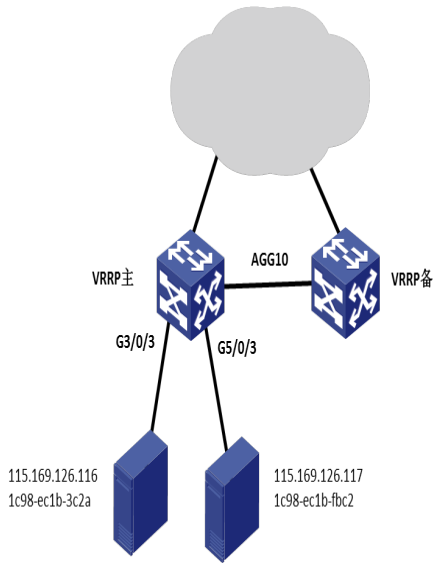


组网拓扑:



如图,某局点两台S12508F-AF作为VRRP的主备,同时作为下行服务器的网关,两台服务器同接在VRRP主上,上行等价链路分别连接到VRRP主备。

客户表示之前在服务器侧抓包的时候,抓到了发往同网段的其他服务器的报文。故而查设备上的mac表和arp表的情况,发现有ARP表项,但是没有MAC表项,理论上来说这没关系,因为S12508F-AF是作为服务器的网关的,直接查ARP表项就可以。

1、开始是没有mac表的,第一次ping通后,查看有服务器的mac表,等待一个mac表老化时间后,再查看的时候,mac表消失,arp表正常,重新ping之后,mac表未生成。这个现象是正常的,这个S125 X/S125F的一个机制:默认MAC地址学习是出接口学习,不是传统的在入接口学习源MAC。但从客户那边反馈的抓包来看,在115.169.126.117侧的服务器确实抓到了去往服务器115.169.126.116的报文,抓包截图如下:

No.	Time	Source	Destination	Protocol	Length	Info
1	2017-04-10 15:11:08.255420	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
2	2017-04-10 15:11:09.255390	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
3	2017-04-10 15:11:09.994907	115.169.126.204	115.169.126.116	DIAMETE	206	cmd-Device-watchdog Answer(280) Flags=---- app=Diameter Comm
4	2017-04-10 15:11:10.113154	115.169.126.117	115.169.126.117	DIAMETE	194	cmd-Device-watchdog Request(280) Flags=R--- app=Diameter Comm
5	2017-04-10 15:11:10.115761	115.169.126.204	115.169.126.117	TCP	66	33344->3868 [ACK] Seq=1 Ack=129 Win=24605 Len=0 TSval=37933901
6	2017-04-10 15:11:10.113855	115.169.126.204	115.169.126.117	DIAMETE	206	cmd-Device-watchdog Answer(280) Flags=---- app=Diameter Comm
7	2017-04-10 15:11:10.154311	115.169.126.117	115.169.126.204	TCP	66	3868->33344 [ACK] Seq=129 Ack=141 Win=14480 Len=0 TSval=276877
8	2017-04-10 15:11:10.255438	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
9	2017-04-10 15:11:11.255443	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
10	2017-04-10 15:11:12.255473	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
11	2017-04-10 15:11:13.255530	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
12	2017-04-10 15:11:14.253495	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
13	2017-04-10 15:11:15.255507	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
14	2017-04-10 15:11:16.255532	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
15	2017-04-10 15:11:17.255579	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
16	2017-04-10 15:11:18.255631	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
17	2017-04-10 15:11:18.736478	84d9-31e8-0cf9	1c98-ec1b-3c2a	ARP	60	Who has 115.169.126.116? Tell 115.169.126.115
18	2017-04-10 15:11:19.255602	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)
19	2017-04-10 15:11:20.030112	115.169.126.117	115.169.126.34	DIAMETE	194	cmd-Device-watchdog Request(280) Flags=R--- app=Diameter Comm
20	2017-04-10 15:11:20.030666	115.169.126.34	115.169.126.117	DIAMETE	206	cmd-Device-watchdog Answer(280) Flags=---- app=Diameter Comm
21	2017-04-10 15:11:20.072666	115.169.126.117	115.169.126.34	TCP	66	48072->3868 [ACK] Seq=129 Ack=141 Win=14600 Len=0 TSval=276877
22	2017-04-10 15:11:20.255633	115.169.126.114	224.0.0.18	VRRP	60	Announcement (v3)

2、从抓包来看,确实泛洪了,因为是单播流量,所有在VRRP主上这条流肯定是未知单播,否则不会泛洪。从上面的截图可以看到,泛洪报文的源MAC是84d9-31e8-0cf9,这个MAC是VRRP备对应vlan虚接口的MAC:

```

备上vlan 2016虚接口
Vlan-interface2016
Current state: UP
Line protocol state: UP
Description: pT:Media-DNS01AAA
Bandwidth: 10000000 kbps
Maximum transmission unit: 1500
Internet address: 115.169.126.115/28 (primary)
IP packet frame type: Ethernet II, hardware address:84d9-31e8-0cf9
    
```

IPv6 packet frame type: Ethernet II, hardware address:84d9-31e8-0cf9

Last clearing of counters: Never

去往115.169.126.116的流量从上行负载链路hash过来，从备进来的流量都广播了，而从主进来的流量都是单播转发出去。根据报文的源MAC就可以区别从主还是备进来的流量。

3、这里在回到组网上，两个服务器都是挂在VRRP主下面的，所有从VRRP备进来的流量查ARP表项发现出接口是互联的AGG10口，到VRRP主上在进行二层转发，那因为没有MAC表项，所以出现泛洪的现象。

对于客户的这种组网，建议修改MAC地址学习方式传统入端口学习源MAC的方式，命令：`mac-addresses mac-learning ingress`。