

知 某局点S5560X-30C-EI 三层组播业务转发不通

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组网及说明

组播源S---核心 (rp) ---- (vlan42- bagg1) -汇聚- (vlanif359--bagg9) ---- pim-sm----- (vlanif359 - Bagg1) -网关--- (Vlanif 86—bagg2) -----组播接受者

告警信息

告警信息不涉及

问题描述

三层组播业务，组播报文延上述组网经RP、汇聚、网关到接受者
但是组网中组播接受者无法获取组播流量

过程分析

1. 通过流统确认丢包位置发生在汇聚设备上，组播报文进来但是没有出去
2. 检查汇聚设备上的三层组播表项发现组播出接口是vlan86，但是实际应该是vlan359，即组播表项是错误的

(* , 239.12.21.1)

RP: 172.18.239.1

Protocol: pim-sm, Flag: WC

UpTime: 11w:5d

Upstream interface: Vlan-interface42

Upstream neighbor: 172.18.241.49

RPF prime neighbor: 172.18.241.49

Join/Prune FSM: [J]

Downstream interface information:

Total number of downstream interfaces: 2

1: Vlan-interface86

Protocol: igmp, UpTime: 11w:5d, Expires: -

DR state: [NDR]

Join/Prune FSM: [NI]

Assert FSM: [NI]

2: Vlan-interface359

Protocol: pim-sm, UpTime: 06:36:39, Expires: 00:02:51

DR state: [NDR]

Join/Prune FSM: [J]

Assert FSM: [NI]

FSM information for non-downstream interfaces: None

(172.18.240.2, 239.12.21.1)

RP: 172.18.239.1

Protocol: pim-sm, Flag: ACT

UpTime: 11w:5d

Upstream interface: Vlan-interface42

Upstream neighbor: 172.18.241.49

RPF prime neighbor: 172.18.241.49

Join/Prune FSM: [SPT: NJ] [RPT: NP]

Downstream interface information:

Total number of downstream interfaces: 1

1: Vlan-interface86

Protocol: pim-sm, UpTime: 11w:5d, Expires: -

DR state: [NDR]

Join/Prune FSM: [SPT: NI] [RPT: NI]

Assert FSM: [NI]

FSM information for non-downstream interfaces:

1: Vlan-interface359

Protocol: pim-sm

DR state: [NDR]

Join/Prune FSM: [SPT: NI] [RPT: P]

Assert FSM: [NI]

下行口放通了vlan 359和vlan700

#

```
interface Bridge-Aggregation9
description NHGuiC-AS-XiaN-5560
port link-type trunk
undo port trunk permit vlan 1
port trunk permit vlan 359 700
link-aggregation mode dynamic
undo stp enable
```

#

根据表项状态机来看，vlan 359上的RPT状态为Prune状态，即收到下游设备发送的RPT剪枝报文，应该是流量到下游设备后，下游设备发起SPT切换，即会先向RP路径发送RPT剪枝报文，并向SPT路径发送剪枝报文，

我司设备正好在RP路径上，所以收到RPT剪枝报文，删除了出接口。

作为下游的网关5560上表项：发生SPT切换，上游邻居是172.18.241.139，即给172.18.241.139发送了加入，但是实际上139是之前配置的地址，在现网中目前没有这个地址

作为网关5560设备，vlan 359的地址是172.18.241.138，只学到了172.18.241.137的pim邻居，

作为汇聚5560设备，vlan359地址是172.18.241.137，只学到了172.18.241.138的pim邻居

网关设备：

(172.18.240.2, 239.12.21.1)

RP: 172.18.239.1

Protocol: pim-sm, Flag: RPT SPT NONBR ACT 2MVPN

UpTime: 00:01:40

Upstream interface: Vlan-interface359

Upstream neighbor: 172.18.241.139

RPF prime neighbor: NULL

Join/Prune FSM: [SPT: J] [RPT: P]

Downstream interface information:

Total number of downstream interfaces: 1

1: Vlan-interface86

Protocol: pim-sm, UpTime: 00:01:40, Expires: -

DR state: [NDR]

Join/Prune FSM: [SPT: NI] [RPT: NI]

Assert FSM: [NI]

```
interface Vlan-interface359
```

```
description NHGuiC-AS-XiaN-5560
```

```
ip address 172.18.241.138 255.255.255.252
```

```
pim sm
```

```
isis enable 1
```

```
isis ipv6 enable 1
```

```
isis circuit-level level-1
```

```
isis authentication-mode md5 cipher $c$3$ZgTmVCad25XmF2cTKn9S5Ws8MZYBY7m+p1k=
```

```
ipv6 address 240A:400B:625:359::138/64
```

Neighbor: 172.18.241.137

Interface: Vlan-interface359

Uptime: 4d:22h

Expiry time: 00:01:36

DR Priority: 1

Generation ID: 0x71D23755

Holdtime: 105 s

LAN delay: 500 ms

Override interval: 2500 ms

Neighbor tracking: Disabled

Bidirectional PIM: Disabled

RPF proxy vector: Enabled

汇聚5560x上：

```
interface Vlan-interface359
```

```
description NHGuiC-AS-XiaN-5560
```

```
ip address 172.18.241.137 255.255.255.252
pim sm
isis enable 1
isis ipv6 enable 1
isis circuit-level level-1
isis authentication-mode md5 cipher $c$3$2EAYPUm9BH36daun0p2kGbQHqbudRRZttGA=
packet-filter 3001 inbound
ipv6 address 240A:400B:625:359::137/64
```

Neighbor: 172.18.241.138

```
Interface: Vlan-interface359
Uptime: 5d:00h
Expiry time: 00:01:43
DR Priority: 1
Generation ID: 0x288D7A59
Holdtime: 105 s
LAN delay: 500 ms
Override interval: 2500 ms
Neighbor tracking: Disabled
Bidirectional PIM: Disabled
RPF proxy vector: Enabled
```

检查网关上曾经配置过一条静态地址

```
ip route-static 0.0.0.0 0 172.18.241.139
```

网关设备上目前存在到组播源的路由残留，全局路由表中是 没有的，但是组播学习的 路由还是指向139。导致组播选择的到组播源的路由为之前的缺省路由，又因为这个缺省路由的下一跳当前并不存在，导致组播无法发送PIM加入，从而流量无法转发

```
[NHGuiC-AS-XiaN-5560-probe]dis multicast rpf-info 172.18.240.2
```

RPF information about source 172.18.240.2:

```
RPF interface: Vlan-interface359, RPF neighbor: 172.18.241.139
Referenced route/mask: 0.0.0.0/0
Referenced route type: unicast
Route selection rule: preference-preferred
Load splitting rule: disable
Source AS: 0
C-multicast route target: 0x0000000000000000
```

解决方法

规避方案:

网关设备上: 配置一条到组播源的明细路由, 下一跳为172.18.241.137

升级当前推荐版本R6628P47版本解决