

wife_iperf测速使用说明文档

文档履历

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1、概述

1.1编写目的

本文档的编写目的详细说明在rtos，linux下进行iperf网络性能测试工具的使用。Iperf 是一个网络性能测试工具。Iperf可以测试最大TCP和UDP带宽性能，具有多种参数和UDP特性，可以根据需要调整，可以报告带宽、延迟抖动和数据包丢失。

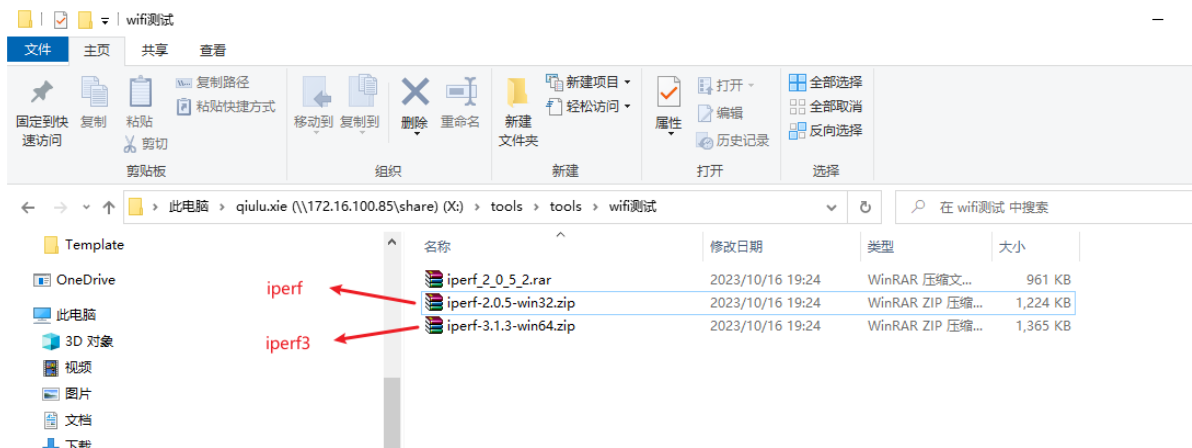
1.2读者对象

本文档适用于：技术支持工程师 软件开发工程师

2、iperf工具准备

2.1 git下载iperf工具，iperf工具路径为\tools\wifi测试。

```
1 git clone https://gitlab.hichiptech.com:62443/sw/tools.git
2 cd tools
```



2.2 windows安装：网上自行下载，下载地址为：<https://iperf.fr/iperf-download.php> 用iperf3则下载 iperf 3.0.13，用iperf则下载iperf 2.0.5

Download iPerf3 and original iPerf pre-compiled binaries

Note that iPerf3 is not backwards compatible with iPerf2.

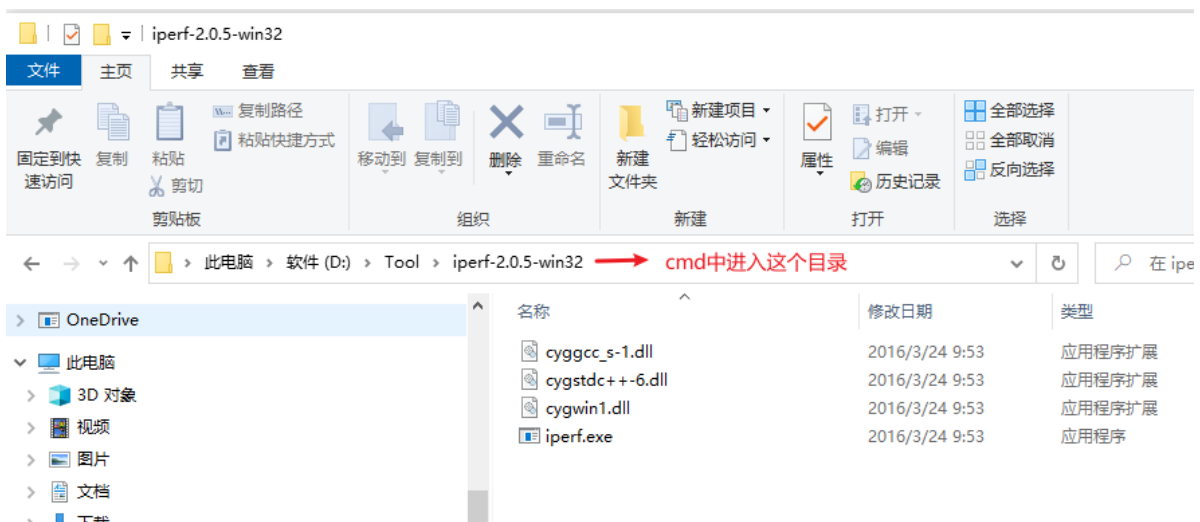
Windows 64 bits compiled by Vivien Guéant. ([sha256](#))

- iPerf 3.1.3** (8 jun 2016 - 1.3 MiB for Windows Vista 64bits to Windows 10 64bits) → iperf3
- [iPerf 3.1.2](#) (1 fev 2016 - 1.3 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 3.0.12](#) (8 jun 2016 - 1.3 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 3.0.11](#) (9 jan 2015 - 1.3 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 2.0.9](#) (6 jun 2016 - 1.7 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 2.0.8b](#) (17 sep 2015 - 1.6 MiB for Windows Vista 64bits to Windows 10 64bits)

Windows 32 bits compiled by Vivien Guéant. ([sha256](#))

- [iPerf 3.1.3](#) (8 jun 2016 - 1.3 MiB for Windows XP to Windows 10)
- [iPerf 3.1.2](#) (1 fev 2016 - 1.3 MiB for Windows XP to Windows 10)
- [iPerf 3.0.12](#) (8 jun 2016 - 1.4 MiB for Windows XP to Windows 10)
- [iPerf 3.0.11](#) (9 jan 2015 - 1.3 MiB for Windows XP to Windows 10)
- [iPerf 2.0.9](#) (6 jun 2016 - 1.7 MiB for Windows XP to Windows 10)
- [iPerf 2.0.8b](#) (17 sep 2015 - 1.6 MiB for Windows XP to Windows 10)
- [iPerf 2.0.8](#) (12 jan 2015 - 231 KiB for Windows XP to Windows 10) built without Cygwin
- [iPerf 2.0.6](#) (10 mar 2014 - 1.6 MiB for Windows XP to Windows 10)
- [iPerf 2.0.5b](#) (8 jul 2010 - 1.6 MiB for Windows XP to Windows 10) Fixed some Cygwin performance issues by Iuliu Rus (Google)
- iPerf 2.0.5** (8 jul 2010 - 1.2 MiB for Windows XP to Windows 10) → iperf
- [iPerf 2.0.2](#) (3 may 2005 - 614 KiB only for Windows 2000 and Windows XP)
- [iPerf 1.7.0](#) (13 mar 2003 - 84.4 KiB only for Windows 2000 and Windows XP) built without Cygwin
- [iPerf 1.7.0](#) (13 mar 2003 - 316 KiB only for Windows CE)

2.3 iperf工具打开方法：将iperf软件解压放在不带中文的目录，cmd中进入软件目录。



window下win+R后cmd 回车，进入到iperf工具的目录。

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [版本 10.0.19045.3570]
(c) Microsoft Corporation。保留所有权利。

C:\Users\PC-admin>d:

D:\>cd Tool

D:\Tool>cd iperf-2.0.5-win32

D:\Tool\iperf-2.0.5-win32>
```

2.4 ubuntu安装：进入root用户后在命令行输入一下命令

```
1 //iperf工具
2 apt-get install iperf
3 //iperf3工具
4 apt-get install iperf3
```

```
root@xql:/home/xql/桌面# apt-get install iperf
正在读取软件包列表... 完成
正在分析软件包的依赖关系树... 完成
正在读取状态信息... 完成
iperf 已经是最新版 (2.1.5+dfsg1-1)。
升级了 0 个软件包，新安装了 0 个软件包，要卸载 0 个软件包，有 373 个软件包未被升级。

root@xql:/home/xql/桌面# apt-get install iperf3
正在读取软件包列表... 完成
正在分析软件包的依赖关系树... 完成
正在读取状态信息... 完成
iperf3 已经是最新版 (3.9-1+deb11u1build0.22.04.1)。
升级了 0 个软件包，新安装了 0 个软件包，要卸载 0 个软件包，有 373 个软件包未被升级。
```

检验是否安装成功：

```
1 iperf -v
2 iperf3 -v
```

```
root@xql:/home/xql/桌面# iperf -v
iperf version 2.1.5 (3 December 2021) pthreads

root@xql:/home/xql/桌面# iperf3 -v
iperf 3.9 (cJSON 1.7.13)
Linux xql 6.2.0-34-generic #34~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Thu Sep  7 13:12:03 UTC 2 x86_64
Optional features available: CPU affinity setting, IPv6 flow label, SCTP, TCP congestion algorithm setting, sendfile / zerocopy, socket pacing, authentication

root@xql:/home/xql/桌面#
```

2.5 iperf和iperf3参数说明

1、iperf常用参数说明

```

1  -s    以server模式启动, eg: iperf -s
2
3  -c host 以client模式启动, host是server端地址, eg: iperf -c 222.35.11.23
4
5  -f [k|m|K|M] 分别表示以Kbits, Mbits, KBytes, MBytes显示报告, 默认以Mbits为单
    位, eg: iperf -c 222.35.11.23 -f K
6
7  -i sec 以秒为单位显示报告间隔, eg: iperf -c 222.35.11.23 -i 2
8
9  -l 缓冲区大小, 默认是8KB, eg: iperf -c 222.35.11.23 -l 16 -m 显示tcp最大mtu值
10
11 -o 将报告和错误信息输出到文件 eg: iperf -c 222.35.11.23 -o c:\iperflog.txt
12
13 -p 指定服务器端使用的端口或客户端所连接的端口 eg: iperf -s -p 9999; iperf -c
    222.35.11.23 -p 9999
14
15 -u 使用udp协议
16
17 -w 指定TCP窗口大小, 默认是8KB
18
19 -B 绑定一个主机地址或接口 (当主机有多个地址或接口时使用该参数)
20
21 -C 兼容旧版本 (当server端和client端版本不一样时使用)
22
23 -M 设定TCP数据包的最大mtu值
24
25 -N 设定TCP不延时
26
27 -v 传输ipv6数据包    server专用参数
28
29 -D 以服务方式运行ipserf, eg: iperf -s -D -R 停止iperf服务, 针对-D, eg: iperf -s -R
    client端专用参数
30
31 -d 同时进行双向传输测试

```

2、iperf3常用参数说明

```

1  -s    表示服务器端;
2
3  -p    定义端口号;
4
5  -i    设置每次报告之间的时间间隔, 单位为秒, 如果设置为非零值, 就会按照此时间间隔输出测试报
    告, 默认值为零
6
7  -c    表示服务器的IP地址;
8
9  -p    表示服务器的端口号;
10
11 -t    参数可以指定传输测试的持续时间, Iperf在指定的时间内, 重复的发送指定长度的数据包, 默
    认是10秒钟.
12
13 -i    设置每次报告之间的时间间隔, 单位为秒, 如果设置为非零值, 就会按照此时间间隔输出测试报
    告, 默认值为零;
14
15 -w    设置套接字缓冲区为指定大小, 对于TCP方式, 此设置为TCP窗口大小, 对于UDP方式, 此设置为
    接受UDP数据包的缓冲区大小, 限制可以接受数据包的最大值.
16

```

