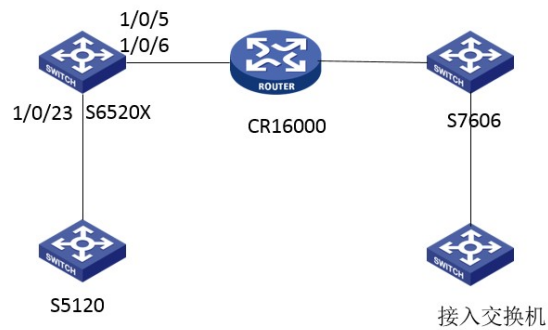


某局点S6520X-EI和7606对接VPLS 不通问题处理经验案例

VPLS 刘文峰 2021-11-30 发表

组网及说明

组网图：



问题描述

现场反馈之前使用CE3000，业务一切都正常，后续设备更新，把6520X替换CE3000 之后，业务出现不通，查看两边的VPLS隧道能正常建立，两端通过隧道都能学习到对端的mac地址。

从反馈信息看到

查看vpls隧道正常

```
=====display l2vpn forwarding pw=====
```

Total number of VSIs: 10

Total number of PWs: 31, 31 up, 0 blocked, 0 down

VSI Name	In/Out Label	NID	Link ID	State
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jf5	131195/131160	2	2048	Up
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能看到两端都能通过隧道学到对方终端的Mac地址

```
<Longtangdafeng-SW-S6520X>display l2vpn mac-address
```

0009-xxxx-xxxx	Dynamic	jf5	XGE1/0/23	Aging
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```
<ZhuanXian-S7606>display l2vpn mac-address
```

000b-xxxx-xxxx	Dynamic	jf5	270	Aging
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过程分析

后续进一步流统发现和 debug arp 发现76下联终端192.168.1.237有发ARP Request报文给6520X下联终端的192.168.1.238，并且该报文正确发送到给192.168.1.238终端，通过在6520X-EI上打印上送CPU的报文确认下联终端也有发起相应的ARP Reply报文回复237终端，但是自身没有发起ARP Request报文去请求237的地址。怀疑报文存在封装的异常导致两端没有相互学到对端的ARP，后续安排现场进行抓包查看报文的具体封装情况。

正常的ARP reply 报文外层TTL为255

No.	Time	Source	Destination	Protocol	Length	Info
8290	2.570120000	Shenzhen	Broadcast	ARP	60	who has
8305	2.570392000	Shenzhen	Broadcast	ARP	82	who has
8306	2.570401000	Shenzhen	Broadcast	ARP	60	who has
8310	2.570460000	Shenzhen	Broadcast	ARP	82	who has
10287	2.607432000	Hangzhou	Broadcast	ARP	82	Gratuitous
11809	2.626893000	60:d3:158	Broadcast	ARP	60	who has
12086	2.644866000	Hangzhou	Broadcast	ARP	82	who has
16006	2.664867000	00:14:108	Broadcast	ARP	82	who has
15096	2.677190000	ac:cb:151	Broadcast	ARP	82	who has
17316	2.702516000	Qilangang	Broadcast	ARP	100	Unknown
18019	2.710891000	Hangzhou	Broadcast	ARP	64	who has
18083	2.711233000	Emerstone	Hangzhou_A0:16:b8	ARP	82	192.168.1.238
18301	2.713757000	38:af:298	Broadcast	ARP	82	who has
22276	2.788152000	Shenzhen	Broadcast	ARP	82	who has
23623	2.888811000	Hangzhou	Broadcast	ARP	60	who has
24365	3.018442000	b8:ea:16a	Broadcast	ARP	60	who has

Packet 11809 details:

- Ethernet II, Src: 60:d3:158, Dst: Broadcast, Type: ARP
- Internet Protocol Version 4, Src: 192.168.1.237, Dst: 192.168.1.238
- ARP Request, Op: 1, Hardware Address: 60:d3:158, Protocol Address: 192.168.1.237

Packet 11809 bytes:

```
0 MultiProtocol Label Switching Header, Label: 1035, Exp: 0, S: 1, TTL: 255
0 MultiProtocol Label Switching Header, Label: 131195, Exp: 0, S: 1, TTL: 255
0 Address Resolution Protocol (Reply/Gratuitous ARP)
```

6520下联终端238回复的arp reply 外层标签TTL值为0:

No.	Time	Source	Destination	Protocol	Length	Info
1596	1.058731000	Hangzhou_Fb:ec:b9	38:97:16	ARP	82	192.168.1.238
60568	3.622409000	Hangzhou_Fb:ec:b9	38:97:16	ARP	82	192.168.1.238
118290	4.799540000	Hangzhou_Fb:ec:b9	38:97:16	ARP	82	192.168.1.238

Packet 1596 details:

- Ethernet II, Src: Hangzhou_Fb:ec:b9, Dst: 38:97:16, Type: ARP
- Internet Protocol Version 4, Src: 192.168.1.238, Dst: 192.168.1.237
- ARP Reply, Op: 2, Hardware Address: Hangzhou_Fb:ec:b9, Protocol Address: 192.168.1.238

Packet 1596 bytes:

```
0 Frame 1596: 82 bytes on wire (656 bits), 82 bytes captured (656 bits) on interface 0
0 MultiProtocol Label Switching Header, Label: 1288, Exp: 0, S: 1, TTL: 0
0 MultiProtocol Label Switching Header, Label: 131160, Exp: 0, S: 1, TTL: 255
0 Address Resolution Protocol (Reply)
```

至此判断出报文存在封装错误，进一步分析发现6520X上之前配置了一条 mpls ttl propagate vpn命令

指导一线工程师undo mpls ttl propagate vpn命令，并在相应的VSI中进行shutdown和undo shutdown命令振荡之后业务回复正常

解决方法

解决办法：

undo mpls ttl propagate vpn命令，并在相应的VSI中进行shutdown和undo shutdown命令振荡之后业务回复正常。

后续版本也会对mpls ttl propagate vpn命令的影响作用进行优化。

