆以太网端口(请参阅**黑体字符**)。

```

15454A_ML1000-2>show interface port-channel 1 Port-channel1 is up, line protocol is up
Hardware is GEChannel, address is 000d.28bd.0b34 (bia 0000.0000.0000) MTU 1500 bytes, BW
2000000 Kbit, DLY 10 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation:
ARPA, loopback not set Keepalive set (10 sec) ARP type: ARPA, ARP Timeout 04:00:00 No. of
active members in this channel: 2 Member 0 : GigabitEthernet0 , Full-duplex, 1000Mb/s
Member 1 : GigabitEthernet1 , Full-duplex, 1000Mb/s Last input 00:00:00, output 00:00:00,
output hang never Last clearing of "show interface" counters never Input queue: 0/150/0/0
(size/max/drops/flushes); Total output drops: 0 Queueing strategy: fifo Output queue: 0/80
(size/max) 5 minute input rate 4000 bits/sec, 7 packets/sec 5 minute output rate 2000
bits/sec, 4 packets/sec 495875 packets input, 33757916 bytes Received 493640 broadcasts (0
IP multicast) 0 runts, 0 giants, 0 throttles 0 input errors, 0 CRC, 0 frame, 0 overrun, 0
ignored 0 watchdog, 0 multicast 0 input packets with dribble condition detected 55924
packets output, 4080533 bytes, 0 underruns 0 output errors, 0 collisions, 0 interface
resets 0 babbles, 0 late collision, 0 deferred 0 lost carrier, 0 no carrier 0 output buffer
failures, 0 output buffers swapped out
```

2. 发出**show interfaces port-channel**命令从在ONS15454 B.的ML1000-2。此命令显示**EtherChannel**包含两千兆以太网端口(请参阅**黑体字符**)。

```

15454B_ML1000-2>show int port-channel 1 Port-channel1 is up, line protocol is up Hardware
is GEChannel, address is 0013.60f8.65f4 (bia 0000.0000.0000) MTU 1500 bytes, BW 2000000
Kbit, DLY 10 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation: ARPA,
loopback not set Keepalive set (10 sec) ARP type: ARPA, ARP Timeout 04:00:00 No. of active
members in this channel: 2 Member 0 : GigabitEthernet0 , Full-duplex, 1000Mb/s Member 1 :
GigabitEthernet1 , Full-duplex, 1000Mb/s Last input 00:00:00, output 00:00:00, output hang
never Last clearing of "show interface" counters never Input queue: 0/150/0/0
(size/max/drops/flushes); Total output drops: 0 Queueing strategy: fifo Output queue: 0/80
(size/max) 5 minute input rate 3000 bits/sec, 5 packets/sec 5 minute output rate 3000
bits/sec, 6 packets/sec 1970114 packets input, 143644364 bytes Received 1969971 broadcasts
(0 IP multicast) 0 runts, 0 giants, 0 throttles 0 input errors, 0 CRC, 0 frame, 0 overrun,
0 ignored 0 watchdog, 0 multicast 0 input packets with dribble condition detected 2256335
packets output, 164715496 bytes, 0 underruns 0 output errors, 0 collisions, 0 interface
resets 0 babbles, 0 late collision, 0 deferred 0 lost carrier, 0 no carrier 0 output buffer
failures, 0 output buffers swapped out
```

3. 发出**show cdp neighbor**命令在CAT3500_A (请参见图2)。此命令显示CAT3500_B作为其邻居通过EtherChannel。图 2：在CAT3500_A的**show cdp neighbor**
4. 发出**show cdp neighbor**命令在CAT3500_B (请参见图3)。此命令显示CAT3500_A作为其邻居通过EtherChannel。图 3：在CAT3500_B的**show cdp neighbor**
5. 执行ping测试。配置在CAT3500_A的VLAN2与IP地址192.168.0.2。

```

!
interface VLAN2
 ip address 192.168.0.2 255.255.255.0
 no ip directed-broadcast
 no ip route-cache
!
```

配置在CAT3500_B的VLAN2与IP地址192.168.0.4。

```
!
```

```
interface VLAN2
 ip address 192.168.0.4 255.255.255.0
 no ip directed-broadcast
 no ip route-cache
!
```

发出ping命令在CAT3500_A (请参见图4)。

ping 192.168.0.4 图 4 : Ping测试从CAT3500_A到CAT3500_B发出ping命令在CAT3500_B (请参见图5)。

ping 192.168.0.2 图 5 : Ping测试从CAT3500_B到CAT3500_A

相关信息

- [Cisco ONS 15454上通过ML卡建立有四个节点的弹性分组环路](#)
- [光网络支持资源](#)
- [技术支持和文档 - Cisco Systems](#)