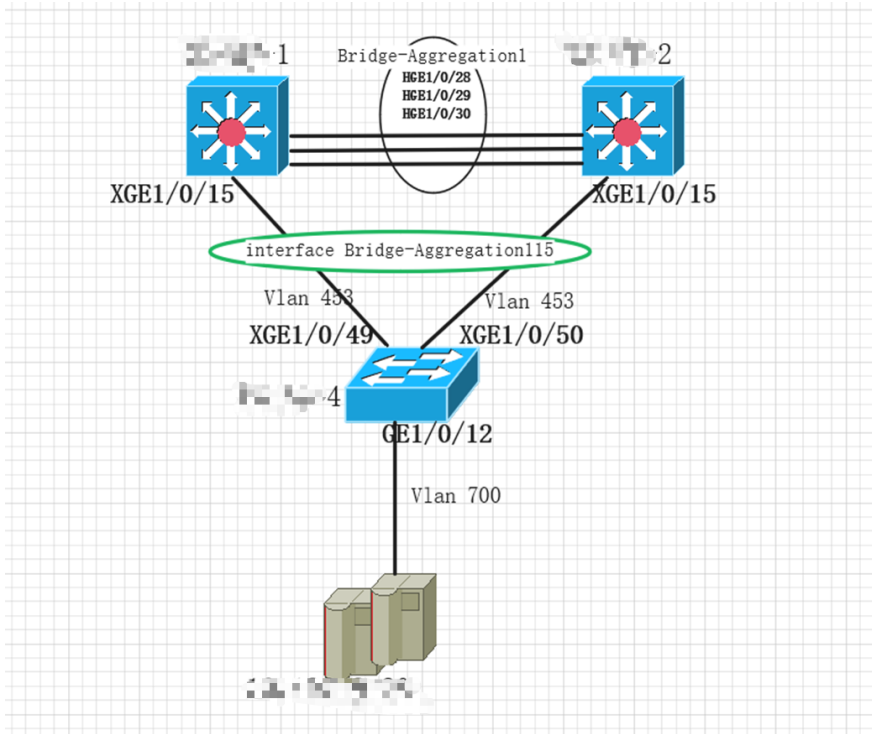


交换机接口开启ARP代理导致直连设备不通的问题

ARP M-LAG/DRNI 杨坤 2023-07-25 发表

组网及说明



告警信息

不涉及

问题描述

拓扑图中1号交换机和2号交换机 M-LAG组网对接下连4号交换机，现场问题现象是2号交换机无法ping通下连的4号交换机。

过程分析

M-LAG编号为2的交换机ping下连编号为4(10.192.8.20)的交换机 ping不通，在编号为2交换机上查看学习下连交换机的ARP表项是发现从二层聚合组1中学习到的，并不是直接学习，学习到的MAC地址也不是真实的MAC地址。

```
<SHTZA3-TG-HJ56805-2_T203F1101U>
<SHTZA3-TG-HJ56805-2_T203F1101U>dis arp int b 1
Type: S-Static D-Dynamic O-Openflow R-Rule M-Multiport I-Invalid
IP address MAC address VLAN/VSI name Interface Aging Type
172.31.109.50 0000-5e00-0133 451 BAGG1 770 D
172.31.109.252 8061-6c76-91c3 451 BAGG1 1193 D
172.31.103.81 0000-5e00-0134 452 BAGG1 1063 D
172.31.103.82 0000-5e00-0134 452 BAGG1 712 D
172.31.103.140 0000-5e00-0134 452 BAGG1 918 D
172.31.109.252 8061-6c76-91c3 451 BAGG1 1196 D
10.192.8.20 0000-5e00-0135 453 BAGG1 1175 D
10.192.8.26 0000-5e00-0135 453 BAGG1 1186 D
10.192.8.26 0000-5e00-0135 453 BAGG1 1186 D
10.192.8.58 0000-5e00-0135 453 BAGG1 1192 D
10.192.8.74 0000-5e00-0135 453 BAGG1 1170 D
<SHTZA3-TG-HJ56805-2_T203F1101U>
<SHTZA3-TG-HJ56805-2_T203F1101U>
<SHTZA3-TG-HJ56805-2_T203F1101U>ping 10.192.8.20
Ping 10.192.8.20 (10.192.8.20): 56 data bytes, press CTRL+C to break
Request time out
Request time out
Request time out
--- Ping statistics for 10.192.8.20 ---
3 packet(s) transmitted, 0 packet(s) received, 100.0% packet loss
<SHTZA3-TG-HJ56805-2_T203F1101U>
<SHTZA3-TG-HJ56805-2_T203F1101U>
<SHTZA3-TG-HJ56805-2_T203F1101U>sys
System View: return to User View with Ctrl+z.
[SHZTA3-TG-HJ56805-2_T203F1101U]
[SHZTA3-TG-HJ56805-2_T203F1101U]
[SHZTA3-TG-HJ56805-2_T203F1101U]ping 10.192.8.20
Ping 10.192.8.20 (10.192.8.20): 56 data bytes, press CTRL+C to break
Request time out
Request time out
--- Ping statistics for 10.192.8.20 ---
2 packet(s) transmitted, 0 packet(s) received, 100.0% packet loss
[SHZTA3-TG-HJ56805-2_T203F1101U]
```

