IPV6互联不通

IPv6 郭尧 2024-03-27 发表

组网及说明

不涉及

问题描述

ipv6业务，5560X与6520 ipv6直连不通， 6520与其余型号比如6520 ipv6直连可以通。且这台5560X对接<span lang="EN-US" calibri",sans-serif;color:#1f497d'="" style="margin: 0px; padding: 0px; word-break: break-all;">6520X就可以通，<span lang="EN-US" calibri",sans-serif;color:#1f497d'="" style="margin: 0px; padding: 0px; word-break: break-all;">6520就不行。ipv4的业务都正常。

互连接口为Route-Aggregation 40，带源ping不通回显：

```
The current terminal is disabled to display debugging logs.
<Heshan.134.121>ping ipv6 -c 10 -a 240A:4008:D99:121:2 240A:4008:D99:121:1
Ping6(56 data bytes) 240A:4008:D99:121:2 --> 240A:4008:D99:121:1, press CTRL+C to break
Request time out
Request time out
Request time out
Request time out
Request time out
Request time out
Request time out
Request time out
Request time out

--- Ping6 statistics for 240A:4008:D99:121:1 ---
10 packet(s) transmitted, 0 packet(s) received, 100.0% packet loss
```

过程分析

1、查看ipv6邻居学习情况：

==========display ipv6 neighbors all==========

Type: S-Static D-Dynamic O-Openflow R-Rule IS-Invalid static

IPv6 address MAC address VLAN/VSI Interface State T Aging

xxxxxxxxxxxxxxx 542b-de48-xxxx -- RAGG40 REACH D 601

==========display ipv6 neighbors all==========

Type: S-Static D-Dynamic O-Openflow R-Rule I-Invalid

IPv6 address Link layer VID Interface State T Age

xxxxxxxxxxxxxxx 9820-443b-xxxx N/A RAGG40 STALE D 569

两交换机都能学习到对应表项，且都无误。

2、检查接口下配置：

#

interface Ten-GigabitEthernet1/0/25

port link-mode route

description to-Jiangmen

port link-aggregation group 40

#

interface Route-Aggregation40

description to-Jiangmen

ip address xxxxxxxx 255.255.255.252

pim sm

isis ipv6 enable 1

ipv6 address xxxxxxxxx

#

interface Ten-GigabitEthernet2/0/3

port link-mode route

description to-Heshan

port link-aggregation group 40

#

interface Route-Aggregation40

description to-Heshan

ip address xxxxxxxx 255.255.255.252

pim sm

isis ipv6 enable 1

ipv6 address xxxxxxxxx

接口并无特殊配置.

3、 display stp abnormal-port检查stp情况：

==========

---[Bridge-Aggregation1]---

MST ID	BlockReason	Time
0	Disputed	16:18:25 10/18/2022
0	Disputed	16:17:14 10/18/2022
0	Disputed	16:13:24 10/18/2022

---[Bridge-Aggregation2]---

MST ID	BlockReason	Time
0	Disputed	16:18:25 10/18/2022
0	Disputed	16:17:14 10/18/2022
0	Disputed	16:13:24 10/18/2022

---[Bridge-Aggregation3]---

MST ID	BlockReason	Time
0	Disputed	16:18:25 10/18/2022
0	Disputed	16:17:14 10/18/2022
0	Disputed	16:13:24 10/18/2022

---[Bridge-Aggregation7]---

MST ID	BlockReason	Time
0	Disputed	16:18:25 10/18/2022
0	Disputed	16:13:24 10/18/2022
0	Disputed	16:11:56 10/18/2022

互连接口并无被stp dispute。

4、debugging ipv6 packet查看ipv6报文收发情况：

<5560x>debugging ipv6 packet

<5560x>T M

The current terminal is enabled to display logs.

<5560x>T D

The current terminal is enabled to display debugging logs.

<5560x>ping ipv6 -a xxxxxxx xxxxxx

Ping6(56 data bytes) xxxxxxx--> xxxxxx, press CTRL+C to break

*Mar 14 09:55:47:080 2024 Heshan.134.121 IP6FW/7/IP6FW_PACKET:

 LocalSending, version = 6, traffic class = 0,

 flow label = 0, payload length = 64, protocol = 58, hop limit = 64,

Src = xxxxxxxx, Dst = xxxxxxx,

prompt: Output an IPv6 Packet.

