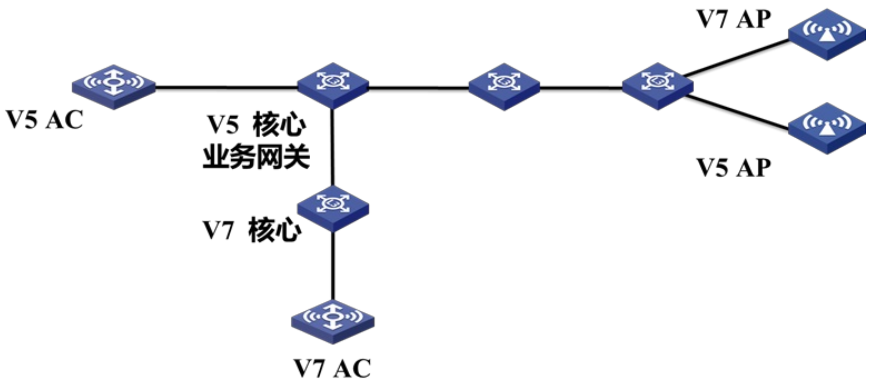
某局点终端信号v5切v7掉线问题

wlan接入 **shawccccc** 2023-08-14 发表

组网及说明

V7 AC：LSUM1WCMX20RT； V5 AC：LSU3WCMD02509P68 集中转发


V7 AP
V5 AC
V5 核心
业务网关
V5 AP
V7 核心
V7 AC

问题描述

终端从V5设备切换v7设备，发生连接后ping网关丢包现象，一般故障发生10分钟之内恢复正常。现场终端从V7切换至V5设备或单接V7设备下都正常使用。

过程分析

（1）　断开V5连V7ping网关，网关抓包

由于是集中转发，业务报文需走capwap隧道，因此有线侧会抓到带UDP报文头的capwap封装报文。

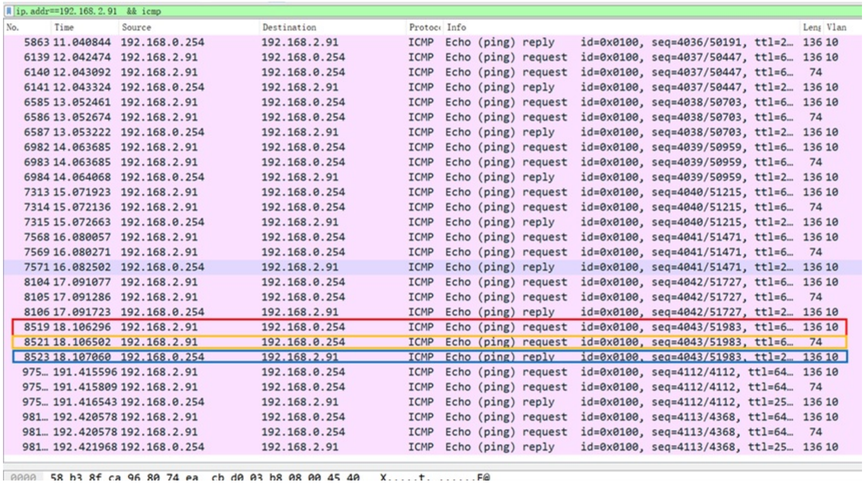
1、 终端连接在V7 AP上，ping测试时IMCP包首先被封装去往V7 AC（红色路径，带封装）

