

某局点 S12516-X 交换机撤销bgp路由后产生丢包问题

BGP

转发不通

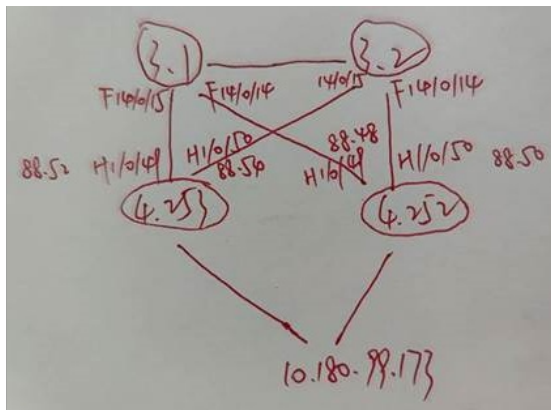
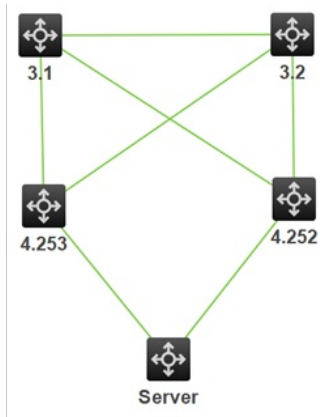
姚智祥

2022-06-22 发表

组网及说明

设备及版本: S12516-X Release 1152

现网拓扑及接口互联关系如下, 3.1和3.2为核心S125设备, 4.253和4.252为两台Tor, Tor和核心跑EBGP, Tor和服务器跑EBGP, 核心间跑IBGP, Tor侧针对核心开了allow-as-loop功能。



告警信息

无

问题描述

客户现有环境中已经存在10.180.96.0/19的路由访问服务器地址10.180.99.173，后因业务要求服务器发布10.180.99.173/32位主机路由，现场反馈当把32位路由撤销后出现访问10.180.99.173约28s左右的不通现象，后自动恢复。

过程分析

1.当服务器发了一条10.180.99.173/32的主机路由后，此时从外部访问这个地址可以ping通，设备表象都是正常的。其中和现场确认了下，10.180.99.173/32的主机路由只发布给4.253的TOR，66和67显示的是vm的地址；未直接发布给4.252的TOR，4.252的10.180.99.173/32路由是从两台核心学到的。

```
<Tool_W-06_D_R08C16-H6805-10.172.4.253.zzzc>display ip routing-table 10.180.96.0 19
```

Summary count : 2				
Destination/Mask	Proto	Pre Cost	NextHop	Interface
10.180.96.0/19	BGP	255 0	10.173.120.66	Vlan100
			10.173.120.67	Vlan100

```
<Tool_W-06_D_R04C18-H6805-10.172.4.252.zzzc>display ip routing-table 10.180.96.0 19
```

Summary count : 2				
Destination/Mask	Proto	Pre Cost	NextHop	Interface
10.180.96.0/19	BGP	255 0	10.173.120.2	Vlan100
			10.173.120.3	Vlan100

```
<Tool_W-06_D_R08C16-H6805-10.172.4.253.zzzc>display ip routing-table 10.180.99.173 32
```

Summary count : 1				
Destination/Mask	Proto	Pre Cost	NextHop	Interface
10.180.99.173/32	BGP	255 0	10.173.120.66	Vlan100

```
<Tool_W-06_D_R04C18-H6805-10.172.4.252.zzzc>display ip routing-table 10.180.99.173 32
```

Summary count : 2				
Destination/Mask	Proto	Pre Cost	NextHop	Interface
10.180.99.173/32	BGP	255 0	10.180.88.49	HGE1/0/49
			10.180.88.51	HGE1/0/50

```
<Tool_W-06_D_R04C18-H6805-10.172.4.252.zzzc>display lldp neighbor-information list
```

Chassis ID : * -- -- Nearest nontpmr bridge neighbor				
# -- -- Nearest customer bridge neighbor				
Default -- -- Nearest bridge neighbor				
Local Interface	Chassis ID	Port ID	System Name	
XGE1/0/1	38ad-bedb-8a8d	b496-914c-9344	fip01.cloud.zzzc.qihoo.net	
XGE1/0/2	38ad-bedb-6df4	b496-9149-4a30	snat01.cloud.zzzc.qihoo.net	
XGE1/0/3	38ad-beda-d3f0	b496-9149-4d50	fip02.cloud.zzzc.qihoo.net	
HGE1/0/49	70f9-6d18-7d56	FortyGigE14/0/14	N_Core-06_D_R16C11-H12516-10.172.3.1.zzzc	
HGE1/0/50	70f9-6d18-7c56	FortyGigE14/0/14	N_Core-06_D_R15C11-H12516-10.172.3.2.zzzc	
HGE1/0/51	70f9-6d18-65b8	FortyGigE6/0/9	W_Core-06_D_R18C17-H12516-10.172.0.1.zzzc	
HGE1/0/52	70f9-6d18-7dd6	FortyGigE6/0/9	W_Core-06_D_R15C17-H12516-10.172.0.2.zzzc	

2.在各个设备上打debug发现，4.253会发撤销消息给两个核心，核心收到后会给核心和TOR发送该路由撤销消息，但此时3.1紧接着会给TOR发一条该路由更新消息，路由下一跳为3.2，导致TOR到10.180.99.173/32的路由都指向向核心，核心上看无32位明细路由，只有10.180.96.0/19的路由指向TOR，导致路由环路丢包。

