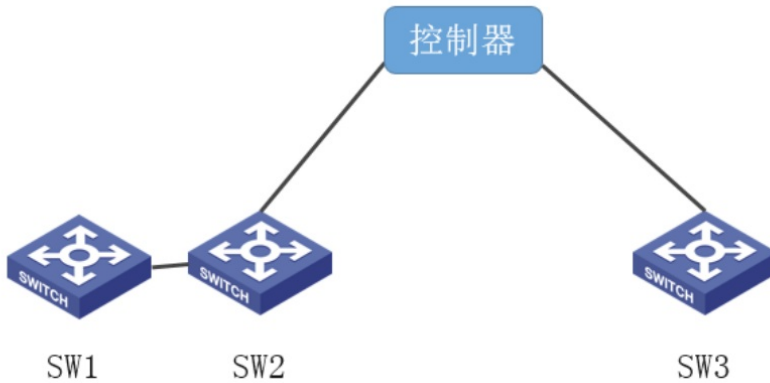


组网及说明



现场简化组网图如下，SW1和SW2堆叠，控制器连接交换机的管理口：

问题描述

现场两台设备堆叠，ADDC自动下发方案，配置了openflow，但上线后openflow一直断断续续：

```
%Dec 26 08:07:28:242 2023leaf-10.6.49.103 OFP/5/OFP_CONNECT: Openflow instance 1, controller 1 is connected.
```

```
%Dec 26 08:07:28:250 2023leaf-10.6.49.103 OFP/5/OFP_DISCONNECT: Openflow instance 1, controller 1 is disconnected.disconnected reason:Epoll error.
```

```
%Dec 26 08:07:28:252 2023leaf-10.6.49.103 OFP/5/OFP_FAIL_OPEN: Openflow instance 1 is in fail secure mode.
```

从控制器上ping设备，ping报文存在丢包：

```
ping -c 10000 -vpn-instance mgmt 10.6.49.151
Ping 10.6.49.151 (10.6.49.151): 56 data bytes, press CTRL+C to break
Request time out
56 bytes from 10.6.49.151: icmp_seq=9 ttl=64 time=0.333 ms
56 bytes from 10.6.49.151: icmp_seq=10 ttl=64 time=0.377 ms
56 bytes from 10.6.49.151: icmp_seq=11 ttl=64 time=1.718 ms
56 bytes from 10.6.49.151: icmp_seq=12 ttl=64 time=0.364 ms
56 bytes from 10.6.49.151: icmp_seq=13 ttl=64 time=0.361 ms
Request time out
Request time out
56 bytes from 10.6.49.151: icmp_seq=16 ttl=64 time=0.376 ms
56 bytes from 10.6.49.151: icmp_seq=17 ttl=64 time=0.343 ms
56 bytes from 10.6.49.151: icmp_seq=18 ttl=64 time=0.381 ms
Request time out
```

如果将插在管理口上的电缆接到电脑上，从电脑ping控制器无丢包现象；在设备另一个管理口上插光转电模块，插同样的电缆，ping控制器也没有丢包现象，openflow也正常。

过程分析

(1) 远程到堆叠交换机上进行了更多的替换测试，检查了相关配置，也看了mac地址表项学习，均没有发现什么异常；

(2) 现场排查组网，在控制器上发现学到了两个相同的mac，经排查，同一个二层组网中，SW3和SW2/SW1的管理口mac地址是一样的。跟现场了解情况，现场在开局组网之前，将SW2和SW3堆叠在一起测试过，之后直接在堆叠状态下拔掉堆叠线让两台设备堆叠分裂，没有重启。之后又将SW2和SW1堆叠，和SW3一起加入到组网中，结果SW3的管理口和堆叠设备的管理口mac相同。初步判断是因为堆叠时配置了mac永久保留，两台设备堆叠时，管理口mac同步了，之后堆叠分裂又没有重启，导致两台设备的管理口mac是一样的。

(3) 在实验室测试，将两台5130S堆叠，配置mac永久保留，此时查看两框上物理接口mac如下，即物理接口mac堆叠后不相同：

```
GigabitEthernet1/0/1
Current state: DOWN
IP packet frame type: Ethernet II, hardware address: 3cf5-cc01-44f2
```

GigabitEthernet2/0/1  
Current state: DOWN

IP packet frame type: Ethernet II, hardware address: 9ce8-954c-6c36

查看vlan虚接口mac地址如下:

Vlan-interface99

Current state: UP

Line protocol state: UP

Description: Vlan-interface99 Interface

Bandwidth: 10000000 kbps

Maximum transmission unit: 1500

Internet address: 172.31.2.63/24 (primary)

IP packet frame type: Ethernet II, hardware address: 3cf5-cc01-44f1

IPv6 packet frame type: Ethernet II, hardware address: 3cf5-cc01-44f1

直接拔掉堆叠线, 查看两框上的mac地址:

Slot 1:

GigabitEthernet1/0/1

Current state: DOWN

IP packet frame type: Ethernet II, hardware address: 3cf5-cc01-44f2

Vlan-interface99

Current state: UP

Line protocol state: UP

Description: Vlan-interface99 Interface

Bandwidth: 10000000 kbps

Maximum transmission unit: 1500

Internet address: 172.31.2.63/24 (primary)

IP packet frame type: Ethernet II, hardware address: 3cf5-cc01-44f1

IPv6 packet frame type: Ethernet II, hardware address: 3cf5-cc01-44f1

Slot 2:

GigabitEthernet2/0/1

Current state: DOWN

IP packet frame type: Ethernet II, hardware address: 9ce8-954c-6c36

Vlan-interface99

Current state: DOWN

Line protocol state: DOWN

Description: Vlan-interface99 Interface

Bandwidth: 10000000 kbps

Maximum transmission unit: 1500

Internet address: 172.31.2.63/24 (primary)

IP packet frame type: Ethernet II, hardware address: 3cf5-cc01-44f1

IPv6 packet frame type: Ethernet II, hardware address: 3cf5-cc01-44f1

可以看到堆叠分裂后, 三层虚接口的mac地址是保持不变的, 两台设备的三层接口mac地址一样, 但物理接口地址都是以自己的系统mac生成的。之后将分裂后的备框重启一下, 查看mac地址, 可以看到mac地址是根据该设备的系统mac重新生成的, 与原主设备不一样了:

Vlan-interface99

Current state: DOWN

Line protocol state: DOWN

Description: Vlan-interface99 Interface

Bandwidth: 10000000 kbps

Maximum transmission unit: 1500

Internet address: 172.31.2.63/24 (primary)

IP packet frame type: Ethernet II, hardware address: 9ce8-954c-6c35

IPv6 packet frame type: Ethernet II, hardware address: 9ce8-954c-6c35

(4) 根据现场环境和实验室测试结果, 可以确定现场故障是由于二层组网中mac冲突导致的, 而mac冲突是由于堆叠设备分裂后, 因为配置了mac保留, 导致管理口mac保持和原主框一致造成的。

#### 解决方法

重启sw3设备, 使mac重新刷新, 解决地址冲突