2、 经V7 AC解封装后，发往网关（黄色路径，不带封装）

3、 网关进行回复（绿色路径，不带封装）

4、 报文经由V7 AC封装后发回终端（蓝色路径，带封装）

虽然绿色报文可能由于未知原因没抓到，但是最后的带封装蓝色报文证实了IMCP包已由V7 AC转发



```
ip.addr==192.168.2.91  && icmp
No.   Time      Source        Destination   Protoc Info                                                             Leng Vlan
 5863 11.040844 192.168.0.254 192.168.2.91  ICMP  Echo (ping) reply    id=0x0100, seq=4036/50191, ttl=2…  136 10
 6139 12.042474 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4037/50447, ttl=6…  136 10
 6140 12.043092 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4037/50447, ttl=6…   74
 6141 12.043324 192.168.0.254 192.168.2.91  ICMP  Echo (ping) reply    id=0x0100, seq=4037/50447, ttl=2…  136 10
 6585 13.052461 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4038/50703, ttl=6…  136 10
 6586 13.052674 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4038/50703, ttl=6…   74
 6587 13.053222 192.168.0.254 192.168.2.91  ICMP  Echo (ping) reply    id=0x0100, seq=4038/50703, ttl=2…  136 10
 6982 14.063685 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4039/50959, ttl=6…  136 10
 6983 14.063685 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4039/50959, ttl=6…   74
 6984 14.064068 192.168.0.254 192.168.2.91  ICMP  Echo (ping) reply    id=0x0100, seq=4039/50959, ttl=2…  136 10
 7313 15.071923 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4040/51215, ttl=6…  136 10
 7314 15.072136 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4040/51215, ttl=6…   74
 7315 15.072663 192.168.0.254 192.168.2.91  ICMP  Echo (ping) reply    id=0x0100, seq=4040/51215, ttl=2…  136 10
 7568 16.080057 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4041/51471, ttl=6…  136 10
 7569 16.080271 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4041/51471, ttl=6…   74
 7571 16.082502 192.168.0.254 192.168.2.91  ICMP  Echo (ping) reply    id=0x0100, seq=4041/51471, ttl=2…  136 10
 8104 17.091077 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4042/51727, ttl=6…  136 10
 8105 17.091286 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4042/51727, ttl=6…   74
 8106 17.091723 192.168.0.254 192.168.2.91  ICMP  Echo (ping) reply    id=0x0100, seq=4042/51727, ttl=2…  136 10
 8519 18.106296 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4043/51983, ttl=6…  136 10
 8521 18.106502 192.168.2.91  192.168.0.254 ICMP  Echo (ping) request  id=0x0100, seq=4043/51983, ttl=6…   74
 8523 18.107060 192.168.0.254 192.168.2.91  ICMP  Echo (ping) reply    id=0x0100, seq=4043/51983, ttl=2…  136 10
 975… 191.415596 192.168.2.91  192.168.0.254 ICMP Echo (ping) request  id=0x0100, seq=4112/4112, ttl=64…  136 10
 975… 191.415809 192.168.2.91  192.168.0.254 ICMP Echo (ping) request  id=0x0100, seq=4112/4112, ttl=64…   74
 975… 191.416543 192.168.0.254 192.168.2.91  ICMP Echo (ping) reply    id=0x0100, seq=4112/4112, ttl=25…  136 10
 981… 192.420578 192.168.2.91  192.168.0.254 ICMP Echo (ping) request  id=0x0100, seq=4113/4368, ttl=64…  136 10
 981… 192.420578 192.168.2.91  192.168.0.254 ICMP Echo (ping) request  id=0x0100, seq=4113/4368, ttl=64…   74
 981… 192.421968 192.168.0.254 192.168.2.91  ICMP Echo (ping) reply    id=0x0100, seq=4113/4368, ttl=25…  136 10

0000  58 b3 8f ca 96 80 74 ea  cb d0 03 b8 08 00 45 40   X.....t.......E@
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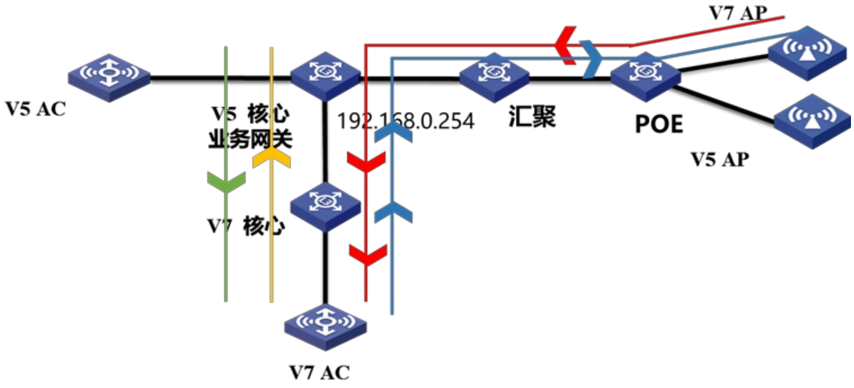
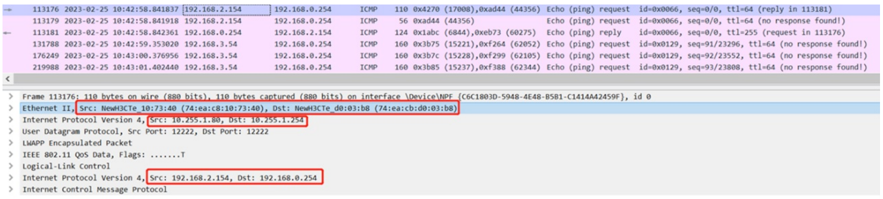


（2）断开V5连V7ping网关，汇聚抓包

1. 由于终端ping网关，在网关-V7 AC之间抓包，V7 AC已将封装后的ping回包送至网关设备。
2. 故计划汇聚（上联网关）端口上抓包，但只抓到了终端request请求报文，未见核心出来的reply回复报文。
3. 交换机从V5核心上看底层arp和MAC表项,未见异常。
4. **同时发现终端从V5-V7，连接上V7ping不通网关时，在V5 AC上删除client 表项，故障消失。**

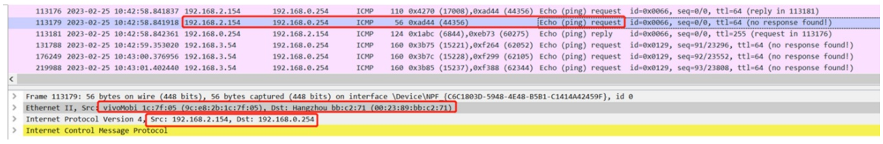
（此刻终端连接在V7上，继续确认与交换机转发表项是否存在关联）。

（3）再次抓包分析：