 *Mar 14 09:55:47:080 2024 Heshan.134.121 IP6FW/7/IP6FW_PACKET:

 Sending, interface = Route-Aggregation40, version = 6, traffic class = 0,

flow label = 0, payload length = 64, protocol = 58, hop limit = 64,

Src = xxxxxxxxx, Dst = xxxxxxxxxx,

prompt: Sending the packet from local interface Route-Aggregation40.

<6520>ping ipv6 -a xxxxxxxx xxxxxx

Ping6(56 data bytes) xxxxxxx --> xxxxxxx, press CTRL_C to break

*Mar 14 10:04:56:749 2024 Jiangmen.134.119 IP6FW/7/IP6FW_PACKET:

 LocalSending, version = 6, traffic class = 0,

flow label = 0, payload length = 64, protocol = 58, hop limit = 64,

Src = xxxxx, Dst = xxxxxxx,

prompt: Output an IPv6 Packet.

 *Mar 14 10:04:56:749 2024 Jiangmen.134.119 IP6FW/7/IP6FW_PACKET:

 Sending, interface = Route-Aggregation40, version = 6, traffic class = 0,

flow label = 0, payload length = 64, protocol = 58, hop limit = 64,

Src = xxxxxxxx, Dst = xxxxxxx,

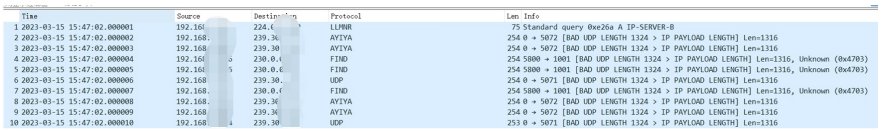
prompt: Sending the packet from local interface Route-Aggregation40.

debug看两边交换机都是有发没收。

<span lang="EN-US" calibri",sans-serif"" style="margin: 0px; padding: 0px; word-break: break-all;">

5、后经远程排查，问题已初步确认：现场S5560X设备g1/0/4存在大量的未知组播组报文，并且设备对应vlan内开启了igmp-snooping相关配置，由于该vlan内无对应的组播接收者，会有大量组播报文上送cpu。这个未知源组播和访问slot1的icmpv6在硬件上是公用一个限速器，导致<span lang="EN-US"

calibri",sans-serif'="" style="margin: 0px; padding: 0px; word-break: break-all;">slot 1上ping S5560X本身接口ipv6地址的报文被挤占丢弃。该问题只影响访问设备本身的非协议<span lang="EN-US" calibri",sans-serif'="" style="margin: 0px; padding: 0px; word-break: break-all;">ipv6报文，过路转发的ipv6报文不受影响。



	Time	Source	Destination	Protocol	Len	Info
1	2023-03-15 15:47:02.000001	192.168.	224.0.	LLMNR	75	Standard query 0xe26a A IP-SERVER-B
2	2023-03-15 15:47:02.000002	192.168.	239.30.	AYIYA	254	0 → 5072 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316
3	2023-03-15 15:47:02.000003	192.168.	239.30.	AYIYA	254	0 → 5072 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316
4	2023-03-15 15:47:02.000004	192.168.	230.0.0.	FIND	254	5800 → 1001 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316, Unknown (0x4703)
5	2023-03-15 15:47:02.000005	192.168.	230.0.0.	FIND	254	5800 → 1001 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316, Unknown (0x4703)
6	2023-03-15 15:47:02.000006	192.168.	239.30.	UDP	254	0 → 5071 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316
7	2023-03-15 15:47:02.000007	192.168.	230.0.0.	FIND	254	5800 → 1001 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316, Unknown (0x4703)
8	2023-03-15 15:47:02.000008	192.168.	239.30.	AYIYA	254	0 → 5072 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316
9	2023-03-15 15:47:02.000009	192.168.	239.30.	AYIYA	254	0 → 5072 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316
10	2023-03-15 15:47:02.000010	192.168.	239.30.	UDP	253	0 → 5071 [BAD UDP LENGTH 1324 > IP PAYLOAD LENGTH] Len=1316

解决方法

两种解决方案：

1、如果端口非正常使用，可以考虑关闭该端口或者让对应组播源不发送这么多组播报文；

2、在端口下配置igmp-snooping source-deny

interface GigabitEthernet1/0/4

port link-mode bridge

description Test

port access vlan 86

igmp-snooping source-deny