```
17 -J 来输出JSON格式测试结果。
18
19 -R 反向传输,缺省iperf3使用上传模式: Client负责发送数据, Server负责接收; 如果需要测试下载速度, 则在Client侧使用-R参数即可。
```

3、iperf测试前提准备

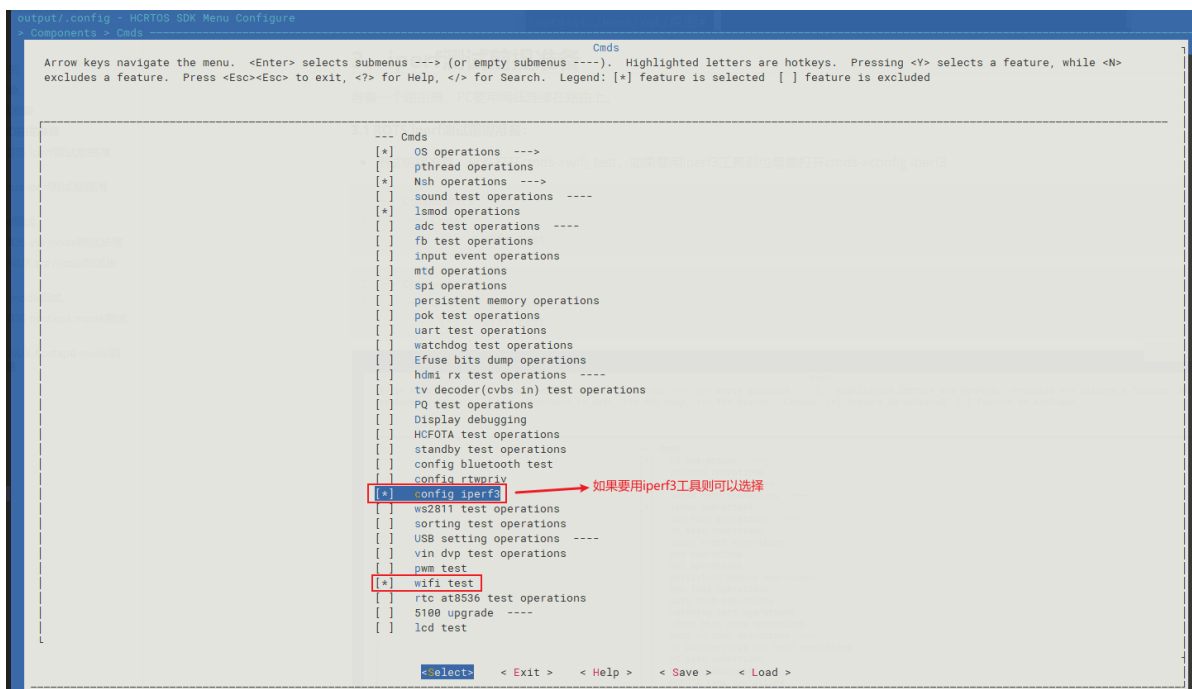
准备一个路由器, PC要用网线连接在路由上。

3.1 ROTS iperf测试前提准备:

- 测试前提准备: 软件打开cmds->wifi_test, 如果要用iperf3工具则也需要打开cmds->config iperf3

```
1 -> Components
2     -> Cmds
3         [*]  wifi test
```

```
1 -> Components
2     -> Cmds
3         [*]  wifi test
```

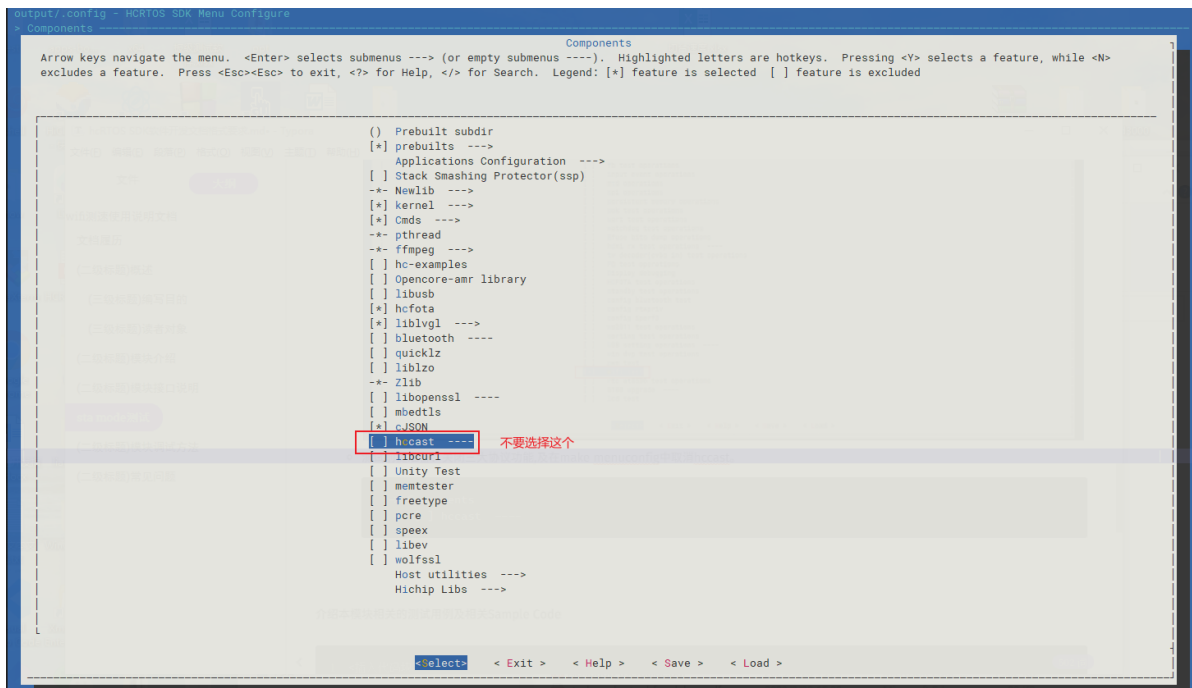


选择后执行编译命令:

```
1 make cmds-rebuild all
```

- 测试前提准备: 关闭三大协议功能,及在make menuconfig中取消hccast。

```
1 -> Components
2     [ ] hccast  ----
```

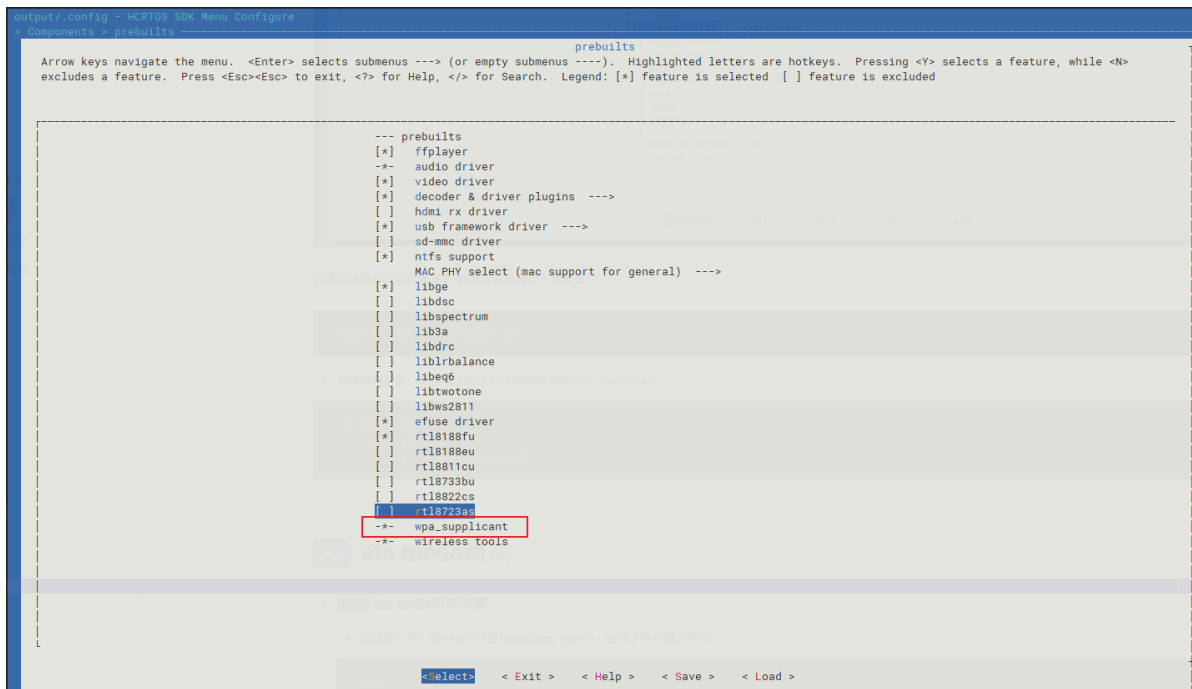


如果取消选择后执行编译命令(本没有选择则不用编译):

```
1 | make hccast-reconfigure all
```

- 测试前提准备: 确保板子软件已经选择编译进wpa_supplicant

```
1 -> Components
2   -> prebuilts
3     *- wpa_supplicant
```



3.2 linux iperf测试前提准备:

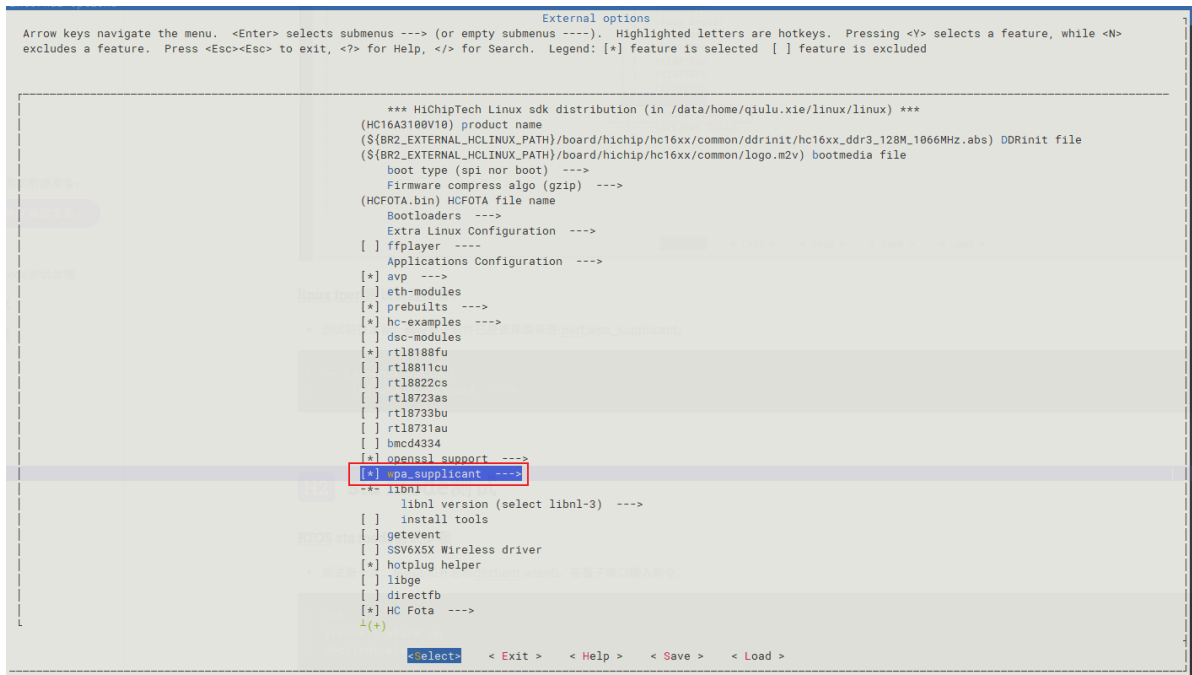
- 测试前提准备: 确保板子软件已经选择编译进iperf,wpa_supplicant。

wpa_supplicant驱动选择

