

# 某局点WX3510H苹果终端接在部分ap 5G射频口下存在时延大丢包的经验处理案例

wlan接入 孙轶宁 2020-07-30 发表

## 组网及说明

AC型号WX3510H, AP型号WA5320-C

## 问题描述

苹果终端接在部分AP 5G射频口下会不定时出现时延大丢包的问题。

```
charles -- ping 10.100.12.1 -- 76x25
Request timeout for icmp_seq 13907
Request timeout for icmp_seq 13908
Request timeout for icmp_seq 13909
Request timeout for icmp_seq 13910
Request timeout for icmp_seq 13911
64 bytes from 10.100.12.1: icmp_seq=13890 ttl=255 time=22560.734 ms
64 bytes from 10.100.12.1: icmp_seq=13891 ttl=255 time=21560.579 ms
64 bytes from 10.100.12.1: icmp_seq=13893 ttl=255 time=19558.966 ms
64 bytes from 10.100.12.1: icmp_seq=13894 ttl=255 time=18558.694 ms
64 bytes from 10.100.12.1: icmp_seq=13895 ttl=255 time=17553.447 ms
64 bytes from 10.100.12.1: icmp_seq=13896 ttl=255 time=16551.442 ms
64 bytes from 10.100.12.1: icmp_seq=13897 ttl=255 time=15547.931 ms
64 bytes from 10.100.12.1: icmp_seq=13898 ttl=255 time=14546.783 ms
64 bytes from 10.100.12.1: icmp_seq=13899 ttl=255 time=13543.726 ms
64 bytes from 10.100.12.1: icmp_seq=13900 ttl=255 time=12549.324 ms
64 bytes from 10.100.12.1: icmp_seq=13901 ttl=255 time=11547.889 ms
64 bytes from 10.100.12.1: icmp_seq=13902 ttl=255 time=10545.180 ms
64 bytes from 10.100.12.1: icmp_seq=13903 ttl=255 time=9540.175 ms
64 bytes from 10.100.12.1: icmp_seq=13913 ttl=255 time=48.127 ms
64 bytes from 10.100.12.1: icmp_seq=13914 ttl=255 time=121.647 ms
64 bytes from 10.100.12.1: icmp_seq=13915 ttl=255 time=2.336 ms
64 bytes from 10.100.12.1: icmp_seq=13916 ttl=255 time=4.726 ms
64 bytes from 10.100.12.1: icmp_seq=13917 ttl=255 time=0.450 ms
64 bytes from 10.100.12.1: icmp_seq=13918 ttl=255 time=5.204 ms
64 bytes from 10.100.12.1: icmp_seq=13919 ttl=255 time=5.454 ms
```

```
charles -- -bash -- 76x25
64 bytes from 10.100.12.1: icmp_seq=153 ttl=255 time=123.965 ms
64 bytes from 10.100.12.1: icmp_seq=154 ttl=255 time=145.029 ms
64 bytes from 10.100.12.1: icmp_seq=155 ttl=255 time=188.478 ms
64 bytes from 10.100.12.1: icmp_seq=156 ttl=255 time=2.356 ms
64 bytes from 10.100.12.1: icmp_seq=157 ttl=255 time=3.250 ms
64 bytes from 10.100.12.1: icmp_seq=158 ttl=255 time=3.525 ms
64 bytes from 10.100.12.1: icmp_seq=159 ttl=255 time=2.655 ms
64 bytes from 10.100.12.1: icmp_seq=160 ttl=255 time=4.177 ms
64 bytes from 10.100.12.1: icmp_seq=161 ttl=255 time=22.898 ms
64 bytes from 10.100.12.1: icmp_seq=162 ttl=255 time=3.555 ms
64 bytes from 10.100.12.1: icmp_seq=163 ttl=255 time=3.286 ms
64 bytes from 10.100.12.1: icmp_seq=164 ttl=255 time=2.903 ms
64 bytes from 10.100.12.1: icmp_seq=165 ttl=255 time=3.037 ms
64 bytes from 10.100.12.1: icmp_seq=166 ttl=255 time=34.674 ms
64 bytes from 10.100.12.1: icmp_seq=167 ttl=255 time=99.711 ms
64 bytes from 10.100.12.1: icmp_seq=168 ttl=255 time=9.448 ms
64 bytes from 10.100.12.1: icmp_seq=169 ttl=255 time=3.932 ms
64 bytes from 10.100.12.1: icmp_seq=170 ttl=255 time=5.278 ms
64 bytes from 10.100.12.1: icmp_seq=171 ttl=255 time=3.742 ms
64 bytes from 10.100.12.1: icmp_seq=172 ttl=255 time=2.499 ms
^C
--- 10.100.12.1 ping statistics ---
173 packets transmitted, 173 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 1.646/41.724/228.618/62.726 ms
bogon:~ charles$
```