3.1侧的debug信息

```
[2022-06/14-18:10:35]*Jun 14 18:10:35:179 2022 N_Core-06_D_R16C11-H12516-10.172.3.1.zzzc BGP/7/DEBUG: -MDC=1;
[2022-06/14-18:10:35] BGP.: Recv UPDATE(Withdraw) from peer 10.180.88.52 for destinations:
[2022-06/14-18:10:35] 10.180.99.173/32,
[2022-06/14-18:10:35]
[2022-06/14-18:10:35]*Jun 14 18:10:35:181 2022 N_Core-06_D_R16C11-H12516-10.172.3.1.zzzc BGP/7/DEBUG: -MDC=1;
[2022-06/14-18:10:35] BGP.: Send UPDATE(Withdraw) to update-group 0 for destinations:
[2022-06/14-18:10:35] 10.180.99.173/32,
[2022-06/14-18:10:35]
[2022-06/14-18:10:35]*Jun 14 18:10:35:182 2022 N_Core-06_D_R16C11-H12516-10.172.3.1.zzzc BGP/7/DEBUG: -MDC=1;
[2022-06/14-18:10:35] BGP.: Send UPDATE to update-group 8 for following destinations:
[2022-06/14-18:10:35] Origin : Incomplete
[2022-06/14-18:10:35] AS path : 65012 4172004252 4173120001
[2022-06/14-18:10:35] Next hop : 10.172.3.2
[2022-06/14-18:10:35] 10.180.99.173/32,
[2022-06/14-18:11:02]*Jun 14 18:11:02:206 2022 N_Core-06_D_R16C11-H12516-10.172.3.1.zzzc BGP/7/DEBUG: -MDC=1;
[2022-06/14-18:11:02] BGP.: Send UPDATE(Withdraw) to update-group 8 for destinations:
[2022-06/14-18:11:02] 10.180.99.173/32,
[2022-06/14-18:11:02]
[2022-06/14-18:11:02]*Jun 14 18:11:02:711 2022 N_Core-06_D_R16C11-H12516-10.172.3.1.zzzc BGP/7/DEBUG: -MDC=1;
[2022-06/14-18:11:02] BGP.: Recv UPDATE(Withdraw) from peer 10.180.88.52 for destinations:
[2022-06/14-18:11:02] 10.180.99.173/32,
```

解决方法-06_D_R16C11-H12516-10.172.3.1.zzzc>display bgp update-group ipv4

Update-group ID: 0

现场可以通过:

Type: IBGP link

1.取消allow-as-loop功能,使bgp能够自我防环;

4-byte AS number: Supported

2.配置route-update-interval 0解决撤销消息被抑制的问题。

Minimum time between advertisements: 15 seconds

Advertising community: Yes

Export route policy: 30

OutQ: 0

Members: 3

10.172.0.2

10.172.3.2

10.172.0.1

Update-group ID: 8

Type: EBGp link

4-byte AS number: Supported

Minimum time between advertisements: 30 seconds

OutQ: 0

Members: 2

10.180.88.48

10.180.88.52

Update-group ID: 8

Type: EBGp link

4-byte AS number: Supported

Minimum time between advertisements: 30 seconds

OutQ: 0

Members: 2

10.180.88.48

10.180.88.52

<N_Core-06_D_R16C11-H12516-10.172.3.1.zzzc>display arp 10.180.88.48

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

IP address MAC address VID Interface/Link ID Aging Type

10.180.88.48 60db-15dd-d4cd N/A FGE14/0/14 20 D

<N_Core-06_D_R16C11-H12516-10.172.3.1.zzzc>display current-configuration interface FortyGigE

14/0/14

#

interface FortyGigE14/0/14

port link-mode route

description To-Tool_W-06_D_R04C18-H6805-10.172.4.252.zzzc-Hun-1/0/49

ip address 10.180.88.49 255.255.255.254

#

4.252侧的debug消息

[2022-06/14-18:10:35]*Jun 14 18:10:35:184 2022 Tool_W-06_D_R04C18-H6805-10.172.4.252.zzzc

BGP/7/DEBUG:

[2022-06/14-18:10:35] BGP.: Recv UPDATE from peer 10.180.88.49 with following destinations:

[2022-06/14-18:10:35] Update message length : 56

[2022-06/14-18:10:35] Origin : Incomplete

[2022-06/14-18:10:35] AS path : 65012 4172004252 4173120001

[2022-06/14-18:10:35] Next hop : 10.180.88.49

[2022-06/14-18:10:35] 10.180.99.173/32 PathID 0 ,

[2022-06/14-18:10:35]

[2022-06/14-18:10:35]*Jun 14 18:10:35:186 2022 Tool_W-06_D_R04C18-H6805-10.172.4.252.zzzc

BGP/7/DEBUG:

[2022-06/14-18:10:35] BGP.: Recv UPDATE from peer 10.180.88.51 with following destinations:

[2022-06/14-18:10:35] Update message length : 56

[2022-06/14-18:10:35] Origin : Incomplete

[2022-06/14-18:10:35] AS path : 65012 4172004252 4173120001

[2022-06/14-18:10:35] Next hop : 10.180.88.51

[2022-06/14-18:10:35] 10.180.99.173/32 PathID 0 ,

[2022-06/14-18:11:02]*Jun 14 18:11:02:208 2022 Tool_W-06_D_R04C18-H6805-10.172.4.252.zzzc

BGP/7/DEBUG:

[2022-06/14-18:11:02] BGP.: Recv UPDATE(Withdraw) from peer 10.180.88.49 for destinations:

[2022-06/14-18:11:02] 10.180.99.173/32 PathID 0 ,