```

1 cd linux/buildroot/output/a3100
2 make menuconfig
3 -> External options
4     [*] wpa_supplicant --->

```

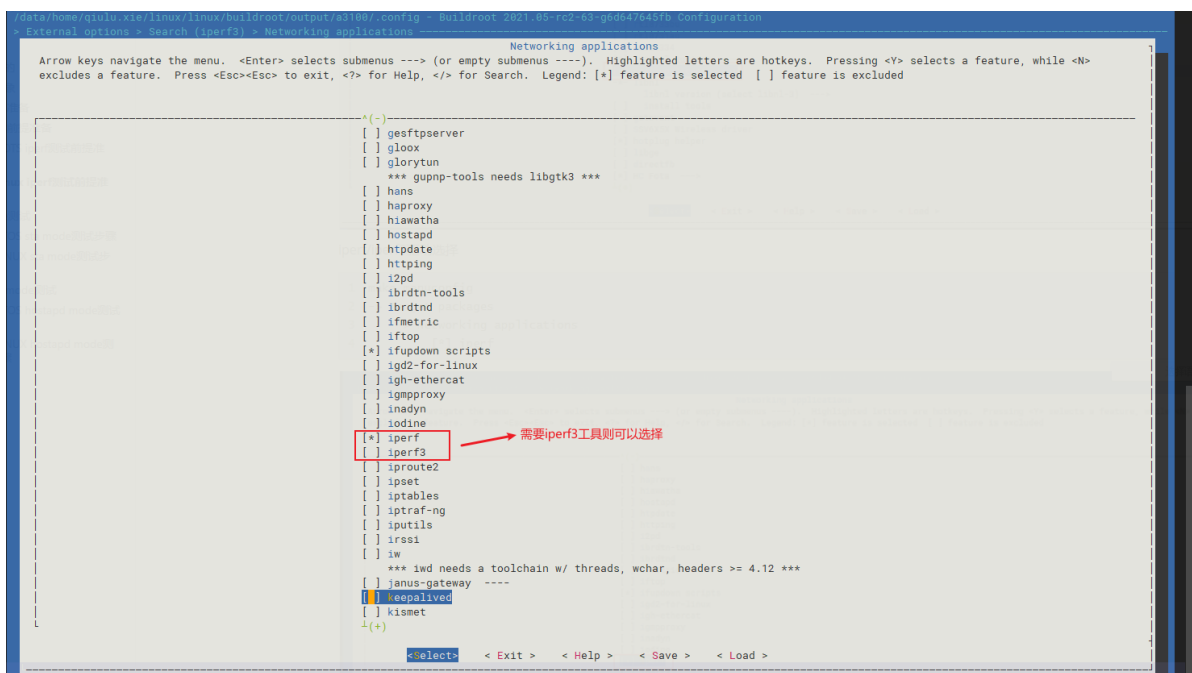


iperf/iperf3驱动选择

```

1 make menuconfig
2 -> Target packages
3     -> Networking applications
4         [*] iperf
5         [*] iperf3

```



选择驱动后进行编译:

```

1 make all

```

4、sta mode测试

4.1 RTOS sta mode测试步骤

- 测试第一步：将wlan0开启和dhclient wlan0。在板子串口输入命令。

```
1 net
2 ifconfig wlan0 up
3 dhclient wlan0
```

```
hc1600a@dbA3200v10(net)# ifconfig wlan0 up
hc1600a@dbA3200v10(net)# dhclient wlan0
hc1600a@dbA3200v10(net)#
```

- 测试第二步：板子串口输入命令启动sta和p2p:

```
1 wifi
2 wpa_supplicant -i wlan0 -Dwext -x 9877 -x 9881 -c /etc/wpa_supplicant.conf -C
  /var/run/wpa_supplicant -N -i p2p0 -x 9890 -x 9883 -Dwext -c
  /etc/wpa_supplicant.conf -C /var/run/wpa_supplicant
```

```
hc1600a@dbA3200v10# wifi
hc1600a@dbA3200v10(wifi)# wpa_supplicant -i wlan0 -Dwext -x 9877 -x 9881 -c /etc/wpa_supplicant.conf -C /var/run/wpa_supplicant -N -i p2p0 -x 9890
-x 9883 -Dwext -c /etc/wpa_supplicant.conf -C /var/run/wpa_supplicant
Create thread success.
hc1600a@dbA3200v10(wifi)# ioctl[SIOCSIWAP]: Not owner
ioctl[SIOCSIWAP]: Invalid argument
ioctl[SIOCSIWESSID]: Invalid argument
hc1600a@dbA3200v10(wifi)#
```

- 测试第三步：板子进行配网，在板子串口依次输入命令进行配网

```
1 wifi
2 wpa_cli -i wlan0 -x 9877 add_network
3 wpa_cli -i wlan0 -x 9877 set_network 0 ssid "\"TP-LINK_WPA3\""
4 wpa_cli -i wlan0 -x 9877 set_network 0 psk "\"12345678\""
5 wpa_cli -i wlan0 -x 9877 select_network 0
6 wpa_cli -i wlan0 -x 9877 status
```

PS: 第3和第4中ssid和psk要使用自己连接的路由热点。以上只是一个例子。

以下是进行板子串口输入命令配网的结果图：

```
hc1600a@dbA3200v10(wifi)# wpa_cli -i wlan0 -x 9877 add_network
0
hc1600a@dbA3200v10(wifi)# wpa_cli -i wlan0 -x 9877 set_network 0 ssid "\"TP-LINK_WPA3\""
OK
hc1600a@dbA3200v10(wifi)# wpa_cli -i wlan0 -x 9877 set_network 0 psk "\"12345678\""
OK
hc1600a@dbA3200v10(wifi)# wpa_cli -i wlan0 -x 9877 select_network 0
OK
hc1600a@dbA3200v10(wifi)# Failed to add supported operating classes IE
wpa_cli -i wlan0 -x 9877 status
bssid=68:77:24:7d:db:ba
freq=2412
ssid=TP-LINK_WPA3
id=0
mode=station
pairwise_cipher=CCMP
group_cipher=CCMP
key_mgmt=WPA2-PSK
wpa_state=COMPLETED
ip_address=192.168.59.109
p2p_device_address=6c:60:eb:00:00:13
address=6c:60:eb:00:00:13
uuid=1b8bc0ff-6d94-5812-80b0-ddceb5b444d1
hc1600a@dbA3200v10(wifi)#
```

- 板子tcp/udp client 测试
 - 板子 tcp client测试

PS: PC要用网线连接在路由上。如果板子作为server进行测试了需要reset后重新配网才能进行。
在pc端作为server, cmd中输入启动iperf的命令

```
1 iperf.exe -s -p 1127 -i 1
```

如果使用iperf3工具的话, 在cmd中输入一下命令

```
1 iperf3.exe -s -p 1127 -i 1
```

pc sever启动后在cmd中的截图:

```
D:\Tool\iperf-2.0.5-win32>iperf.exe -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----
```

板子作为client, 在板子串口输入iperf命令:

```
1 net
2 iperf -c 192.168.59.115 -p 1127
3 //192.168.59.115 为pc的ip地址。
```

```
hc1600a@dbA3200v10(net)# iperf -c 192.168.59.115 -p 1127
hc1600a@dbA3200v10(net)#
```

使用iperf3工具则需要在板子串口输入一下命令:

TCP上行测试:

```
1 iperf3 -c 192.168.59.105 -p 1127 -i 1 -t 10
```

TCP下行测试:

```
1 iperf3 -c 192.168.59.105 -p 1127 -i 1 -t 10 -R
```

在pc端就会有相对应的数据产生, 进行分析。

```
C:\WINDOWS\system32\cmd.exe - iperf.exe -s -p 1127 -i 1
[ 4] 4.0- 5.0 sec 28.5 KBytes 234 Kbits/sec
[ 4] 5.0- 6.0 sec 0.00 Bytes 0.00 bits/sec
Waiting for server threads to complete. Interrupt again to force quit.
[ 4] 0.0- 6.9 sec 1.15 MBytes 1.40 Mbits/sec

D:\Tool\iperf-2.0.5-win32>iperf.exe -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----
[ 4] local 192.168.59.115 port 1127 connected with 192.168.59.119 port 52458
ID] Interval Transfer Bandwidth
[ 4] 0.0- 1.0 sec 529 KBytes 4.33 Mbits/sec
[ 4] 1.0- 2.0 sec 647 KBytes 5.30 Mbits/sec
[ 4] 2.0- 3.0 sec 239 KBytes 1.96 Mbits/sec
[ 4] 3.0- 4.0 sec 334 KBytes 2.74 Mbits/sec
[ 4] 4.0- 5.0 sec 242 KBytes 1.98 Mbits/sec
[ 4] 5.0- 6.0 sec 30.6 KBytes 250 Kbits/sec
[ 4] 6.0- 7.0 sec 18.5 KBytes 152 Kbits/sec
[ 4] 7.0- 8.0 sec 16.3 KBytes 134 Kbits/sec
[ 4] 8.0- 9.0 sec 49.1 KBytes 402 Kbits/sec
[ 4] 9.0-10.0 sec 620 KBytes 5.08 Mbits/sec
[ 4] 10.0-11.0 sec 551 KBytes 4.51 Mbits/sec
[ 4] 11.0-12.0 sec 548 KBytes 4.49 Mbits/sec
[ 4] 12.0-13.0 sec 630 KBytes 5.16 Mbits/sec
[ 4] 13.0-14.0 sec 695 KBytes 5.69 Mbits/sec
[ 4] 14.0-15.0 sec 16.3 KBytes 134 Kbits/sec
[ 4] 15.0-16.0 sec 62.6 KBytes 513 Kbits/sec
[ 4] 16.0-17.0 sec 755 KBytes 6.19 Mbits/sec
[ 4] 17.0-18.0 sec 208 KBytes 1.70 Mbits/sec
```

- o 板子udp client测试

在pc端作为sever, cmd中输入启动iperf的命令.

```
1 | iperf.exe -s -p 1127 -i 1 -u
```

使用iperf3工具则cmd中输入以下命令:

```
1 | iperf.exe -s -p 1127 -i 1
```

pc sever启动后在cmd中的截图:

```
D:\Tool\iperf-2.0.5-win32>iperf.exe -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 64.0 KByte (default)
-----
```

板子作为client, 在板子串口输入iperf命令

```
1 | net
2 | iperf -c 192.168.59.115 -p 1127 -u
```

```
hc1600a@dbA3200v10(net)# iperf -c 192.168.59.115 -p 1127 -u
hc1600a@dbA3200v10(net)#
```

使用iperf3工具则需要在板子串口输入一下命令:

UDP上行测试:

```
1 | iperf3 -u -c 192.168.59.105 -p 1127 -b 70M -i 1 -t 10
```

UDP下行测试:

```
1 | iperf3 -u -c 192.168.59.105 -p 1127 -b 70M -i 1 -t 10 -R
```

在pc端就会有相对应的数据产生, 进行分析.

```
C:\WINDOWS\system32\cmd.exe - iperf.exe -s -p 1127 -i 1 -u
[3] local 192.168.59.115 port 1127 connected with 192.168.59.119 port 62514
ID Interval Transfer Bandwidth Jitter Lost/Total Datagrams
[3] 0.0- 1.0 sec 424 KBytes 3.47 Mbits/sec 0.093 ms 62658/66051 (95%)
[3] 0.0- 1.0 sec 3392 datagrams received out-of-order
[3] 1.0- 2.0 sec 460 KBytes 3.77 Mbits/sec 0.326 ms 0/ 0 (nan%)
[3] 1.0- 2.0 sec 3680 datagrams received out-of-order
[3] 2.0- 3.0 sec 380 KBytes 3.11 Mbits/sec 0.077 ms 0/ 0 (nan%)
[3] 2.0- 3.0 sec 3038 datagrams received out-of-order
[3] 3.0- 4.0 sec 104 KBytes 853 Kbits/sec 0.022 ms 0/ 0 (nan%)
[3] 3.0- 4.0 sec 833 datagrams received out-of-order
[3] 4.0- 5.0 sec 0.00 Bytes 0.00 bits/sec 0.022 ms 0/ 0 (nan%)
[3] 5.0- 6.0 sec 384 Bytes 3.07 Kbits/sec 139.159 ms 0/ 0 (nan%)
[3] 5.0- 6.0 sec 3 datagrams received out-of-order
[3] 6.0- 7.0 sec 0.00 Bytes 0.00 bits/sec 139.159 ms 0/ 0 (nan%)
[3] 7.0- 8.0 sec 0.00 Bytes 0.00 bits/sec 139.159 ms 0/ 0 (nan%)
[3] 8.0- 9.0 sec 0.00 Bytes 0.00 bits/sec 139.159 ms 0/ 0 (nan%)
[3] 9.0-10.0 sec 0.00 Bytes 0.00 bits/sec 139.159 ms 0/ 0 (nan%)
[3] 10.0-11.0 sec 768 Bytes 6.14 Kbits/sec 302.354 ms 0/ 0 (nan%)
[3] 10.0-11.0 sec 6 datagrams received out-of-order
[3] 11.0-12.0 sec 4.25 KBytes 34.8 Kbits/sec 49.441 ms 0/ 0 (nan%)
[3] 11.0-12.0 sec 34 datagrams received out-of-order
[3] 12.0-13.0 sec 896 Bytes 7.17 Kbits/sec 79.374 ms 0/ 0 (nan%)
[3] 12.0-13.0 sec 7 datagrams received out-of-order
[3] 13.0-14.0 sec 256 Bytes 2.05 Kbits/sec 73.646 ms 0/ 0 (nan%)
[3] 13.0-14.0 sec 2 datagrams received out-of-order
[3] 14.0-15.0 sec 0.00 Bytes 0.00 bits/sec 73.646 ms 0/ 0 (nan%)
[3] 15.0-16.0 sec 0.00 Bytes 0.00 bits/sec 73.646 ms 0/ 0 (nan%)
[3] 16.0-17.0 sec 0.00 Bytes 0.00 bits/sec 73.646 ms 0/ 0 (nan%)
[3] 17.0-18.0 sec 0.00 Bytes 0.00 bits/sec 73.646 ms 0/ 0 (nan%)
[3] 18.0-19.0 sec 0.00 Bytes 0.00 bits/sec 73.646 ms 0/ 0 (nan%)
```

- 板子tcp/udp sever测试

- 板子tcp sever测试

PS: PC要用网线连接在路由上。如果板子作为client进行测试后, 需要reset后重新配网才能进行。

板子作为sever, 板子串口中输入启动iperf的命令

