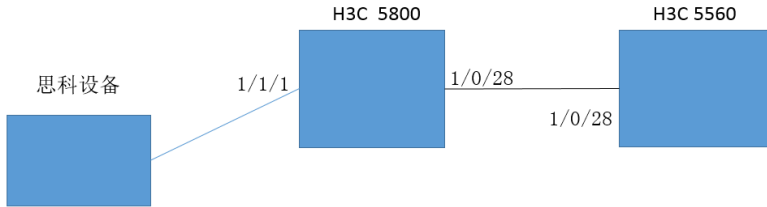


拓扑:



思科-----S5800-32F-----S5560-EI
 新接入一条思科交换机后S5800-32F跟S5560-EI的ospf协议down
 去掉后又正常

S5800-32F日志:

```

3746 %Mar 2 11:54:42:169 2018 BX-4F-40U-NW008-5800-CS OSPF/6/OSPF_LAST_NBR_DOWN:
OSPF 380 Last neighbor down event: Router ID: 211.151.28.72 Local address: 172.30.122.78 Remote address: 172.30.122.77 Reason: DeadInterval timer expired.
3747 %Mar 2 11:54:42:169 2018 BX-4F-40U-NW008-5800-CS OSPF/5/OSPF_NBR_CHG: OSPF 380 Neighbor 172.30.122.77(Vlan-interface101) from Full to Down.
3748 %Mar 2 11:54:51:041 2018 BX-4F-40U-NW008-5800-CS OSPF/5/OSPF_NBR_CHG: OSPF 380 Neighbor 172.30.122.77(Vlan-interface101) from Loading to Full.
  
```

S5560-EI日志:

```

3459 %Mar 2 11:48:54:435 2018 BX-4F-43U-NW008-5560-CS OSPF/6/OSPF_LAST_NBR_DOWN:
OSPF 380 Last neighbor down event: Router ID: 211.151.28.92 Local address: 172.30.122.77 Remote address: 172.30.122.78 Reason: DeadInterval timer expired.
3460 %Mar 2 11:48:54:435 2018 BX-4F-43U-NW008-5560-CS OSPF/5/OSPF_NBR_CHG: OSPF 380 Neighbor 172.30.122.78(Vlan-interface101) from FULL to DOWN.
3476 %Mar 2 11:50:15:463 2018 BX-4F-43U-NW008-5560-CS OSPF/5/OSPF_NBR_CHG: OSPF 380 Neighbor 172.30.122.78(Vlan-interface101) from LOADING to FULL.
  
```

经过对S5560-EI的日志信息和5800设备的配置信息的排查，我们发现:

S5560-EI关键日志

S5560-EI STP部分:

```

*Mar 2 11:48:17:125 2018 BX-4F-43U-NW008-5560-CS KSTG/7/STATE: Set state of [port 966] to driver, with [itemNum 1].//这个966就是1/0/28端口
st 0 state 1 //state 1 代表端口的stp变成block
  
```

```

*Mar 2 11:50:13:145 2018 BX-4F-43U-NW008-5560-CS KSTG/7/STATE: Set state of [port 966] to driver, with [itemNum 1].
st 0 state 3 //state 3 代表端口的stp变成forwarding
  
```

OSPF部分:

```

3459 %Mar 2 11:48:54:435 2018 BX-4F-43U-NW008-5560-CS OSPF/6/OSPF_LAST_NBR_DOWN:
OSPF 380 Last neighbor down event: Router ID: 211.151.28.92 Local address: 172.30.122.77 Remote address: 172.30.122.78 Reason: DeadInterval timer expired.
  
```

```

3476 %Mar 2 11:50:15:463 2018 BX-4F-43U-NW008-5560-CS OSPF/5/OSPF_NBR_CHG: OSPF 380 Neighbor 172.30.122.78(Vlan-interface101) from LOADING to FULL.
  
```

我们发现在S5560-EI设备上每次OSPF断开和恢复，都伴随着端口的STP的状态的变化；进一步对比时间节点发现:每次都是1/0/28变成状态3，即BLOCK状态之后，OSPF邻居断开；而当1/0/28变成状态1，forwarding状态之后，ospf邻居才会恢复；于是我们断定是S5560-EI设备的STP的dispute机制在思科

设备接到S5800-32F上之后将S5560-EI的28端口堵塞掉了，造成OSPF中断了；那么我们知道dispute一般都是因为STP协议的BPDU报文单通导致的，那么现场是如何产生单通的呢？接下来我们对S5800-32F和S5560-EI的设备的配置进行了分析；

设备的配置

S5800-32F关键配置：

```
=====display stp=====
Protocol Status   :disabled
```

```
=====
interface Ten-GigabitEthernet1/1/1
port access vlan 859
=====
interface Ten-GigabitEthernet1/0/28
port link-type trunk
undo port trunk permit vlan 1
port trunk permit vlan 101 859
PVID: 1
=====
```

S5560-EI关键配置：

S5560-EI设备：

```
=====display stp=====
-----[CIST Global Info][Mode MSTP]-----
=====
interface Ten-GigabitEthernet1/0/28
port link-type trunk
undo port trunk permit vlan 1
port trunk permit vlan 101 859
PVID: 1
=====
```

分析：

在S5800-32F设备没开启STP功能，S5560-EI是开启的；那么S5800-32F在处理S5560-EI的BPDU时，是按业务数据处理的：从现场的组网信息来看，S5560-EI的28口发出一个配置BPDU协议报文，在S5800-32F的28口上被当成业务数据报文，根据这个端口的PVID，打上vlan 1的标签，但是S5800-32F的28口还不允许放通vlan 1的数据，于是这个BPDU在这个端口被丢弃，无法送至思科侧进行生成树的计算，而反过来，思科的BPDU是在当前的配置下是可以顺利的到达S5560-EI侧，单通就是这样造成的，加之思科BPDU的优先级小，于是在S5560-EI侧触发了dispute的保护，端口被阻塞，ospf中断；还有就是S5560-EI的设备版本比较老，日志中没有dispute事件的直接记录和体现，建议升级到新版本，以便优化日志体现，对类似的问题进行更好的监控；

将S5800-32F的28口的PVID改成859，消除STP的单通情况，或者开启S5800-32F的STP功能可以解决这个问题

建议合理规划设备的端口配置