

知 S7500E-LSQM1GP48FD0 MPLS VPN环境不通 (MPLS标签封装错误)

MPLS L3VPN 宣江明 2021-12-14 发表

组网及说明

不涉及

#### 问题描述

两个区县访问S7506E设备连接的态势感知平台正常，但是有个分支连接的用户无法访问S7506E设备上的态势感知平台，该态势感知平台连接在6板卡（FD单板）上面，锐捷这边的用户无法访问6板卡上所有的业务地址，其他两个分支正常访问。

## 过程分析

首先查看路由表正常

### 进查看底层路由表也存在

正常的标签封装应该如下所示，MPLS外层标签未1273，内层标签封装为1229

```
[ZWWW-VPN-XDL-H3C-S7506]dis fib vpn-instance LH_GongXiang_2001 59.227.36.42
```

Destination count: 1 FIB entry count: 1

Flag:

U:Useable G:Gateway H:Host B:Blackhole D:Dynamic S:Static

R:Relay F:FRR

```
Destination/Mask Nexthop Flag OutInterface/Token Label
```

```
59.227.36.0/24 100.79.147.1 UGR 1479 1273
```

```
[ZWWW-VPN-XDL-H3C-S7506]dis mpls fo nhlfe 1479
```

Flags: T - Forwarded through a tunnel

N - Forwarded through the outgoing interface to the nexthop IP address

B - Backup forwarding information

A - Active forwarding information

M - P2MP forwarding information

```
NID Tnl-Type Flag OutLabel Forwarding Info
```

```
-----  
1479 LSP NA 1229 Vlan211 100.79.145.225
```

后续同一线工作人员进行MPLS流统发现报文从我们交换机上发出去了，但是报文的另一端的路由器并没有收到，怀疑是标签转发有问题。尝试在交换机直接起地址进行ping测试发现能通对端终端。

查看slot6单板的硬件表项，发现其硬件封装与路由表项不一致，MPLS内层标签硬件设置为0x4c8(2310)。硬件查表过程如下：

```
[ZWWW-VPN-XDL-H3C-S7506-probe]dis ip vpn-instance instance-name LH_GongXiang_2001
```

VPN-Instance Name and Index : LH\_GongXiang\_2001, 2

Route Distinguisher : 65216:2001

Description : gongxiang

Interfaces : Vlan-interface642, Vlan-interface643,

Vlan-interface645, Vlan-interface646,

Vlan-interface647, Vlan-interface649,

Vlan-interface650, Vlan-interface1641,

Vlan-interface1522, Vlan-interface1525,

Vlan-interface1526, Vlan-interface1527,

Vlan-interface1528, Vlan-interface1533,

Vlan-interface1536, Vlan-interface1539,

Vlan-interface1542, Vlan-interface1543,

Vlan-interface1549, Vlan-interface1550,

Vlan-interface651, Vlan-interface1552,

Vlan-interface1559, Vlan-interface653,

Vlan-interface652, Vlan-interface1561,

Vlan-interface1544, Vlan-interface2018,

Vlan-interface1541, Vlan-interface346,

Vlan-interface1555, Vlan-interface330,

Vlan-interface366, Vlan-interface355,

Vlan-interface347, Vlan-interface440,

Vlan-interface332, Vlan-interface376,

Vlan-interface379, Vlan-interface621,

```
[ZWWW-VPN-XDL-H3C-S7506-probe]debug ipv4-drv show route 2 59.227.36.42 slot 6
```

```
*****
```

```
- IPv4 Route Information Slot 6
```

```
*****
```

```
--- UNIT: 0 ---
```

```
- VRF: 2
```

```
- IP ADDR: 59.227.36.42
```

```
- MASK: 255.255.255.0
```

```
- EGRESS ID: 116680
```

```
- FLAGS: 0xc
```

```
- TUNNEL OPT: 0
```

```
- VC LABEL: 0
- HITBIT: Source Dest
- PRT: 0
```

问题原因: 已知软件缺陷, slot 6单板的mpls外层标签硬件封装错误。新发布版本已经解决该问题, 建议升级版本至最新R7596P10, 或者更换其它类型的单板可以解决。

```
- EGRESS NUM: 0
- EGRESS FLAGS: 0xc000000
- INTF NUM: 4306
- MAC ADDR: 60da-832c-3802
- VLAN: 211
- DMOD: 8
- DPORT: 53
- TRUNK: 0
- FRR LABEL: 1273
```

-----  
\*\*\*\*\*

```
[ZWWW-VPN-XDL-H3C-S7506-probe]b s 6 c 0 d/chg/egr_l3_next_hop/16680
EGR_L3_NEXT_HOP.epipe0[16680]:
<MPLS:VC_AND_SWAP_INDEX=0x4018,MPLS:PW_INIT_NUM=0x18,MPLS:MAC_DA_PROFILE_I
NDEX=1,MPLS:INTF_NUM=0x10d2,MPLS:HG_MODIFY_ENABLE=1,MPLS:HG_L3_OVERRIDE=1,
ENTRY_TYPE=1,>
```

```
[ZWWW-VPN-XDL-H3C-S7506-probe]b s 6 c 0 d/chg/egr_l3_intf/0x10d2
EGR_L3_INTF.epipe0[4306]: <VID=0xd3,VFI=0xd3,TUNNEL_INDEX=7,OVID=0xd3,MPLS_TUNNEL
_INDEX=0x1f,MAC_ADDRESS=0x74eac8cf5c01,IVID_PRESENT_ACTION=2,>
```

```
[[ZWWW-VPN-XDL-H3C-S7506-probe]b s 6 c 0 d/chg/egr_ip_tunnel_mpls/3
EGR_IP_TUNNEL_MPLS.epipe0[3]:
<MPLS_PUSH_ACTION_7=1,MPLS_PUSH_ACTION_6=1,MPLS_PUSH_ACTION_5=1,MPLS_PUS
H_ACTION_4=1,MPLS_PUSH_ACTION_3=1,MPLS_PUSH_ACTION_2=1,MPLS_PUSH_ACTION_1
=1,MPLS_LABEL_7=0x4c6,MPLS_LABEL_6=0x468,MPLS_LABEL_5=0x4ce,MPLS_LABEL_4=0x4cf,
MPLS_LABEL_3=0x4c8,MPLS_LABEL_2=0x5cf,MPLS_LABEL_1=0x4c5,MPLS_EXP_SELECT_7=1,
MPLS_EXP_SELECT_6=1,MPLS_EXP_SELECT_5=1,MPLS_EXP_SELECT_4=1,MPLS_EXP_SELE
CT_3=1,MPLS_EXP_SELECT_2=1,MPLS_EXP_SELECT_1=1,MPLS_ENTRY_7=0x0000000005004
c6,MPLS_ENTRY_6=0x000000000500468,MPLS_ENTRY_5=0x0000000005004ce,MPLS_ENTRY_
4=0x0000000005004cf,MPLS_ENTRY_3=0x0000000005004c8,MPLS_ENTRY_2=0x00000000050
05cf,MPLS_ENTRY_1=0x0000000005004c5,ENTRY_TYPE_COPY=3,ENTRY_TYPE=3>
```