```
1 net
2 iperf -q
3 iperf -s -p 1127
```

```
hc1600a@dbA3200v10(net)# iperf -s -p 1127
hc1600a@dbA3200v10(net)#
```

使用iperf3工具则需要在板子串口输入一下命令:

```
1 iperf3 -s -p 1127
```

pc作为client,在cmd中输入命令.

```
1 iperf.exe -c 192.168.59.119 -p 1127
2 //192.168.59.119 为板子的ip地址。
```

使用iperf3工具, 则在cmd输入命令:

上行测试:

```
1 iperf3 -u -c 192.168.59.103 -p 1127 -b 70M -i 1 -t 10
```

下行测试:

```
1 iperf3 -u -c 192.168.59.103 -p 1127 -b 70M -i 1 -t 10 -R
```

在pc端就会有相对应的数据产生, 进行分析。

```
C:\WINDOWS\system32\cmd.exe
D:\>cd Tool
D:\Tool>cd iperf_2_0_5_2
D:\Tool\iperf_2_0_5_2>
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.59.119 -p 1127
connect failed: Connection timed out
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.59.119 -p 1127 -i 1
Client connecting to 192.168.59.119, TCP port 1127
TCP window size: 64.0 KByte (default)
-----
[ 3] local 192.168.59.115 port 51619 connected with 192.168.59.119 port 1127
[ ID] Interval      Transfer    Bandwidth
[ 3] 0.0- 1.0 sec   256 KBytes  2.10 Mbits/sec
[ 3] 1.0- 2.0 sec   128 KBytes  1.05 Mbits/sec
[ 3] 2.0- 3.0 sec   128 KBytes  1.05 Mbits/sec
[ 3] 3.0- 4.0 sec    0.0 Bytes  0.00 bits/sec
[ 3] 4.0- 5.0 sec    0.0 Bytes  0.00 bits/sec
[ 3] 5.0- 6.0 sec    0.0 Bytes  0.00 bits/sec
[ 3] 6.0- 7.0 sec    0.0 Bytes  0.00 bits/sec
[ 3] 7.0- 8.0 sec   128 KBytes  1.05 Mbits/sec
[ 3] 8.0- 9.0 sec   128 KBytes  1.05 Mbits/sec
[ 3] 9.0-10.0 sec   256 KBytes  2.10 Mbits/sec
[ 3] 10.0-11.0 sec   0.0 Bytes  0.00 bits/sec
[ 3] 0.0-12.4 sec   1.12 MBytes 763 Kbits/sec
D:\Tool\iperf_2_0_5_2>
```

- 板子udp sever测试

板子作为sever, 板子串口中输入启动iperf的命令

```
1 net
2 iperf -q
3 iperf -s -p 1127 -u
```

```
hc1600a@dbA3200v10(net)# iperf -s -p 1127 -u
hc1600a@dbA3200v10(net)#
```

使用iperf3工具，则在板子串口输入以下命令

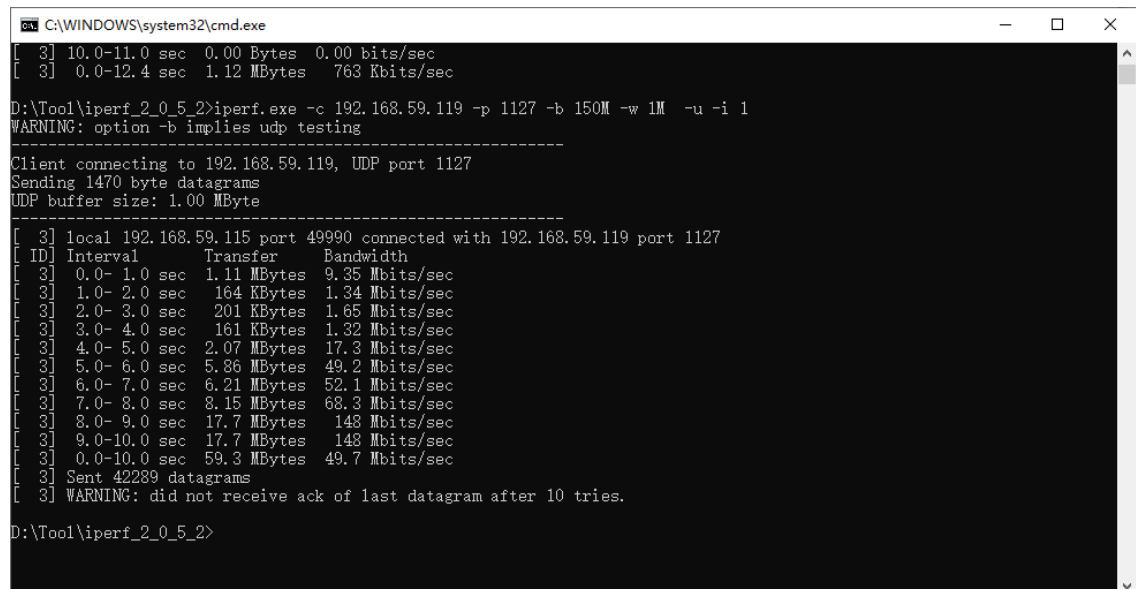
```
1 iperf -s -p 1127
```

pc作为client,在cmd中输入命令

```
1 iperf.exe -c 192.168.59.119 -p 1127 -b 150M -w 1M -u -i 1
2 //192.168.59.119 为板子的ip地址。
```

使用iperf3工具，如上操作

在pc端就会有相对应的数据产生，进行分析。



```
C:\WINDOWS\system32\cmd.exe
[ 3] 10.0-11.0 sec 0.00 Bytes 0.00 bits/sec
[ 3] 0.0-12.4 sec 1.12 MBytes 763 Kbits/sec
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.59.119 -p 1127 -b 150M -w 1M -u -i 1
WARNING: option -b implies udp testing
-----
Client connecting to 192.168.59.119, UDP port 1127
Sending 1470 byte datagrams
UDP buffer size: 1.00 MByte
-----
[ 3] local 192.168.59.115 port 49990 connected with 192.168.59.119 port 1127
[ ID] Interval      Transfer      Bandwidth
[ 3] 0.0- 1.0 sec  1.11 MBytes  9.35 Mbits/sec
[ 3] 1.0- 2.0 sec  164 KBytes  1.34 Mbits/sec
[ 3] 2.0- 3.0 sec  201 KBytes  1.65 Mbits/sec
[ 3] 3.0- 4.0 sec  161 KBytes  1.32 Mbits/sec
[ 3] 4.0- 5.0 sec  2.07 MBytes 17.3 Mbits/sec
[ 3] 5.0- 6.0 sec  5.86 MBytes 49.2 Mbits/sec
[ 3] 6.0- 7.0 sec  6.21 MBytes 52.1 Mbits/sec
[ 3] 7.0- 8.0 sec  8.15 MBytes 68.3 Mbits/sec
[ 3] 8.0- 9.0 sec 17.7 MBytes 148 Mbits/sec
[ 3] 9.0-10.0 sec 17.7 MBytes 148 Mbits/sec
[ 3] 0.0-10.0 sec 59.3 MBytes 49.7 Mbits/sec
[ 3] Sent 42289 datagrams
[ 3] WARNING: did not receive ack of last datagram after 10 tries.
D:\Tool\iperf_2_0_5_2>
```

4.2 LINUX sta mode测试步骤

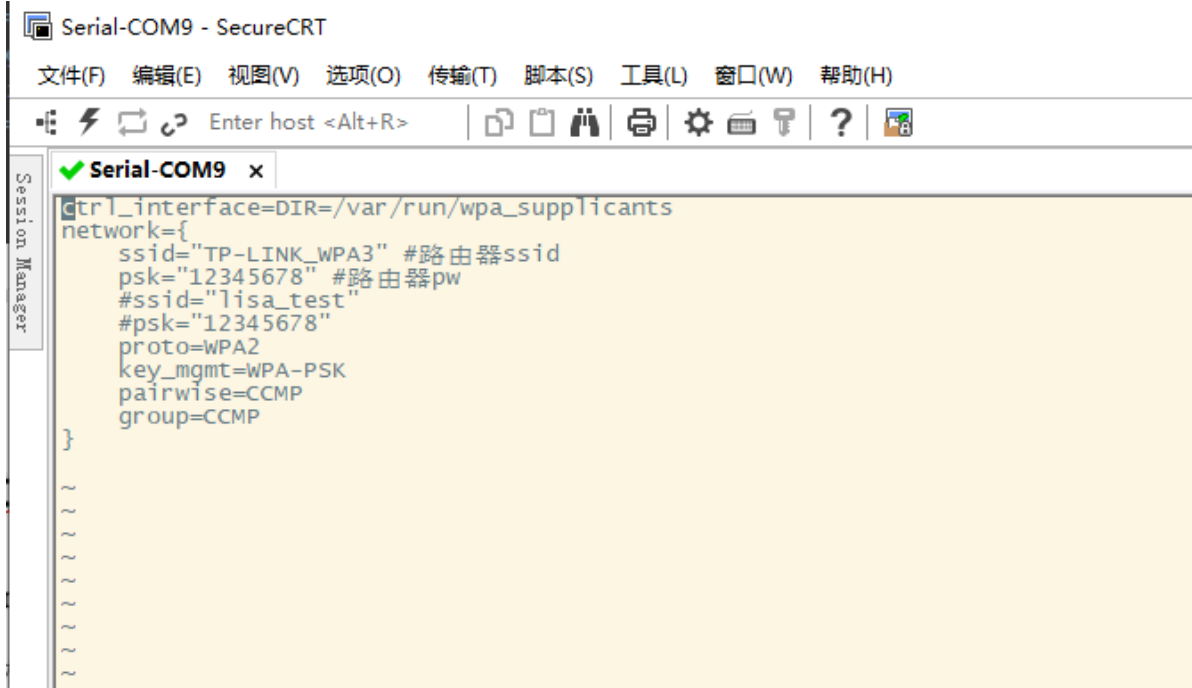
- 测试第一步：在板子中编写wpa.conf(用于sta 连接路由器)；wpa.conf内容可以在串口中断vi编辑进入，或者在PC端编辑，copy到U盘，然后平台从U盘copy到终端/tmp目录下。

其中wpa.conf 内容如下：

