

知 V7 MSR56对接友商设备无法建立lldp邻居

LLDP 郭尧 2022-07-31 发表

组网及说明



组网如图:

问题描述

V7设备替换V5设备对接华为设备无法建立LLDP邻居，之前V5设备可以建立邻居。

过程分析

MSR56:

```
dis lldp neighbor-information
```

```
LLDP neighbor-information of port xxxx[GigabitEthernet0/1]:
```

```
LLDP agent nearest-bridge:
```

```
LLDP neighbor index : 1 //检测到0/1接口有一个LLDP邻居
```

```
ChassisID/subtype : aaaa-bbbb-cccc/MAC address
```

```
PortID/subtype : GigabitEthernet0/1/Interface name
```

```
Capabilities : Bridge
```

AR3200:

```
display lldp neighbor
```

```
GigabitEthernet0/1 has 0 neighbors
```

```
display lldp statistics
```

```
LLDP statistics global information:
```

```
Statistics for GigabitEthernet0/1:
```

```
Transmitted Frames Total:111111
```

```
Received Frames Total: 111111 Frames Discarded Total: 111111
```

```
Frames Error Total: 111111 TLVs Discarded Total: 111111
```

```
TLVs Unrecognized Total: 0 Neighbors Expired Total: 0 //0/1接口没有检测到邻居
```

因为V5可以正常识别，而V7不可以，所以抓包对比V5设备和V7设备发的LLDP报文如下：

V7 MSR发送的LLDP报文：

```
IEEE - Link Aggregation
> Ieee 802.3 - MAC/PHY Configuration/Status
> Ieee 802.3 - Power Via MDI
> Ieee 802.3 - Maximum Frame Size
> End of LLDPDU

e0 6d 65 6e 74 20 4c 50 0e 04 03 14 01 14 10 0d 05 ment LP- .....
f0 01 c0 a8 0f e6 02 00 00 08 8e 00 fe 09 00 80 c2 .....
00 07 01 00 00 00 00 fe 09 00 12 0f 01 03 6c c1 00 .....1..
10 1e fe 0c 00 12 0f 02 01 01 01 10 00 00 00 fe .....
30 06 00 12 0f 02 00 00 00 .....

```

V5 MSR发送的LLDP报文

```
> Capabilities
> Ieee 802.3 - MAC/PHY Configuration/Status
> Ieee 802.3 - Power Via MDI
> Ieee 802.3 - Link Aggregation
> Ieee 802.3 - Maximum Frame Size
> End of LLDPDU

d0 6f 75 20 48 33 43 20 54 65 63 68 6e 6f 6c 6f 67 ou H3C T echnolog
e0 69 65 73 20 43 6f 2e 2c 20 4c 74 64 2e 0d 0a 0e ies Co., Ltd...
f0 04 00 14 00 14 fe 09 00 12 0f 01 03 6c 03 00 1e .....1..
00 fe 07 00 12 0f 02 01 01 01 fe 09 00 12 0f 03 01 .....
10 00 00 00 00 fe 06 00 12 0f 04 05 dc 00 00 .....

```

排查V5设备lldp发送报文时默认携带的Link aggregation字段在dot3的tlv里面。而V7设备dot1的tlv里面。查询协议标准发现：802.1AB-2005和802.1AB-2009版本lldp协议中dot1和dot3的tlv有变化。802.1AB-2005标准lldp协议中Link aggregation 字段在dot3里面，而802.1AB-2009标准在dot1里面。华为设备端遵循的是2005版的协议，对2009版的协议兼容性不够，直接进行了丢弃，导致无法识别我司设备。

通过命令屏蔽了link aggregation 字段之后，邻居可以识别，却发现了另一个问题，显示信息如下：

```
dis lldp neighbor-information list
```

```
Chassis ID : * -- -- Nearest nontpmr bridge neighbor
```

```
# -- -- Nearest customer bridge neighbor
```

```
Default -- -- Nearest bridge neighbor
```

```
System Name Local Interface Chassis ID Port ID
```

```
MSR5660 GE0/1 eeee-ffff-gggg eeee-ffff-gggg
```

```
xxxxxxxxxxxxx GE0/2 hhhh-iiii-jjjj GigabitEthernet0/2
```

```
//port ID本应该显示对端的端口，MSR5660显示的却是MAC地址。
```

随后在V5和V7设备上：Debugging lldp all

发现V7与V5不同的是：V7建立是MED邻居：

```
*Oct 01 00:00:00:000 1949 AR3200 LLDP/7/Packet sent: -Slot=2;
```

```
Management address interface ID : Unknown
```

Management address OID : 0

Link aggregation supported : Yes

Link aggregation enabled : No

1. 在MSR5600接口配置:

undo link-aggregation disable link-aggregation

禁止发布的link-aggregation的dis1-tlv

2. 在ABG200接口配置: Speed(1000)/Duplex(Full)

undo port-profile med-tlv

禁止发布的PSE tlv

3. PSE power supported : No

配置后问题解决 : No

PSE neighbor information

Chassis ID * -- -- Nearest neighbor

Port power classification: Class 0

Power type -- -- Nearest neighbor

System Name Local Interface Chassis ID Port ID

MSR5600 GE0/0/1 aaaa-bbbb-cccc GigabitEthernet0/1

Priority GE0/0/2 : 0.0 w

Maximum frame size : 1536

Device class : Connectivity device

PoE PSE power source : Primary

Port PSE priority : Critical //表示建立的是Med邻居

而协议规定对于MED邻居,本地端口的PortID显示类型是mac地址,而非接口信息。