发现编号为2的交换机学习的ARP表项异常，并非直接学习的。删除从BAGG1中学习到下连设备的ARP表项后又发现2号交换机又能够直接学习到下连设备的ARP表项，且学习到的MAC地址有变化，ping测试无问题。

```
<SHTZA3-TG-HJ56805-2_T203F1101U>dis arp int b115
Type: S-Static D-Dynamic O-Openflow R-Rule M-Multiport I-Invalid
IP address MAC address VLAN/VSI name Interface Aging Type
10.192.8.2 3cec-ef8e-acda 453 BAGG115 1158 D
10.192.8.6 2cea-7f5e-09bf 453 BAGG115 1192 D
10.192.8.10 a8a1-59f2-94f8 453 BAGG115 1186 D
10.192.8.12 a8a1-59f2-94bd 453 BAGG115 1171 D
10.192.8.20 5811-22d9-12b0 453 BAGG115 1181 D
10.192.8.22 5811-2294-941a 453 BAGG115 1156 D
10.192.8.26 5811-2294-948f 453 BAGG115 1157 D
10.192.8.48 3cec-ef97-f804 453 BAGG115 911 D
10.192.8.58 a036-bcad-5afe 453 BAGG115 1167 D
10.192.8.74 08f1-eaee-e94c 453 BAGG115 1165 D
<SHTZA3-TG-HJ56805-2_T203F1101U>
<SHTZA3-TG-HJ56805-2_T203F1101U>
<SHTZA3-TG-HJ56805-2_T203F1101U>
<SHTZA3-TG-HJ56805-2_T203F1101U>ping 10.192.8.26
Ping 10.192.8.26 (10.192.8.26): 56 data bytes, press CTRL+C to break
56 bytes from 10.192.8.26: icmp_seq=0 ttl=64 time=0.487 ms
56 bytes from 10.192.8.26: icmp_seq=1 ttl=64 time=0.456 ms
56 bytes from 10.192.8.26: icmp_seq=2 ttl=64 time=0.439 ms
56 bytes from 10.192.8.26: icmp_seq=3 ttl=64 time=0.494 ms
56 bytes from 10.192.8.26: icmp_seq=4 ttl=64 time=0.400 ms
--- Ping statistics for 10.192.8.26 ---
5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss
round-trip min/avg/max/std-dev = 0.400/0.455/0.494/0.034 ms
<SHTZA3-TG-HJ56805-2_T203F1101U>ping 10.192.8.20
Ping 10.192.8.20 (10.192.8.20): 56 data bytes, press CTRL+C to break
56 bytes from 10.192.8.20: icmp_seq=0 ttl=63 time=0.742 ms
56 bytes from 10.192.8.20: icmp_seq=1 ttl=63 time=0.547 ms
56 bytes from 10.192.8.20: icmp_seq=2 ttl=63 time=0.641 ms
56 bytes from 10.192.8.20: icmp_seq=3 ttl=63 time=0.586 ms
56 bytes from 10.192.8.20: icmp_seq=4 ttl=63 time=0.576 ms
--- Ping statistics for 10.192.8.20 ---
5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss
round-trip min/avg/max/std-dev = 0.547/0.618/0.742/0.069 ms
<SHTZA3-TG-HJ56805-2_T203F1101U>
```

但过了一段时间后2号交换机又ping不通4号交换机，发现学习到的MAC都不是设备的实际MAC，怀疑该现象与ARP代理相关。

检查配置：

```
#
interface Vlan-interface453
description TG-New_TZA3
private-vlan secondary 700 to 749
ip address 10.192.8.26 255.255.255.0
vrrp vrid 53 virtual-ip 10.192.8.26
vrrp vrid 53 timer advertise 350
local-proxy-arp enable
ip policy-based-route To_FW
#
```

将接口ARP代理关闭掉后恢复正常。

解决方法

将交换机接口的arp代理功能关闭后ARP表项学习正常，编号2交换机ping编号4交换机测试正常。