```
1 ctrl_interface=DIR=/var/run/wpa_supplicants
2 network={
3     ssid="TP-LINK_WPA3" #路由器ssid
4     psk="12345678" #路由器pw
5     #ssid="lisa_test"
6     #psk="12345678"
7     proto=WPA2
8     key_mgmt=WPA-PSK
9     pairwise=CCMP
10    group=CCMP
11 }
12
```

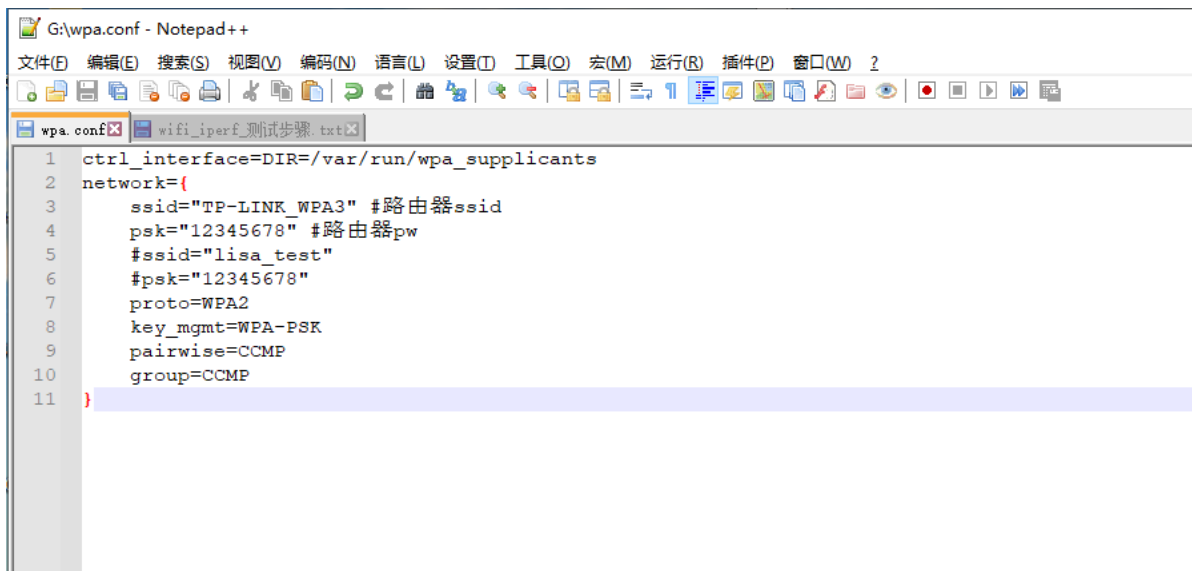
第一种方式：vi /tmp/wpa.conf，按键i进入编辑，把wpa.conf 内容copy进去，按键Esc退出编辑，Shift+:然后输入wq回车保存退出。

```
1 vi /tmp/wpa.conf
2 i
```



```
1 按键ESC
2  Shift + :
3  wq 回车
```

第二种方式：pc编译wpa.conf文件



板子串口cp wpa.conf文件到/tmp(可以查看sda中文件所在的位置)s

```
1 cp /media/sda/wpa.conf /tmp/
```

```
# cp /media/sda/wpa.conf /tmp/
# ls tmp/
hotplug.socket  messages      wpa.conf
# ps
```

- 测试第二步：板子串口执行ps命令，检查是否已经启动了hostapd 或者wpa服务，若没有启动忽略此步骤，如有启动，kill 掉对应的进程：

```
1 ps
2 kill -9 2018// 2018 为hostpad 或wpa_supplicant 对应的进程号；
```

PS：如果kill不掉则需要先kill掉{daemon_monitor.} /bin/sh /etc/daemon_monitor.sh

```
1067 root    /usr/bin/hcprojector
1112 root    [cfg80211]
1137 root    [RTW_CMD_THREAD]
1140 root    hostapd /etc/hostapd.conf -B
1145 root    wpa_supplicant -Dnl80211 -ip2p0 -c/tmp/wpa_supplicant.conf -B
1147 root    wpa_supplicant -Dnl80211 -iwlan0 -c/etc/wpa_supplicant.conf -B
1157 root    {daemon_monitor.} /bin/sh /etc/daemon_monitor.sh
1225 root    sleep 3
1227 root    ps
#
```

```
1 kill -9 1157 //1157 为{daemon_monitor.} /bin/sh /etc/daemon_monitor.sh 的进程号；
```

- 测试第三步：板子串口输入以下命令，启动wpa_supplicant 连接路由：

```
1 wpa_supplicant -Dnl80211 -iwlan0 -c/tmp/wpa.conf -B
```

```
# wpa_supplicant -Dnl80211 -iwlan0 -c/tmp/wpa.conf -B
Successfully initialized wpa_supplicant
#
```

- 测试第四步：板子串口输入一下命令，分配板子ip

```
1 udhcpc -i wlan0
```

```
# udhcpc -i wlan0
udhcpc: started, v1.33.0
udhcpc: sending discover
udhcpc: sending select for 192.168.59.101
udhcpc: lease of 192.168.59.101 obtained, lease time 7200
deleting routers
adding dns 223.5.5.5
adding dns 223.6.6.6
#
```

- 板子tcp/udp client 测试

- 板子tcp client测试

在pc端作为sever，cmd中输入启动iperf的命令

```
1 iperf.exe -s -p 1127 -i 1
2 //iperf3
3 iperf3.exe -s -p 1127 -i 1
```

```
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1
```

```
-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----
```

板子作为client，在板子串口输入iperf命令

```

1 iperf -c 192.168.59.100 -p 1127
2 //192.168.59.100 为pc ip地址
3 //iperf3
4 iperf3 -c 192.168.59.100 -p 1127 -i 1 -t 10

```

```

# iperf -c 192.168.59.100 -p 1127
-----
Client connecting to 192.168.59.100, TCP port 1127
TCP window size: 43.8 KByte (default)
-----
[ 3] local 192.168.59.101 port 43318 connected with 192.168.59.100 port 1127
[ ID] Interval      Transfer    Bandwidth
[ 3] 0.0-10.2 sec  5.00 MBytes  4.11 Mbits/sec
#

```

在pc端就会有相对应的数据产生，进行分析。

```

C:\WINDOWS\system32\cmd.exe - iperf.exe -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----
D:\Tool\iperf_2_0_5_2>
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.5.1 -p 1127
connect failed: Interrupted system call
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----
[ 4] local 192.168.59.100 port 1127 connected with 192.168.59.101 port 43318
[ ID] Interval      Transfer    Bandwidth
[ 4] 0.0- 1.0 sec  348 KBytes  2.85 Mbits/sec
[ 4] 1.0- 2.0 sec  572 KBytes  4.68 Mbits/sec
[ 4] 2.0- 3.0 sec  570 KBytes  4.67 Mbits/sec
[ 4] 3.0- 4.0 sec  331 KBytes  2.71 Mbits/sec
[ 4] 4.0- 5.0 sec  631 KBytes  5.17 Mbits/sec
[ 4] 5.0- 6.0 sec  556 KBytes  4.56 Mbits/sec
[ 4] 6.0- 7.0 sec  429 KBytes  3.52 Mbits/sec
[ 4] 7.0- 8.0 sec  461 KBytes  3.77 Mbits/sec
[ 4] 8.0- 9.0 sec  436 KBytes  3.57 Mbits/sec
[ 4] 9.0-10.0 sec  522 KBytes  4.27 Mbits/sec
[ 4] 0.0-10.6 sec  5.00 MBytes  3.96 Mbits/sec

```

o 板子udp client测试

在pc端作为sever，cmd中输入启动iperf的命令

```

1 iperf.exe -s -p 1127 -i 1 -u
2 //iperf3
3 iperf3.exe -s -p 1127 -i 1

```

```

D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 64.0 KByte (default)
-----

```

板子作为client，在板子串口输入iperf命令

```

1 iperf -c 192.168.59.100 -p 1127 -b 200M -w 1M -u -i 1
2 //192.168.59.100 为pc ip地址
3 //iperf3
4 iperf3 -c 192.168.59.100 -p 1127 -b 70M -w 1M -u -i 1

```

```
# iperf -c 192.168.59.100 -p 1127 -b 200M -w 1M -u -i 1
-----
Client connecting to 192.168.59.100, UDP port 1127
Sending 1470 byte datagrams, IPG target: 56.08 us (kalman adjust)
UDP buffer size: 320 KByte (WARNING: requested 1.00 MByte)
-----
[ 3] local 192.168.59.101 port 51303 connected with 192.168.59.100 port 1127
[ ID] Interval      Transfer      Bandwidth
[ 3] 0.0- 1.0 sec   606 KBytes    4.96 Mbits/sec
[ 3] 1.0- 2.0 sec   102 KBytes     835 Kbits/sec
[ 3] 2.0- 3.0 sec   51.7 KBytes    423 Kbits/sec
[ 3] 3.0- 4.0 sec   18.7 KBytes    153 Kbits/sec
[ 3] 4.0- 5.0 sec   121 KBytes     988 Kbits/sec
[ 3] 5.0- 6.0 sec   431 KBytes    3.53 Mbits/sec
[ 3] 6.0- 7.0 sec   758 KBytes    6.21 Mbits/sec
[ 3] 7.0- 8.0 sec   861 KBytes    7.06 Mbits/sec
[ 3] 8.0- 9.0 sec   896 KBytes    7.34 Mbits/sec
[ 3] 0.0-10.1 sec   4.71 MBytes    3.90 Mbits/sec
[ 3] Sent 3361 datagrams
#
```

在pc端就会有相对应的数据产生，进行分析。

```
C:\WINDOWS\system32\cmd.exe - iperf.exe -s -p 1127 -i 1 -u
[ 4] 3.0- 4.0 sec   331 KBytes    2.71 Mbits/sec
[ 4] 4.0- 5.0 sec   631 KBytes    5.17 Mbits/sec
[ 4] 5.0- 6.0 sec   556 KBytes    4.56 Mbits/sec
[ 4] 6.0- 7.0 sec   429 KBytes    3.52 Mbits/sec
[ 4] 7.0- 8.0 sec   461 KBytes    3.77 Mbits/sec
[ 4] 8.0- 9.0 sec   436 KBytes    3.57 Mbits/sec
[ 4] 9.0-10.0 sec   522 KBytes    4.27 Mbits/sec
[ 4] 0.0-10.6 sec   5.00 MBytes    3.96 Mbits/sec
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 64.0 KByte (default)
-----
[ 3] local 192.168.59.100 port 1127 connected with 192.168.59.101 port 51303
[ ID] Interval      Transfer      Bandwidth      Jitter    Lost/Total Datagrams
[ 3] 0.0- 1.0 sec   66.0 KBytes    541 Kbits/sec   25.224 ms   0/ 46 (0%)
[ 3] 1.0- 2.0 sec   21.5 KBytes    176 Kbits/sec   46.474 ms   0/ 15 (0%)
[ 3] 2.0- 3.0 sec   8.61 KBytes    70.6 Kbits/sec  80.386 ms   0/ 6 (0%)
[ 3] 3.0- 4.0 sec   12.9 KBytes    106 Kbits/sec   93.166 ms   0/ 9 (0%)
[ 3] 4.0- 5.0 sec   73.2 KBytes    600 Kbits/sec   16.256 ms   7/ 53 (12%)
[ 3] 5.0- 6.0 sec   702 KBytes    5.75 Mbits/sec   2.019 ms   0/ 489 (0%)
[ 3] 6.0- 7.0 sec   817 KBytes    6.69 Mbits/sec   12.146 ms   1/ 570 (0.18%)
[ 3] 7.0- 8.0 sec   848 KBytes    6.95 Mbits/sec   1.196 ms   0/ 591 (0%)
[ 3] 8.0- 9.0 sec   866 KBytes    7.09 Mbits/sec   2.693 ms   0/ 603 (0%)
[ 3] 9.0-10.0 sec   956 KBytes    7.83 Mbits/sec   1.089 ms   1/ 667 (0.15%)
[ 3] 0.0-10.5 sec   4.70 MBytes    3.76 Mbits/sec   10.856 ms   9/ 3361 (0.27%)
```

- 板子tcp/udp sever测试
 - 板子tcp sever测试

板子作为sever，板子串口中输入启动iperf的命令

