

知 S5820V2和S5130HI直连trunk允许vlan超过4个后业务不通案例

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如下图：核心S5820V2聚合直连一台S5130-HI，出现trunk互联接口允许VLAN超过4个后直连不通。通过流量统计发现不通的时候58v2的出口是把报文发出去了，但是5130HI没有收到。

Server-----5120-----5820v2=====5130HI

出现ping不通的时候的流量统计信息：58从接口发出去了20个包，5130没有收到。

5820上流量统计：

```
<GZIDC_4I08_S5820_VI>dis qos policy interface Ten-GigabitEthernet 1/0/41
```

Interface: Ten-GigabitEthernet1/0/41

Direction: Outbound

Policy: 10

Classifier: 10

Operator: AND

Rule(s) : If-match acl 3601

Behavior: 10

Accounting enable:

20 (Packets)

在5130没有收到。

S5130:

```
<4H02_2U_H3C_201512_T>dis qos po interface Ten-GigabitEthernet 1/0/49
```

Interface: Ten-GigabitEthernet1/0/49

Direction: Inbound

Policy: 10

Classifier: 10

Operator: AND

Rule(s) :

If-match acl 3601

Behavior: 10

Accounting enable:

0 (Packets)

允许TRUNK的VLAN小于两个的时候，是可以通的，这个时候5130入接口是能统计到报文的。

5130入口流量统计信息：

```
[4H02_2U_H3C_201512_T]dis qos po int t 1/0/49
```

Interface: Ten-GigabitEthernet1/0/49

Direction: Inbound

Policy: 10

Classifier: 10

Operator: AND

Rule(s) :

If-match acl 3601

Behavior: 10

Accounting enable:

20 (Packets)

- 1、在S5820V2上尝试配置允许多个VLAN，发现当配置trunk允许VLAN 60/90/120时，直连ping不通，其他VLAN trunk允许后都能通过，不存在trunk VLAN超过4个不通的问题；
- 2、故障时，S5130-HI交换机的STP协议全局使能，其他如核心S5820V2和接入S5500等我司交换机STP去使能。观察S5130上连接S5820V2的接口STP状态为DISCARDING状态，接口被阻塞，因而无法直连无法ping通。互联端口STP为DISCARDING的原因为Disputed，即端口收到了非阻塞指定端口发出的低优先级消息；
- 3、[H3C]dis stp brief

MST ID	Port	Role	STP State	Protection
0	Bridge-Aggregation10	ROOT	DISCARDING	NONE

```
<H3C>dis stp abnormal-port
```

MST ID	Blocked Port	Reason
0	Bridge-Aggregation10	Disputed

- 4、在S5130-HI上镜像抓包，可以看到S5130-HI与S5820V2互联的接口上收到了低优先级的STP报文，抓包截图如下：

源mac地址为ac:4e:91:41:f7:20的STP报文：

Filter: stp		Expression...		Clear	Apply	Save
No.	Time	Source	Destination	Protocol	Length	Info
1203	633.424823000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	60 RST	Root = 32768/0/0/0:02:70:2c:8a:ca Cost = 0 Port = 0x4032	
1220 633.43252000		HuaweiTe_41:f7:20	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
1221	633.477232000	De11_31:aa:cc	Spanning-tree-(for-STP	60 RST	Root = 32768/0/f8:b1:56:31:aa:ca Cost = 0 Port = 0x6122	
1364	635.426887000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
1381	635.477288000	De11_31:aa:cc	Spanning-tree-(for-STP	60 RST	Root = 32768/0/f8:b1:56:31:aa:ca Cost = 0 Port = 0x6122	
1382	635.486346000	HuaweiTe_41:f7:20	Spanning-tree-(for-STP	119 MST	Root = 32768/0/ac:4e:91:41:f7:20 Cost = 0 Port = 0x802f	
1515	637.424801000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
1534	637.477163000	De11_31:aa:cc	Spanning-tree-(for-STP	60 RST	Root = 32768/0/f8:b1:56:31:aa:ca Cost = 0 Port = 0x6122	
1537	637.527443000	HuaweiTe_41:f7:20	Spanning-tree-(for-STP	119 MST	Root = 32768/0/ac:4e:91:41:f7:20 Cost = 0 Port = 0x802f	
1652	639.424522000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
1670	639.477080000	De11_31:aa:cc	Spanning-tree-(for-STP	60 RST	Root = 32768/0/f8:b1:56:31:aa:ca Cost = 0 Port = 0x6122	
1672	639.537070000	HuaweiTe_41:f7:20	Spanning-tree-(for-STP	119 MST	Root = 32768/0/ac:4e:91:41:f7:20 Cost = 0 Port = 0x802f	
1772	641.426047000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
4						
Frame 1220: 119 bytes on wire (952 bits), 119 bytes captured (952 bits) on interface 0						
IEEE 802.3 Ethernet						
Destination: Spanning-tree-(for-bridges)_00 (01:80:c2:00:00:00)						
Source: HuaweiTe_41:f7:20 (ac:4e:91:41:f7:20)						
Length: 105						
Logical-Link Control						
Spanning Tree Protocol						

