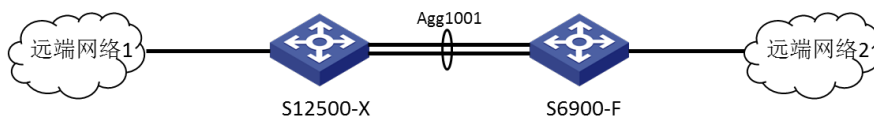


知 S12510-X接口下关闭stp仍透传stp报文导致对端displute问题案例

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如图所示，远端网络1和S12500-X建立的是vxlan隧道，S12500-X是分布式网关VTEP设备，S12500-X的agg1001口是ac口，并且在接口下关闭了stp。S12500-X和S6900-F均全局开启了stp。客户在变更新增业务过程中，反馈左侧远端网络1突然无法ping通远端网络2，进一步查看S12500-X连对端S6900-F的直连arp都学不到，直连ping不通，登录S6900-F查看端口agg1001发现端口被displute。现场为了恢复业务，紧急通过在S6800-F接口下也关闭stp后业务恢复。

查看S6900-F故障时间收集的诊断信息，确实发现存在displute情况：

```
%Jan 16 18:19:58:813 2018 GD-KXC2F-0625(0626)-H3C6900 STP/4/STP_DISPUTE: Instance 0 & #39;s port Bridge-Aggregation1001 received an inferior BPDU from a designated port which is in forwarding or learning state.
```

```
=====display stp abnormal-port=====
```

```
---[Bridge-Aggregation1001]---
```

MST ID	BlockReason	Time
0	Disputed	18:26:14 01/16/2018
0	Disputed	18:26:12 01/16/2018
0	Disputed	18:26:10 01/16/2018

查看S12500-X的接口配置，确实故障发生前端口前就已经关闭了stp：

```
interface Bridge-Aggregation1001
description to-GD-KXC2F-0625(0626)-H3C6900-bri1001
port link-type trunk
undo port trunk permit vlan 1
port trunk permit vlan 2 to 4094
undo stp enable
service-instance 321
 encapsulation s-vid 321
 xconnect vsi 7790001
service-instance 533
 encapsulation s-vid 533
```

为了证实S12500-X从agg 1001发送报文给S6900-F，从S6900-F的agg 1001入方向抓包，发现确实有收到BPDU报文：

```
3 0.814934 CiscoInc-0f:84:af Spanning-tree-(for-bridges)-00 STP 60 Conf. Root = 32768/30/00:18:73:0f:84:80 Cost = 0 Port = 0x802f
4 1.174953 CiscoInc-0f:84:af Spanning-tree-(for-bridges)-00 STP 60 RST. Root = 32768/4000/00:18:73:0f:84:80 Cost = 0 Port = 0x8030
5 1.999979 1cab:34:90:7d:68 Spanning-tree-(for-bridges)-00 STP 119 MST. Root = 32768/0/1c:ab:34:90:7d:68 Cost = 0 Port = 0x80bf
6 2.187351 CiscoInc-09:d3:81 PVST+ Spanning-tree-(for-bridges)-00 STP 64 Conf. Root = 32768/200/00:27:9d:ca:ca:80 Cost = 0 Port = 0x810a
7 2.818912 CiscoInc-0f:84:af Spanning-tree-(for-bridges)-00 STP 60 Conf. Root = 32768/30/00:18:73:0f:84:80 Cost = 0 Port = 0x802f
8 3.173416 00:a3:8e:0b:15:30 Spanning-tree-(for-bridges)-00 STP 60 RST. Root = 32768/4000/00:a3:8e:0b:15:30 Cost = 0 Port = 0x8030

> Frame 8: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on 0/2:3 Ethernet
> Logical-Link Control
+ Spanning Tree Protocol
  Protocol Identifier: Spanning Tree Protocol (0x0000)
  Protocol Version Identifier: Rapid Spanning Tree (2)
  BPDU Type: Rapid/Multiple Spanning Tree (0x002)
  BPDU Flags: 0x3c, Forwarding, Learning, Port Role: Designated
  Root Identifier: 32768 / 4000 / 00:a3:8e:0b:15:30
  Root Path Cost: 0
  Bridge Identifier: 32768 / 4000 / 00:a3:8e:0b:15:30
  Port Identifier: 0x8030
  Message Age: 0
  Max Age: 20
  Hello Time: 2
  Forward Delay: 15
  Version 1 Length: 0
```

看源mac，有四个都是远端网络1设备的，在S12500-X上看到都是evpn发布过来的，说明是从tunnel传过来的：

VSI name: 755002

MAC address	Link ID/Name	Flags	Next hop
000c-29c6-bbf7	Tunnel17	B	120.80.96.63
1cab-3490-7a7c	0	DL	-
000c-296a-7fb8	Tunnel17	B	120.80.96.63
00a3-8e0b-1530	Tunnel17	B	120.80.96.63

VSI name: 755000

MAC address	Link ID/Name	Flags	Next hop
d461-fe69-c7d9	0	DL	-
1cab-3490-7a7c	0	DL	-
0027-0dca-ca80	Tunnel17	B	120.80.96.63

68ef-bd09-4381 Tunnel17 B 120.80.96.63

VSI name: 755001

MAC address	Link ID/Name	Flags	Next hop
-------------	--------------	-------	----------

d461-fe69-c7d9	0	DL	-
----------------	---	----	---

1cab-3490-7a7c	0	DL	-
----------------	---	----	---

0001-0a0a-0a02	Tunnel17	B	120.80.96.63
----------------	----------	---	--------------

0001-0a0a-0a26	Tunnel17	B	120.80.96.63
----------------	----------	---	--------------

0018-738f-84af	Tunnel17	B	120.80.96.63
----------------	----------	---	--------------

6805-ca19-373b	Tunnel17	B	120.80.96.63
----------------	----------	---	--------------

Tunnel17

Current state: UP

Line protocol state: UP

Description: Tunnel17 Interface

Bandwidth: 64 kbps

Maximum transmission unit: 4434

Internet protocol processing: Disabled

Last clearing of counters: Never

Tunnel source 120.80.172.85, destination 120.80.96.63

Tunnel protocol/transport UDP_VXLAN/IP

Last 300 seconds input rate: 8 bytes/sec, 64 bits/sec, 0 packets/sec

Last 300 seconds output rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec

Input: 68255 packets, 4102968 bytes, 0 drops

Output: 53 packets, 2968 bytes, 0 drops

理论上stp报文是不会通过隧道口去到远端的，为什么会透过来呢？进一步查看上述远端VTEP设备，发现远端设备并没有开启stp！所以远端VTEP设备AC口收到BPDU报文，直接当做普通报文封装传到了S12500-X，同时S12500-X解封装后这个报文并不会再上送cpu，因此不知道是BPDU报文，虽然agg1001关闭了stp，但无法识别所以传给了S6900-F。而反方向S6900-F发给S12500-X的BPDU报文，因为S12500-X开启了stp，因此收到的报文直接丢弃了。所以出现了现场BPDU单通，进程触发dispute保护。

网络应该统一，建议远端VTEP也开启stp，这样BPDU报文就不会通过隧道过来了。

组网问题，Dispute就是因为一边能收到bpdu报文，另一端收不到触发的一种保护机制。排查此类问题的时候使用顺藤摸瓜思路会很有帮助。