```
1 iperf -s -p 1127 -i 1
2 //iperf3
3 iperf -s -p 1127 -i 1
```

```
# iperf -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 85.3 KByte (default)
-----
```

pc作为client,在cmd中输入命令

```
1 iperf.exe -c 192.168.59.101 -p 1127 -i 1
2 //iperf3
```



```
D:\Tool\iperf_2_0_5_2\iperf.exe -c 192.168.59.101 -p 1127 -i 1
-----
Client connecting to 192.168.59.101, TCP port 1127
TCP window size: 64.0 KByte (default)
-----
[ 3] local 192.168.59.100 port 54997 connected with 192.168.59.101 port 1127
[ ID] Interval           Transfer             Bandwidth
[ 3] 0.0- 1.0 sec      896 KBytes          7.34 Mbits/sec
[ 3] 1.0- 2.0 sec      640 KBytes          5.24 Mbits/sec
[ 3] 2.0- 3.0 sec      640 KBytes          5.24 Mbits/sec
[ 3] 3.0- 4.0 sec      512 KBytes          4.19 Mbits/sec
[ 3] 4.0- 5.0 sec      768 KBytes          6.29 Mbits/sec
[ 3] 5.0- 6.0 sec      384 KBytes          3.15 Mbits/sec
[ 3] 6.0- 7.0 sec      256 KBytes          2.10 Mbits/sec
```

在pc端和板子就都会有相对应的数据产生，进行分析。

```
[ 3] 0.0-10.1 sec  4.71 Mbytes  3.90 Mbits/sec
[ 3] Sent 3361 datagrams
# iperf -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 85.3 KByte (default)
-----
[ 4] local 192.168.59.101 port 1127 connected with 192.168.59.100 port 54997
[ ID] Interval           Transfer             Bandwidth
[ 4] 0.0- 1.0 sec      774 KBytes          6.34 Mbits/sec
[ 4] 1.0- 2.0 sec      688 KBytes          5.64 Mbits/sec
[ 4] 2.0- 3.0 sec      630 KBytes          5.16 Mbits/sec
[ 4] 3.0- 4.0 sec      521 KBytes          4.26 Mbits/sec
[ 4] 4.0- 5.0 sec      731 KBytes          5.99 Mbits/sec
[ 4] 5.0- 6.0 sec      403 KBytes          3.30 Mbits/sec
[ 4] 6.0- 7.0 sec      350 KBytes          2.87 Mbits/sec
[ 4] 7.0- 8.0 sec      201 KBytes          1.64 Mbits/sec
[ 4] 8.0- 9.0 sec       0.00 Bytes          0.00 bits/sec
[ 4] 9.0-10.0 sec      2.85 KBytes         23.4 Kbits/sec
[ 4] 10.0-11.0 sec     5.70 KBytes         46.7 Kbits/sec
[ 4] 11.0-12.0 sec     2.85 KBytes         23.4 Kbits/sec
[ 4] 12.0-13.0 sec     1.43 KBytes         11.7 Kbits/sec
[ 4] 13.0-14.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 14.0-15.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 15.0-16.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 16.0-17.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 17.0-18.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 18.0-19.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 19.0-20.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 20.0-21.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 21.0-22.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 22.0-23.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 23.0-24.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 24.0-25.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 25.0-26.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 26.0-27.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 27.0-28.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 28.0-29.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 29.0-30.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 30.0-31.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 31.0-32.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 32.0-33.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 33.0-34.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 34.0-35.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 35.0-36.0 sec     0.00 Bytes          0.00 bits/sec
[ 4] 36.0-37.0 sec     0.00 Bytes          0.00 bits/sec
```

o 板子udp sever测试

板子作为sever，板子串口中输入启动iperf的命令

```
1 iperf -s -p 1127 -i 1 -u
2 //iperf3
3 iperf3 -s -p 1127 -i 1
```

```
# iperf -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 160 KByte (default)
-----
1^H
```

pc作为client,在cmd中输入命令

```
1 iperf.exe -c 192.168.59.101 -p 1127 -b 200M -w 1M -u -i 1
2 //iperf3
3 iperf3.exe -c 192.168.59.101 -p 1127 -b 200M -w 1M -u -i 1
```

```
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.59.101 -p 1127 -b 200M -w 1M -u -i 1
WARNING: option -b implies udp testing
-----
Client connecting to 192.168.59.101, UDP port 1127
Sending 1470 byte datagrams
UDP buffer size: 1.00 MByte
-----
[ 3] local 192.168.59.100 port 55520 connected with 192.168.59.101 port 1127
[ ID] Interval      Transfer      Bandwidth
[ 3] 0.0- 1.0 sec   1.40 MBytes   11.7 Mbits/sec
[ 3] 1.0- 2.0 sec   445 KBytes    3.65 Mbits/sec
[ 3] 2.0- 3.0 sec   418 KBytes    3.42 Mbits/sec
[ 3] 3.0- 4.0 sec   547 KBytes    4.48 Mbits/sec
[ 3] 4.0- 5.0 sec   478 KBytes    3.92 Mbits/sec
[ 3] 5.0- 6.0 sec   547 KBytes    4.48 Mbits/sec
[ 3] 6.0- 7.0 sec   458 KBytes    3.75 Mbits/sec
[ 3] 7.0- 8.0 sec   485 KBytes    3.97 Mbits/sec
[ 3] 8.0- 9.0 sec   682 KBytes    5.59 Mbits/sec
[ 3] 9.0-10.0 sec   606 KBytes    4.96 Mbits/sec
[ 3] 0.0-10.0 sec   5.96 MBytes   4.99 Mbits/sec
[ 3] Sent 4250 datagrams
D:\Tool\iperf_2_0_5_2>
```

在pc端和板子就都会有相对应的数据产生，进行分析。

```
4] 25.0-26.0 sec 0.00 Bytes 0.00 bits/sec
4] 26.0-27.0 sec 0.00 Bytes 0.00 bits/sec
4] 27.0-28.0 sec 0.00 Bytes 0.00 bits/sec
4] 28.0-29.0 sec 0.00 Bytes 0.00 bits/sec
4] 29.0-30.0 sec 0.00 Bytes 0.00 bits/sec
4] 30.0-31.0 sec 0.00 Bytes 0.00 bits/sec
4] 31.0-32.0 sec 0.00 Bytes 0.00 bits/sec
4] 32.0-33.0 sec 0.00 Bytes 0.00 bits/sec
4] 33.0-34.0 sec 0.00 Bytes 0.00 bits/sec
4] 34.0-35.0 sec 0.00 Bytes 0.00 bits/sec
4] 35.0-36.0 sec 0.00 Bytes 0.00 bits/sec
4] 36.0-37.0 sec 0.00 Bytes 0.00 bits/sec
4] 37.0-38.0 sec 0.00 Bytes 0.00 bits/sec
4] 38.0-39.0 sec 0.00 Bytes 0.00 bits/sec
4] 39.0-40.0 sec 0.00 Bytes 0.00 bits/sec
4] 40.0-41.0 sec 0.00 Bytes 0.00 bits/sec
^CWaiting for server threads to complete. Interrupt again to force quit.
[ 4] 0.0-41.7 sec 4.21 MBytes 846 Kbits/sec
# iperf -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 85.3 Kbyte (default)
-----
# iperf -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 160 Kbyte (default)
-----
1M[ 3] local 192.168.59.101 port 1127 connected with 192.168.59.100 port 55520
[ ID] Interval      Transfer      Bandwidth      Jitter      Lost/Total Datagrams
[ 3] 0.0- 1.0 sec   307 KBytes    2.52 Mbits/sec  4.181 ms    18/ 232 (7.8%)
[ 3] 1.0- 2.0 sec   461 KBytes    3.77 Mbits/sec  3.359 ms     2/ 323 (0.62%)
[ 3] 2.0- 3.0 sec   454 KBytes    3.72 Mbits/sec 12.525 ms     0/ 316 (0%)
[ 3] 3.0- 4.0 sec   487 KBytes    3.99 Mbits/sec  5.422 ms     3/ 342 (0.88%)
[ 3] 4.0- 5.0 sec   533 KBytes    4.36 Mbits/sec  6.441 ms     2/ 373 (0.54%)
[ 3] 5.0- 6.0 sec   484 KBytes    3.96 Mbits/sec  5.659 ms     0/ 337 (0%)
[ 3] 6.0- 7.0 sec   485 KBytes    3.97 Mbits/sec  2.918 ms     0/ 338 (0%)
[ 3] 7.0- 8.0 sec   491 KBytes    4.02 Mbits/sec  3.511 ms     1/ 343 (0.29%)
[ 3] 8.0- 9.0 sec   673 KBytes    5.52 Mbits/sec  2.974 ms     0/ 469 (0%)
[ 3] 9.0-10.0 sec   614 KBytes    5.03 Mbits/sec  4.682 ms     8/ 436 (1.8%)
[ 3] 10.0-11.0 sec   558 KBytes    4.57 Mbits/sec  3.973 ms     7/ 396 (1.8%)
[ 3] 11.0-12.0 sec   365 KBytes    2.99 Mbits/sec  2.936 ms    34/ 288 (12%)
[ 3] 0.0-12.2 sec   5.83 MBytes   4.00 Mbits/sec  7.829 ms    91/ 4249 (2.1%)
[ 3] 0.00-12.21 sec 1 datagrams received out-of-order
```

5、hostapd mode测试

5.1 RTOS hostapd mode测试步骤

- 测试第一步：板子串口输入以下命令，打开dhcps。

```
1 net
2 ifconfig wlan0 netmask 255.255.255.0
3 ifconfig wlan0 192.168.5.1 gateway 192.168.5.1
4 udhcpd start wlan0 192.168.5.2 10
```

```
hc1600a@dba3200v10#
hc1600a@dba3200v10# net
hc1600a@dba3200v10(net)# ifconfig wlan0 netmask 255.255.255.0
hc1600a@dba3200v10(net)# ifconfig wlan0 192.168.5.1 gateway 192.168.5.1
hc1600a@dba3200v10(net)# udhcpd start wlan0 192.168.5.2 10
hc1600a@dba3200v10(net)# ifconfig
p2p0      ip:0.0.0.0 netmask:0.0.0.0 gateway:0.0.0.0
          Hwaddr 6e:60:eb:00:00:13 MTU:1500 Stop Link Down
wlan0     ip:192.168.5.1 netmask:255.255.255.0 gateway:192.168.5.1
          Hwaddr 6c:60:eb:00:00:13 MTU:1500 Running Default Link Down
eth0      ip:0.0.0.0 netmask:0.0.0.0 gateway:0.0.0.0
          Hwaddr de:ad:be:ef:00:00 MTU:1500 Stop Link Down
lo        ip:127.0.0.1 netmask:255.0.0.0 gateway:127.0.0.1
          Hwaddr 00 MTU:0 Running Link UP
```

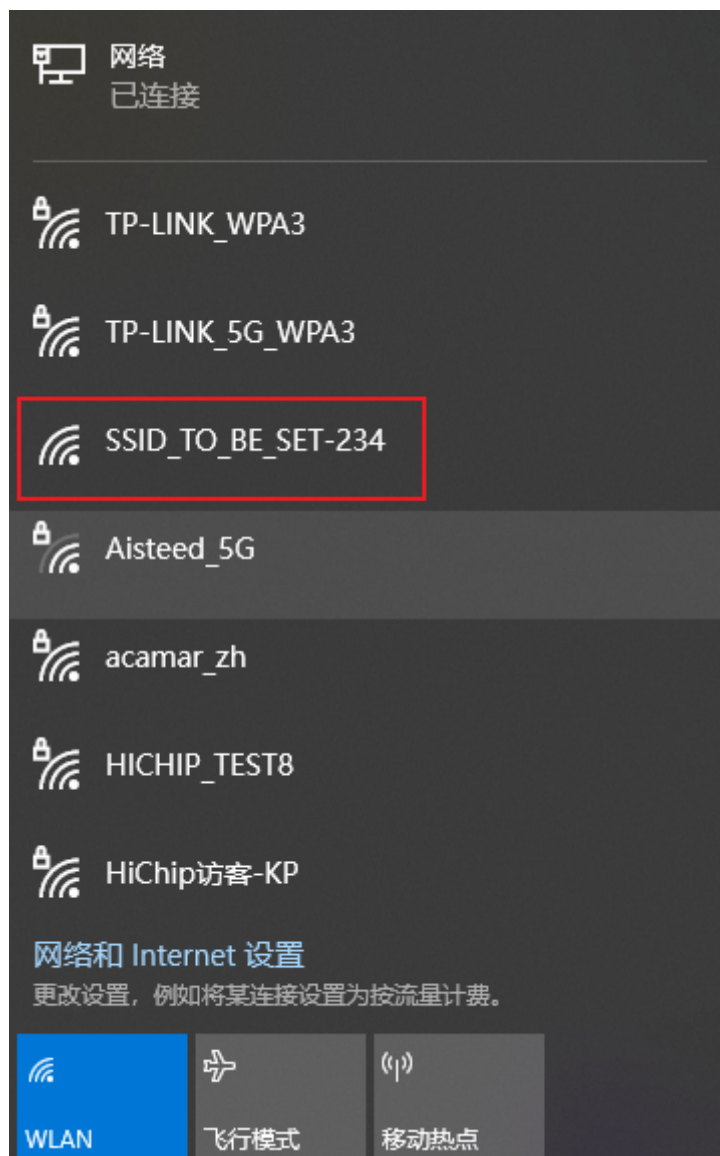
- 测试第二步：板子串口输入命令启动hostapd和p2p。

