某办公场景使用MSG360做出口，早高峰期间访问公网卡顿、丢包

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组网及说明

光猫——AC（网关和出口）——SW——AP

告警信息

无

某局点反馈，用AC直连光猫做出口，每天早上8：50-9：15期间无线终端业务卡顿，终端访问外网业务丢包。

1.现场的组网为：光猫——AC——SW——AP——client，分段ping测试，发现是AC在早高峰期间ping外网不通、或丢包严重；

2.查看故障时段AC设备的内存、CPU利用率，没有任何异常；

3.客户联系运营商更换了光猫，故障依旧；

4.尝试配置优化配置，在WAN口配置了tcp mss 1360，mtu 1492，现场反馈情况有所改善，但依旧丢包、业务卡顿；

5.AC ping外网丢包期间，开启debug icmp ，发现外网未回包，同时查看到AC当前连接数4300+，无故障时段连接数在2800+左右，怀疑是运营商连接数限制导致的；


```
Ping www.baidu.com (14.119.104.254): 56 data bytes, press CTRL_C to break
Request time out
Request time out
56 bytes from 14.119.104.254: icmp_seq=2 ttl=57 time=8.303 ms
56 bytes from 14.119.104.254: icmp_seq=3 ttl=57 time=8.443 ms
56 bytes from 14.119.104.254: icmp_seq=4 ttl=57 time=8.386 ms

--- Ping statistics for www.baidu.com ---
5 packet(s) transmitted, 3 packet(s) received, 40.0% packet loss
round-trip min/avg/max/std-dev = 8.303/8.377/8.443/0.057 ms
%May 19 09:08:21:299 2023 H3C NETCONF/6/SOAP_XML_LOGIN: admin from        login failed.
%May 19 09:08:21:325 2023 H3C NETCONF/6/SOAP_XML_LOGIN: admin from        login failed.
%May 19 09:08:21:346 2023 H3C NETCONF/6/SOAP_XML_LOGIN: admin from        login failed.
%May 19 09:08:21:361 2023 H3C NETCONF/6/SOAP_XML_LOGIN: admin from        login failed.
%May 19 09:08:21:386 2023 H3C NETCONF/6/SOAP_XML_LOGIN: admin from        login failed.
%May 19 09:08:21:408 2023 H3C NETCONF/6/SOAP_XML_LOGIN: admin from        login failed.
%May 19 09:08:21:433 2023 H3C NETCONF/6/SOAP_XML_LOGIN: admin from        login failed.
        19 09:09:41:947 2023 H3C STAMGR/6/STAMGR_CLIENT_OFFLINE:

<H3C>dis session
<H3C>dis session statistics
Slot 1:
Current sessions: 4311
        TCP sessions:           2383
        UDP sessions:           1892
        ICMP sessions:            36
      ICMPv6 sessions:            0
    UDP-Lite sessions:            0
        SCTP sessions:            0
        DCCP sessions:            0
       RAWIP sessions:            0
```

6.对该局点进行并发连接数测试，分别测试如下两组环境，排除是AC带来的限制，每组环境测试三次，可以确定该局点并发连接数是4k：

①PC——光猫测试结果：


```
                        Office\Desktop      试\bingfa.exe
connect      123.85:(20001, 20200) con        ), maxcount:12288
  1s, ok:  90, loss: 0, trying:10, fail: 0,        (21504, 25599),4096
  2s, ok: 180, loss: 0, trying:10, fail: 0,        (21504, 25599),4096
  3s, ok: 274, loss: 0, trying: 9, fail: 0,        (21504, 25599),4096
  4s, ok: 368, loss: 0, trying:10, fail: 0,        (21504, 25599),4096
  5s, ok: 458, loss: 0, trying:10, fail: 0,        (21504, 25599),4096
 10s, ok: 911, loss: 0, trying: 9, fail: 0.        (21504, 25599),4096
 20s, ok:1846, loss: 0, trying:10, fail: 0        (21504, 25599),4096
 30s, ok:2104, loss: 0, trying:10, fail: 0,:(21504, 25599),4096
new connection not finish, count in fail.        088)
 40s, ok:2238, loss: 0, trying:10, fail: 2        (21504, 25599),4096
established connection disconnected, count        in seq 69)
 50s, ok:2342, loss: 8, trying:10, fail: 3        (21504, 25599),4096
 60s, ok:2484, loss:17, trying:10, fail: 3        (21504, 25599),4096
 70s, ok:2607, loss:26, trying:10, fail: 4        (21504, 25599),4096
 80s, ok:2777, loss:40, trying:10, fail: 8        (21504, 25599),4096
WSASend failed not io_pending: 10054
 90s, ok:2918, loss:62, trying:10, fail: 8,        (21504, 25599),4096
100s, ok:3055, loss:92, trying:10, fail: 8,        (21504, 25599),4096
110s, ok:3265, loss:121, trying:10, fail: 8,        (21504, 25599),4096
120s, ok:3456, loss:161, trying:10, fail: 8,        (21504, 25599),4096
130s, ok:3490, loss:217, trying:10, fail: 8,        (21504, 25599),4096
140s, ok:3547, loss:255, trying:10, fail: 8,        (21504, 25599),4096
150s, ok:3588, loss:314, trying:10, fail: 8,        (21504, 25599),4096
160s, ok:3656, loss:365, trying:10, fail:17,        (21504, 25599),4096
170s, ok:3745, loss:418, trying: 9, fail:18,        (21504, 25599),4096
180s, ok:3801, loss:492, trying:10, fail:19,        (21504, 25599),4096
runing 180 seconds, quit now.
```