## 过程分析

1、display ar5drv 1 channelbusy查看这些ap radio口的空口利用率，发现都不高异常ap1：

```
=====display ar5drv 1 channelbusy=====
ChannelBusy information
Ctl Channel: 161 Channel Band:40M
Ext Channel: Below
Record Interval(s): 9
Date/Month/Year: 20/07/2020
Time(h/m/s): CtlBusy(%) TxBusy(%) RxBusy(%) ExtBusy(%)
01 14:00:15 6 2 3 0
02 14:00:06 3 1 2 0
03 13:59:57 2 1 1 0
04 13:59:48 3 1 2 0
05 13:59:39 6 2 3 0
06 13:59:30 4 1 3 0
07 13:59:21 4 1 3 0
08 13:59:12 5 1 3 0
09 13:59:03 5 1 4 0
10 13:58:54 14 1 14 0
11 13:58:45 4 1 3 0
12 13:58:36 6 1 6 0
13 13:58:27 3 1 2 0
```

14	13:58:17	4	1	3	0
15	13:58:08	4	1	3	0
16	13:57:59	3	1	2	0
17	13:57:50	3	1	2	0
18	13:57:41	3	1	2	0
19	13:57:32	3	1	2	0
20	13:57:23	3	1	3	0

异常ap2:

=====display ar5drv 1 channelbusy=====

ChannelBusy information

Ctl Channel: 161 Channel Band:40M

Ext Channel: Below

Record Interval(s): 9

Date/Month/Year: 21/07/2020

	Time(h/m/s):	CtlBusy(%)	TxBusy(%)	RxBusy(%)	ExtBusy(%)
01	14:21:20	14	2	12	0
02	14:21:11	23	8	15	0
03	14:21:02	15	1	15	0
04	14:20:53	15	1	15	0
05	14:20:44	17	1	17	0
06	14:20:35	20	1	20	0
07	14:20:26	21	2	21	0
08	14:20:17	16	1	15	0
09	14:20:08	13	1	13	0
10	14:19:59	13	5	8	0
11	14:19:50	8	2	6	0
12	14:19:41	7	1	6	0
13	14:19:32	7	1	6	0
14	14:19:23	7	1	6	0
15	14:19:14	9	1	8	0
16	14:19:05	11	1	10	0
17	14:18:56	6	1	5	0
18	14:18:47	6	1	6	0
19	14:18:38	6	1	5	0
20	14:18:29	7	1	6	0

2、display ar5drv 1 client all status查看终端的RSSI值和协商速率，发现均处于正常范围

异常ap1:

Station AID(5) Hash(5) Mac(f45c-89a6-3d89) IsTargetready(NO) Used(YES) Ht:(NO) VHT:(YES)

[Status Information]:

PS status: Active PS Cnt: 2793

PS Attrib: AC0 1, AC1 1, AC2 1, AC3 1

Last 2 minutes TX/RX: 13/20 packets/s, 42.627/18.291 Kbps

TX frame count 63463, TX frame bytes 43230951

RX frame count 79768, RX frame bytes 11144140

TX retry pkts 6901, TX retry bytes 5660753

TX error count 10, TX multi retry count 6901

TX success data pkts 63453, TX success pkts 63453

TX Retry data count 9251

RX Erro count 890

RX unicast data frame count 74567

[Sched Information]:

[Security Info]:

KeyType :NONE

KeyLen :0

KeyIndex:0

HostKey :

targetKeyType :CLEAR

targetKeyLen :0

targetKeyIndex:0

targetKey :

[Rate control information]:

outbound cir:0 cbs:0 | inbound cir:0 cbs:0

Last three rssi:41,41,41

Last rate:216.0, rateMaxPhy:400.0

All valid rate(20):

13.5 27.0 27.0 40.5 54.0 54.0 81.0 81.0 108.0 108.0 121.5 150.0  
180.0 162.0 200.0 216.0 243.0 300.0 360.0 400.0

[Station Current Rate Info]:

[rate	RateFlag	per counts	okCount	rateRecv	Thruput	AggrEr	AggrOk	]
[13.5	VH-4-S	0 0 0	0	12.1	0 0	0	0	]
[27.0	VH-4-S	0 0 0	0	24.3	0 0	0	0	]
[27.0	VH-4-D	0 0 0	0	24.1	0 0	0	0	]
[40.5	VH-4-S	0 0 0	0	36.6	0 0	0	0	]
[54.0	VH-4-S	0 0 0	0	48.8	0 0	0	0	]
[54.0	VH-4-D	0 0 0	0	48.5	0 0	0	0	]
[81.0	VH-4-S	0 0 0	0	73.4	0 0	0	0	]
[81.0	VH-4-D	0 0 0	3	73.1	0 0	0	0	]
[108.0	VH-4-S	0 0 0	0	98.0	0 0	0	0	]
[108.0	VH-4-D	0 0 0	75	97.9	0 0	0	0	]
[121.5	VH-4-S	30 142 98	0	77.4	10 34	]		
[150.0	VH-4-S	45 80 44	0	67.4	4 5	]		
[180.0	VH-4-S	45 0 0	0	81.0	0 0	]		
[162.0	VH-4-D	18 158 129	2377	120.6	3 85	]		
[200.0	VH-4-S	18 0 0	0	134.2	0 0	]		
[216.0	VH-4-D	8 51325 46975	1059	180.6	1707 22041	]		
[243.0	VH-4-D	21 18670 14711	8366	174.5	1657 6395	]		
[300.0	VH-4-D	7 91 84	17856	228.2	3 24	]		
[360.0	VH-4-D	7 0 0	14282	273.9	0 0	]		
[400.0	VH-4-D	7 0 0	24892	304.0	0 0	]		

异常ap2:

Station AID(1) Hash(1) Mac(f45c-89a6-3d89) IsTargetready(NO) Used(YES) Ht:(NO) Vht:(YES)

[Status Information]:

PS status: Active PS Cnt: 626  
PS Attrib: AC0 1, AC1 1, AC2 1, AC3 1  
Last 2 minutes TX/RX: 17/29 packets/s, 30.136/31.376 Kbps  
TX frame count 6490, TX frame bytes 1490267  
RX frame count 9419, RX frame bytes 1130898  
TX retry pkts 460, TX retry bytes 125093  
TX error count 3, TX multi retry count 460  
TX success data pkts 6486, TX success pkts 6486  
TX Retry data count 545  
RX Erro count 143  
RX unicast data frame count 8722

[Sched Information]:

[Security Info]:

KeyType :NONE  
KeyLen :0  
KeyIndex:0  
HostKey :  
targetKeyType :CLEAR  
targetKeyLen :0  
targetKeyIndex:0  
targetKey :

[Rate control information]:

outbound cir:0 cbs:0 | inbound cir:0 cbs:0

Last three rssi:39,39,39

Last rate:400.0, rateMaxPhy:400.0

All valid rate(20):

13.5 27.0 27.0 40.5 54.0 54.0 81.0 81.0 108.0 108.0 121.5 150.0  
180.0 162.0 200.0 216.0 243.0 300.0 360.0 400.0

[Station Current Rate Info]:

[rate	RateFlag	per counts	okCount	rateRecv	Thruput	AggrEr	AggrOk	]
[13.5	VH-4-S	0 0 0	0	12.1	0 0	0	0	]
[27.0	VH-4-S	0 0 0	0	24.3	0 0	0	0	]
[27.0	VH-4-D	0 0 0	0	24.1	0 0	0	0	]
[40.5	VH-4-S	0 0 0	0	36.6	0 0	0	0	]

[54.0 VH-4-S 0 0 0 0 48.8 0 0 ]  
[54.0 VH-4-D 0 0 0 0 48.5 0 0 ]  
[81.0 VH-4-S 0 0 0 0 73.4 0 0 ]  
[81.0 VH-4-D 0 0 0 1 73.1 0 0 ]  
[108.0 VH-4-S 0 0 0 0 98.0 0 0 ]  
[108.0 VH-4-D 0 0 0 15 97.9 0 0 ]  
[121.5 VH-4-S 0 0 0 0 110.5 0 0 ]  
[150.0 VH-4-S 0 0 0 0 122.6 0 0 ]  
[180.0 VH-4-S 0 0 0 0 147.3 0 0 ]  
[162.0 VH-4-D 0 0 0 853 147.1 0 0 ]  
[200.0 VH-4-S 0 0 0 0 163.6 0 0 ]  
[216.0 VH-4-D 0 7 7 1878 196.3 0 4 ]  
[243.0 VH-4-D 20 30 24 1626 176.7 3 4 ]  
[300.0 VH-4-D 8 25 23 1598 225.8 0 4 ]  
[360.0 VH-4-D 15 201 169 972 250.3 19 80 ]  
[400.0 VH-4-D 5 6467 6081 514 310.6 262 3194 ]

3、观察这些异常ap的共同点，发现信道基本都是161和165，而使用其他5G信道的AP均没有出现此类问题

经确认，苹果终端与5G的161/165信道的兼容性较差，建议现场替换信道测试后，问题解决。

#### 解决方法

苹果终端与5G的161/165信道的兼容性较差，现场替换信道测试后，问题解决。