```
1 wifi
2 wpa_supplicant -H -i p2p0 -x 9890 -x 9883 -Dwext -c
  /etc/wpa_supplicant.conf -C /var/run/wpa_supplicant
```

```
hc1600a@dba3200v10# wifi
hc1600a@dba3200v10(wifi)# wpa_supplicant -H -i p2p0 -x 9890 -x 9883 -Dwext -c /etc/wpa_supplicant.conf -C /var/run/wpa_supplicant
Create thread success.
hc1600a@dba3200v10(wifi)# [start_bss_network][1787]ch_to_set==6
[rtw_set_txq_params][7873]
[rtw_set_txq_params][7873]
[rtw_set_txq_params][7873]
[rtw_set_txq_params][7873]
[rtw_set_mac_acl][7836]
ioctl[SIOCSIWAP]: Not owner
```

这时板子已能发送热点名为SSID_TO_BE_SET-234的热点

- 测试第三步：主机使用2.4G wifi 连接上面发送的热点(SSID_TO_BE_SET-234)，无密码



- 板子hostapd tcp/udp client 测试

- 板子hostapd tcp 测试

在pc端作为sever，cmd中输入启动iperf的命令

```

1 | iperf.exe -s -p 1127 -i 1
2 | //iperf3
3 | iperf3.exe -s -p 1127 -i 1

```

```
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1
```

```

-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----

```

板子作为client，在板子串口输入iperf命令

```

1 | net
2 | iperf -c 192.168.5.2 -p 1127
3 | //192.168.5.2 为pc的ip地址
4 | //iperf3
5 | iperf3 -c 192.168.5.2 -p 1127 -i 1 -t 10

```

```

hc1600a@dbA3200v10# net
hc1600a@dbA3200v10(net)# iperf -c 192.168.5.2 -p 1127
hc1600a@dbA3200v10(net)#

```

在pc端就会有相对应的数据产生，进行分析。

```

C:\WINDOWS\system32\cmd.exe - iperf.exe -s -p 1127 -i 1
(c) Microsoft Corporation。保留所有权利。
C:\Users\PC-admin>D:
D:\>cd Tool
D:\Tool>cd iperf_2_0_5_2
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----
[ 4] local 192.168.5.2 port 1127 connected with 192.168.5.1 port 52432
ID Interval Transfer Bandwidth
[ 4] 0.0- 1.0 sec 2.82 MBytes 23.7 Mbits/sec
[ 4] 1.0- 2.0 sec 3.41 MBytes 28.6 Mbits/sec
[ 4] 2.0- 3.0 sec 2.78 MBytes 23.3 Mbits/sec
[ 4] 3.0- 4.0 sec 4.01 MBytes 33.6 Mbits/sec
[ 4] 4.0- 5.0 sec 3.87 MBytes 32.4 Mbits/sec
[ 4] 5.0- 6.0 sec 3.43 MBytes 28.7 Mbits/sec
[ 4] 6.0- 7.0 sec 3.74 MBytes 31.4 Mbits/sec
[ 4] 7.0- 8.0 sec 3.61 MBytes 30.3 Mbits/sec
[ 4] 8.0- 9.0 sec 2.25 MBytes 18.9 Mbits/sec
[ 4] 9.0-10.0 sec 304 KBytes 2.49 Mbits/sec
[ 4] 10.0-11.0 sec 1.94 MBytes 16.3 Mbits/sec
[ 4] 11.0-12.0 sec 1.71 MBytes 14.3 Mbits/sec
[ 4] 12.0-13.0 sec 989 KBytes 8.10 Mbits/sec
[ 4] 13.0-14.0 sec 1.35 MBytes 11.4 Mbits/sec

```

- 板子hostapd udp 测试

在pc端作为sever，cmd中输入启动iperf的命令

```

1 | iperf.exe -s -p 1127 -i 1 -u
2 | //iperf3
3 | iperf3.exe -s -p 1127 -i 1

```

```
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 64.0 KByte (default)
-----
```

板子作为client，在板子串口输入iperf命令

PS: 如果进行过client tcp测试，则需要iperf -q 退出后再输入

```
1 net
2 iperf -q (进行过client tcp测试，需要使用)
3 iperf -c 192.168.5.2 -p 1127 -u
4 //iperf3
5 iperf3 -c 192.168.5.2 -p 1127 -u -i 1 -t 10
```

```
hc1600a@dbA3200v10(net)# iperf -q
hc1600a@dbA3200v10(net)# iperf -c 192.168.5.2 -p 1127 -u
hc1600a@dbA3200v10(net)#
```

在pc端就会有相对应的数据产生，进行分析。

```
C:\WINDOWS\system32\cmd.exe - iperf.exe -s -p 1127 -i 1 -u
recvfrom failed: Interrupted system call
D:\Tool\iperf_2_0_5_2>
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 64.0 KByte (default)
-----
[ 3] local 192.168.5.2 port 1127 connected with 192.168.5.1 port 62510
[ ID] Interval      Transfer     Bandwidth   Jitter     Lost/Total Datagrams
[ 3] 0.0- 1.0 sec  2.29 MBytes  19.2 Mbits/sec  0.017 ms  47272/66051 (72%)
[ 3] 0.0- 1.0 sec  18778 datagrams received out-of-order
[ 3] 1.0- 2.0 sec  2.40 MBytes  20.1 Mbits/sec  0.017 ms  0/ 0 (nan%)
[ 3] 1.0- 2.0 sec  19676 datagrams received out-of-order
[ 3] 2.0- 3.0 sec  2.30 MBytes  19.3 Mbits/sec  0.013 ms  0/ 0 (nan%)
[ 3] 2.0- 3.0 sec  18838 datagrams received out-of-order
[ 3] 3.0- 4.0 sec  2.44 MBytes  20.4 Mbits/sec  0.013 ms  0/ 0 (nan%)
[ 3] 3.0- 4.0 sec  19970 datagrams received out-of-order
[ 3] 4.0- 5.0 sec  2.46 MBytes  20.6 Mbits/sec  0.021 ms  0/ 0 (nan%)
[ 3] 4.0- 5.0 sec  20149 datagrams received out-of-order
[ 3] 5.0- 6.0 sec  2.40 MBytes  20.1 Mbits/sec  0.030 ms  0/ 0 (nan%)
[ 3] 5.0- 6.0 sec  19641 datagrams received out-of-order
[ 3] 6.0- 7.0 sec  2.80 MBytes  23.5 Mbits/sec  0.011 ms  0/ 0 (nan%)
[ 3] 6.0- 7.0 sec  22960 datagrams received out-of-order
[ 3] 7.0- 8.0 sec  2.73 MBytes  22.9 Mbits/sec  0.006 ms  0/ 0 (nan%)
[ 3] 7.0- 8.0 sec  22338 datagrams received out-of-order
[ 3] 8.0- 9.0 sec  2.13 MBytes  17.9 Mbits/sec  0.015 ms  0/ 0 (nan%)
[ 3] 8.0- 9.0 sec  17461 datagrams received out-of-order
```

- 板子hostapd tcp/udp sever测试
 - 板子hostapd tcp sever测试

板子作为sever，板子串口中输入启动iperf的命令。

```
1 net
2 iperf -q
3 iperf -s -p 1127
4 //iperf3
5 iperf3 -s -p 1127
```

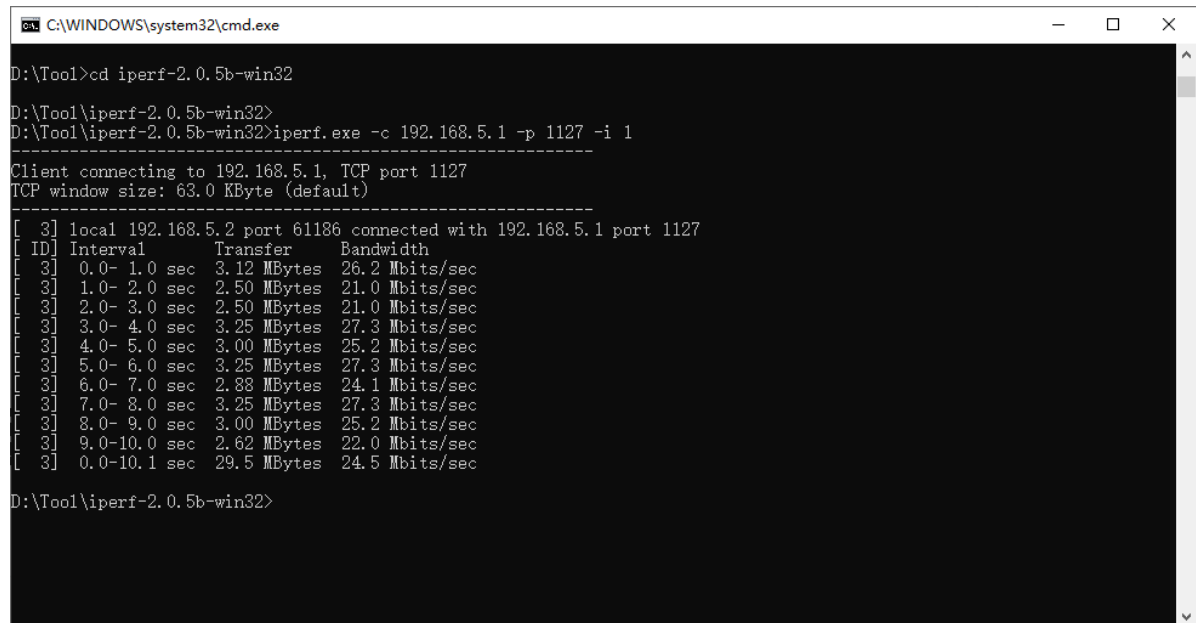
```
hc1600a@dbA3100v10(wifi)# exit
hc1600a@dbA3100v10# net
hc1600a@dbA3100v10(net)# iperf -s -p 1127
hc1600a@dbA3100v10(net)#
```

pc作为client,在cmd中输入命令

```
1 | iperf.exe -c 192.168.5.1 -p 1127 -i 1
```

```
D:\Tool\iperf-2.0.5b-win32>
D:\Tool\iperf-2.0.5b-win32>iperf.exe -c 192.168.5.1 -p 1127 -i 1
-----
```

在pc端就会有相对应的数据产生，进行分析。