```
113176 2023-02-25 10:42:58.841837 192.168.2.154  192.168.0.254  ICMP  110 0x4270 (17008),0xad44 (44356) Echo (ping) request  id=0x0066, seq=0/0, ttl=64 (reply in 113181)
113179 2023-02-25 10:42:58.841918 192.168.2.154  192.168.0.254  ICMP   56 0xad44 (44356)                Echo (ping) request  id=0x0066, seq=0/0, ttl=64 (no response found!)
113181 2023-02-25 10:42:58.842361 192.168.0.254  192.168.2.154  ICMP  124 0x1abc (6844),0xeb73 (60275)   Echo (ping) reply    id=0x0066, seq=0/0, ttl=255 (request in 113176)
131788 2023-02-25 10:42:59.353020 192.168.3.54   192.168.0.254  ICMP  160 0x3b75 (15221),0xf264 (62052) Echo (ping) request  id=0x0129, seq=91/23296, ttl=64 (no response found!)
176249 2023-02-25 10:43:00.376956 192.168.3.54   192.168.0.254  ICMP  160 0x3b7c (15228),0xf299 (62105) Echo (ping) request  id=0x0129, seq=92/23552, ttl=64 (no response found!)
219988 2023-02-25 10:43:01.402440 192.168.3.54   192.168.0.254  ICMP  160 0x3b85 (15237),0xf388 (62344) Echo (ping) request  id=0x0129, seq=93/23808, ttl=64 (no response found!)

> Frame 113176: 110 bytes on wire (880 bits), 110 bytes captured (880 bits) on interface \Device\NPF_{C6C1803D-5948-4E48-B5B1-C1414A42459F}, id 0
> Ethernet II, Src: NewH3CTe_10:73:40 (74:ea:c8:10:73:40), Dst: NewH3CTe_d0:03:b8 (74:ea:cb:d0:03:b8)
> Internet Protocol Version 4, Src: 10.255.1.80, Dst: 10.255.1.254
> User Datagram Protocol, Src Port: 12222, Dst Port: 12222
> LWAPP Encapsulated Packet
> IEEE 802.11 QoS Data, Flags: .......T
> Logical-Link Control
> Internet Protocol Version 4, Src: 192.168.2.154, Dst: 192.168.0.254
> Internet Control Message Protocol
```



```
113176 2023-02-25 10:42:58.841837 192.168.2.154  192.168.0.254  ICMP  110 0x4270 (17008),0xad44 (44356) Echo (ping) request  id=0x0066, seq=0/0, ttl=64 (reply in 113181)
113179 2023-02-25 10:42:58.841918 192.168.2.154  192.168.0.254  ICMP   56 0xad44 (44356)                Echo (ping) request  id=0x0066, seq=0/0, ttl=64 (no response found!)
113181 2023-02-25 10:42:58.842361 192.168.0.254  192.168.2.154  ICMP  124 0x1abc (6844),0xeb73 (60275)   Echo (ping) reply    id=0x0066, seq=0/0, ttl=255 (request in 113176)
131788 2023-02-25 10:42:59.353020 192.168.3.54   192.168.0.254  ICMP  160 0x3b75 (15221),0xf264 (62052) Echo (ping) request  id=0x0129, seq=91/23296, ttl=64 (no response found!)
176249 2023-02-25 10:43:00.376956 192.168.3.54   192.168.0.254  ICMP  160 0x3b7c (15228),0xf299 (62105) Echo (ping) request  id=0x0129, seq=92/23552, ttl=64 (no response found!)
219988 2023-02-25 10:43:01.402440 192.168.3.54   192.168.0.254  ICMP  160 0x3b85 (15237),0xf388 (62344) Echo (ping) request  id=0x0129, seq=93/23808, ttl=64 (no response found!)

> Frame 113179: 56 bytes on wire (448 bits), 56 bytes captured (448 bits) on interface \Device\NPF_{C6C1803D-5948-4E48-B5B1-C1414A42459F}, id 0
> Ethernet II, Src: vivoMobi_1c:7f:05 (9c:e8:2b:1c:7f:05), Dst: Hangzhou_bb:c2:71 (00:23:89:bb:c2:71)
> Internet Protocol Version 4, Src: 192.168.2.154, Dst: 192.168.0.254
> Internet Control Message Protocol
```

发现ICMP转发的目的mac异常，不是网关的地址，而是V5 AC的地址

排查发现V7 AP的管理VLAN的地址池在V5 AC上，同时网关也是V5 AC，所以AP的capwap报文都会上送V5 AC网关进行处理

解决方法

修改网关的ip地址，让ip地址在核心上