源mac地址为f8:b1:56:31:aa:cc的STP报文：

Filter: stp		Expression...		Clear	Apply	Save
No.	Time	Source	Destination	Protocol	Length	Info
1203	633.424823000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	60 RST	Root = 32768/0/0/0:02:70:2c:8a:ca Cost = 0 Port = 0x02ff	
1220	633.43252000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
1221 633.477232000		De11_31:aa:cc	Spanning-tree-(for-STP	60 RST	Root = 32768/0/f8:b1:56:31:aa:ca Cost = 0 Port = 0x6122	
1364	635.426887000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
1381	635.477288000	De11_31:aa:cc	Spanning-tree-(for-STP	60 RST	Root = 32768/0/f8:b1:56:31:aa:ca Cost = 0 Port = 0x6122	
1382	635.486346000	HuaweiTe_41:f7:20	Spanning-tree-(for-STP	119 MST	Root = 32768/0/ac:4e:91:41:f7:20 Cost = 0 Port = 0x802f	
1515	637.424801000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
1534	637.477163000	De11_31:aa:cc	Spanning-tree-(for-STP	60 RST	Root = 32768/0/f8:b1:56:31:aa:ca Cost = 0 Port = 0x6122	
1537	637.527443000	HuaweiTe_41:f7:20	Spanning-tree-(for-STP	119 MST	Root = 32768/0/ac:4e:91:41:f7:20 Cost = 0 Port = 0x802f	
1652	639.424522000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
1670	639.477080000	De11_31:aa:cc	Spanning-tree-(for-STP	60 RST	Root = 32768/0/f8:b1:56:31:aa:ca Cost = 0 Port = 0x6122	
1672	639.537070000	HuaweiTe_41:f7:20	Spanning-tree-(for-STP	119 MST	Root = 32768/0/ac:4e:91:41:f7:20 Cost = 0 Port = 0x802f	
1772	641.426047000	HeWlettP_F0:29:29	Spanning-tree-(for-STP	119 MST	Root = 32768/0/08:2e:5f:f0:29:21 Cost = 0 Port = 0x4032	
4						
Frame 1221: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0						
IEEE 802.3 Ethernet						
Destination: Spanning-tree-(for-bridges)_00 (01:80:c2:00:00:00)						
Source: De11_31:aa:cc (f8:b1:56:31:aa:cc)						
Length: 39						
Padding: 00000000000000						
Logical-Link Control						
Spanning Tree Protocol						

S5130-HI发送的STP报文的源mac地址为38:97:d6:ae:41:d7

5、通过整网排查，确认上述mac地址为服务器mac。登录服务器，关闭服务器的STP功能，S5820V2连接S5130-E交换机接口trunk permit vlan 60后，互ping能通。另通过排查，vlan 90互联的一台华为S5700交换机，也发送了STP报文到S5130-EI。因华为S5700交换机下联无业务，将S5820V2与S5700交换机互联的接口shutdown后，再在与S5130-EI互联的接口上trunk permit vlan 90后，互ping能通。vlan 120所连大部分为服务器，有较多服务器使能STP功能，因承载业务，现场未能完全关闭所有服务器的STP功能，仍存在添加vlan 120后，互ping不通的问题。

6、当vlan小于两个的时候，这两个vlan里面刚好没有服务器发送STP报文，因此5130HI端口不会阻塞，而当vlan trunk了发送STP的服务器所在VLAN的时候，接口变成阻塞状态，因此导致不通。

该问题是由于使能STP功能的S5130-HI交换机收到了来自服务器和其他未关闭STP功能的交换机发送的STP报文，导致S5130-HI交换机接口状态为DISCARDING状态，接口变为阻塞状态，接口不转发和响应报文。现网中大部分设备均未使能STP，建议整网（包括服务器和网络设备）排查STP使能情况，去使能所有设备的STP功能。