②光猫——AC——PC 测试结果：

```
120s, ok:4008, loss: 1, trying:10, fail:68,        46080,50175), 4096
130s, ok:4009, loss: 1, trying:10, fail1:77,       46080,50175), 4096
140s, ok:4017, loss: 1, trying:10, fail1:86,       46080,50175), 4096
150s, ok:4030, loss: 2, trying:10, fail1:91,    1  46080,50175), 4096
160s, ok:4056, loss: 2, trying:10, fail1:95,    1  46080,50175), 4096
170s, ok:4064, loss: 2, trying:10, fail1:102    (46080,50175), 4096
     ok:4068, loss: 2, trying:10, fail1:10(     (46080,50175), 4096
     180 seconds, qu
                                               ngfa.exe 60.191.123.85
                                               maxcount:12288
  1s, ok:        trying:10, fail: (            46237,46329),93
  2s, ok: 180, loss: 0, trying:10, fail: (     (46237,46419),183
  3s, ok: 275, loss: 0, trying: 9, fail: (     (46237,46516),280
  4s, ok: 370, loss: 0, trying:10, fail: 0      (46237,46609),373
  5s, ok: 460, loss: 0, trying:10, fail: 0,     (46237,46699),463
 10s, ok: 931, loss: 0, trying: 9, fail: 0,     (46237,47170),934
 20s, ok:1860, loss: 0, trying:10, fail: 0,     (46237,48101),1865
 30s, ok:2798, loss: 0, trying:10, fail: 0,     (46237,49043),2807
 40s, ok:3727, loss: 0, trying:10, fail        46237,49974),3738
 50s, ok:4070, loss: 0, trying:10, fail        46080,50175), 4096
new connection not finish, count in fail
 60s, ok:4071, loss: 0, trying:10, fail        80,50175), 4096
 70s, ok:4071, loss: 0, trying:10, fail        30,50175), 4096
 80s, ok:4071, loss: 0, trying:10, fail        30,50175), 4096
 90s, ok:4071, loss: 0, trying:10, fail        30,50175), 4096
100s, ok:4071, loss: 0, trying:10, fail        30,50175), 4096
110s, ok:4072, loss: 0, trying:10, fail        30,50175), 4096
120s, ok:4073, loss: 0, trying:10, fail        30,50175), 4096
130s, ok:4073, loss: 0, trying:10, fail        30,50175), 4096
140s, ok:4073, loss: 0, trying:10, fail        80,50175), 4096
150s, ok:4073, loss: 0, trying:10, fail        080,50175), 4096
160s, ok:4074, loss: 0, trying:10, fail        080,50175), 4096
170s, ok:4076, loss: 0, trying:10, fail        080,50175), 4096
180s,          0  trying:10, fail        9    080,50175), 4096
                                               fa.exe 60.191.123.85
     ect tcp to 60.191.                        xcount:12288
  1s, ok:  89, loss: 0, trying: 9, fail        117,46215),99
  2s, ok: 180, loss: 0, trying: 9, fail        117,46309),193
  3s, ok: 269, loss: 0, trying:10, fail:       117,46398),282
  4s, ok: 360, loss: 0, trying:10, fail:       117,46492),376
  5s, ok: 455, loss: 0, trying: 9, fail:       117,46584),468
 10s, ok: 920, loss: 0, trying:10, fail:       117,47049),933
 20s, ok:1853, loss: 0, trying: 9, fail        46117,47987),1871
 30s, ok:2784, loss: 0, trying:10, fail        (46117,48919),2803
 40s, ok:3718, loss: 0, trying:10, fail        (46117,49854),3738
 50s, ok:4075, loss: 0, trying:10, fail        (46080,50175), 4096
new connection not finish, count in fail       76)
 60s, ok:4075, loss: 0, trying:10, fail        (46080,50175), 4096
 70s, ok:4075, loss: 0, trying:10, fail        0,50175), 4096
 80s, ok:4076, loss: 0, trying:10, fail        0,50175), 4096
 90s, ok:4076, loss: 0, trying:10, fail        0,50175), 4096
100s, ok:4077, loss: 0, trying:10, fail:       0,50175), 4096
110s, ok:4080, loss: 0, trying:10, fail:6      0,50175), 4096
120s, ok:4081, loss: 0, trying:10, fail:6      0,50175), 4096
130s, ok:4083, loss: 0, trying:10, fail        30,50175), 4096
140s, ok:4083, loss: 0, trying:10, fail        30,50175), 4096
150s, ok:4083, loss: 0, trying:10, fail        080,50175), 4096
160s, ok:4084, loss: 0, trying:10, fail        080,50175), 4096
170s, ok:4084, loss: 0, trying:10, fail        080,50175), 4096
180s, ok:4085, loss: 0, trying:10, fail        080,50175), 4096
     ng 180 seconds  quit no
```

解决方法

运营商连接数限制导致，设   联系运营商解

7.由此可确定，是运营商连接数限制导致的早高峰期间上网卡顿，AC ping外网丢包。