```
C:\WINDOWS\system32\cmd.exe
D:\Tool>cd iperf-2.0.5b-win32
D:\Tool\iperf-2.0.5b-win32>
D:\Tool\iperf-2.0.5b-win32>iperf.exe -c 192.168.5.1 -p 1127 -i 1
-----
Client connecting to 192.168.5.1, TCP port 1127
TCP window size: 63.0 KByte (default)
-----
[ 3] local 192.168.5.2 port 61186 connected with 192.168.5.1 port 1127
[ ID] Interval      Transfer    Bandwidth
[ 3] 0.0- 1.0 sec   3.12 MBytes 26.2 Mbits/sec
[ 3] 1.0- 2.0 sec   2.50 MBytes 21.0 Mbits/sec
[ 3] 2.0- 3.0 sec   2.50 MBytes 21.0 Mbits/sec
[ 3] 3.0- 4.0 sec   3.25 MBytes 27.3 Mbits/sec
[ 3] 4.0- 5.0 sec   3.00 MBytes 25.2 Mbits/sec
[ 3] 5.0- 6.0 sec   3.25 MBytes 27.3 Mbits/sec
[ 3] 6.0- 7.0 sec   2.88 MBytes 24.1 Mbits/sec
[ 3] 7.0- 8.0 sec   3.25 MBytes 27.3 Mbits/sec
[ 3] 8.0- 9.0 sec   3.00 MBytes 25.2 Mbits/sec
[ 3] 9.0-10.0 sec   2.62 MBytes 22.0 Mbits/sec
[ 3] 0.0-10.1 sec  29.5 MBytes 24.5 Mbits/sec
D:\Tool\iperf-2.0.5b-win32>
```

板子hostapd tcp sever测试

板子作为sever，板子串口中输入启动iperf的命令。

```
1 | net
2 | iperf -q
3 | iperf -s -p 1127 -u
4 | //iperf3
5 | iperf3 -s -p 1127 -i 1
```

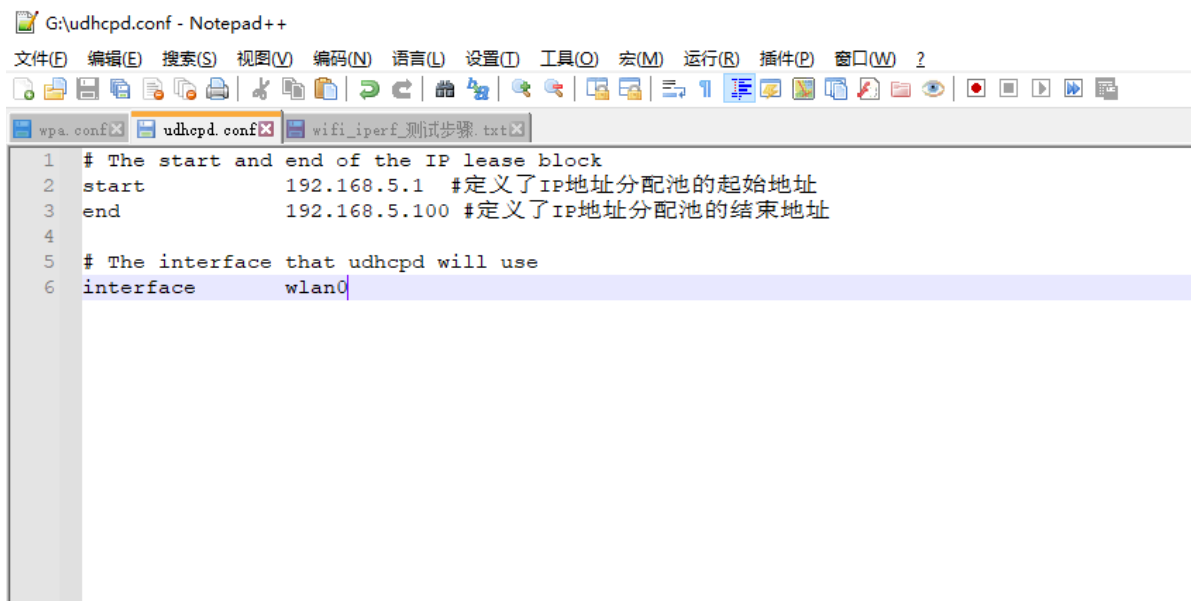
```
hc1600a@dbA3100v10(net)# iperf -s -p 1127 -u
hc1600a@dbA3100v10(net)#
```

pc作为client,在cmd中输入命令

```
1 | iperf.exe -c 192.168.5.1 -p 1127 -b 150M -w 1M -u -i 1
2 | //iperf3
3 | iperf3.exe -c 192.168.5.1 -p 1127 -b 150M -w 1M -u -i 1
```

```
D:\Tool\iperf-2.0.5b-win32>iperf.exe -c 192.168.5.1 -p 1127 -b 150M -w 1M -u -i 1
WARNING: option -b implies udp testing
-----
```

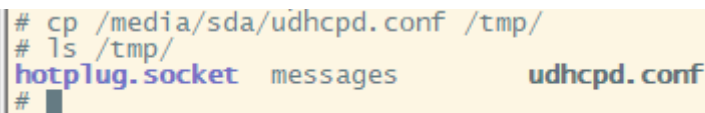
在pc端就会有相对应的数据产生，进行分析。



```
G:\udhcpd.conf - Notepad++
文件(F) 编辑(E) 搜索(S) 视图(V) 编码(N) 语言(L) 设置(I) 工具(O) 宏(M) 运行(R) 插件(P) 窗口(W) ?
wpa.conf udhcpd.conf wifi_iperf_测试步骤.txt
1 # The start and end of the IP lease block
2 start 192.168.5.1 #定义了IP地址分配池的起始地址
3 end 192.168.5.100 #定义了IP地址分配池的结束地址
4
5 # The interface that udhcpd will use
6 interface wlan0
```

板子串口cp wpa.conf文件到/tmp(可以查看sda中文件所在的位置)

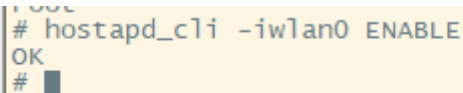
```
1 | cp /media/sda/udhcpd.conf /tmp/
```



```
# cp /media/sda/udhcpd.conf /tmp/
# ls /tmp/
hotplug.socket messages udhcpd.conf
#
```

- 测试第二步：板子将hostapd 使能启动，板子串口输入命令。

```
1 | hostapd_cli -iwlan0 ENABLE
```



```
# hostapd_cli -iwlan0 ENABLE
OK
#
```

这时板子已能发送热点名为SSID_TO_BE_SET的热点，但此时还不能进行测试。

- 测试第三步：板子串口ifconfig 分配ip地址。

PS：这里分配的ip地址一定要是第一步中ip地址起始地址和结束地址中。

```
1 | ifconfig wlan0 192.168.5.1
```



```
# ifconfig wlan0 192.168.5.1
# ifconfig
lo          Link encap:Local Loopback
            inet addr:127.0.0.1  Mask:255.0.0.0
            UP LOOPBACK RUNNING  MTU:65536  Metric:1
            RX packets:0 errors:0 dropped:0 overruns:0 frame:0
            TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1
            RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

p2p0       Link encap:Ethernet  HWaddr 6E:60:EB:00:00:13
            UP BROADCAST MULTICAST  MTU:1500  Metric:1
            RX packets:0 errors:0 dropped:0 overruns:0 frame:0
            TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

wlan0      Link encap:Ethernet  HWaddr 6C:60:EB:00:00:13
            inet addr:192.168.5.1  Bcast:192.168.5.255 Mask:255.255.255.0
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:162 errors:0 dropped:14 overruns:0 frame:0
            TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:8274 (8.0 KiB)  TX bytes:0 (0.0 B)

#
```

- 测试第四步：板子串口输入以下命令，启动udhcpd。ps可以查看是否启动成功。

```
1 udhcpd /tmp/udhcpd.conf
2 ps
```

```
# udhcpd /tmp/udhcpd.conf
# ps
PID    USER      COMMAND
1      root      [linuxrc] init
2      root      [kthreadd]
3      root      [ksoftirqd/0]
5      root      [kworker/0:0H]
7      root      [rcu_preempt]
8      root      [rcu_sched]
9      root      [rcu_bh]
10     root      [kdevtmpfs]
200    root      [writeback]
202    root      [crypto]
203    root      [bioset]
205    root      [kblockd]
306    root      [rpcwork0]
307    root      [rpcwork1]
308    root      [rpcwork2]
309    root      [rpcwork3]
310    root      [rpcwork4]
311    root      [rpcwork5]
312    root      [rpcwork6]
313    root      [rpcwork7]
315    root      [kworker/0:1]
322    root      [kswapd0]
323    root      [fsnotify_mark]
896    root      [kworker/u2:3]
904    root      [spi32766]
909    root      [bioset]
914    root      [bioset]
919    root      [bioset]
924    root      [bioset]
929    root      [bioset]
934    root      [bioset]
939    root      [bioset]
944    root      [bioset]
992    root      [rc0]
1010   root      [deferwq]
1014   root      [kworker/0:2]
1015   root      [kworker/0:1H]
1032   root      /sbin/syslogd -n
1036   root      /sbin/klogd -n
1066   root      -sh
1067   root      /usr/bin/hcprojector
1112   root      [cfg80211]
1137   root      [RTW_CMD_THREAD]
1140   root      hostapd /etc/hostapd.conf -B
1145   root      wpa_supplicant -Dnl80211 -ip2p0 -c/tmp/wpa_supplicant.conf -B
1147   root      wpa_supplicant -Dnl80211 -iwlan0 -c/etc/wpa_supplicant.conf -B
1157   root      {daemon_monitor.} /bin/sh /etc/daemon_monitor.sh
4994   root      [kworker/u2:0]
8296   root      udhcpd /tmp/udhcpd.conf
8568   root      sleep 3
8569   root      ps
#
```

- 测试第五步：主机使用2.4G wifi 连接上面发送的热点(SSID_TO_BE_SET)，无密码



- 板子hostapd tcp/udp client 测试
 - 板子hostapd tcp client 测试

在pc端作为sever, cmd中输入启动iperf的命令

```
1 iperf.exe -s -p 1127 -i 1
2 //iperf3
3 iperf3.exe -s -p 1127 -i 1
```

```
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----
```

板子作为client, 在板子串口输入iperf命令

```
1 iperf -c 192.168.5.2 -p 1127 -i 1
2 //192.168.5.2 为pc的ip地址
3 //iperf3
4 iperf3 -c 192.168.5.2 -p 1127 -i 1
```

```
AC# iperf -c 192.168.5.2 -p 1127 -i 1
-----
Client connecting to 192.168.5.2, TCP port 1127
TCP window size: 43.8 KByte (default)
-----
[ 3] local 192.168.5.1 port 55282 connected with 192.168.5.2 port 1127
[ ID] Interval      Transfer    Bandwidth
[ 3] 0.0- 1.0 sec   2.88 MBytes 24.1 Mbits/sec
[ 3] 1.0- 2.0 sec   3.12 MBytes 26.2 Mbits/sec
[ 3] 2.0- 3.0 sec   3.50 MBytes 29.4 Mbits/sec
[ 3] 3.0- 4.0 sec   3.50 MBytes 29.4 Mbits/sec
[ 3] 4.0- 5.0 sec   4.12 MBytes 34.6 Mbits/sec
[ 3] 5.0- 6.0 sec   4.12 MBytes 34.6 Mbits/sec
[ 3] 6.0- 7.0 sec   4.00 MBytes 33.6 Mbits/sec
[ 3] 7.0- 8.0 sec   3.75 MBytes 31.5 Mbits/sec
[ 3] 8.0- 9.0 sec   3.38 MBytes 28.3 Mbits/sec
[ 3] 9.0-10.0 sec   2.25 MBytes 18.9 Mbits/sec
[ 3] 0.0-10.0 sec   34.6 MBytes 29.0 Mbits/sec
#
```

在pc端就会有相对应的数据产生，进行分析。查看板子串口打印和pc打印。查看丢包率。

```
C:\WINDOWS\system32\cmd.exe - iperf.exe -s -p 1127 -i 1
recvfrom failed: Interrupted system call
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 64.0 KByte (default)
-----
[ 4] local 192.168.5.2 port 1127 connected with 192.168.5.1 port 55280
[ ID] Interval      Transfer    Bandwidth
[ 4] 0.0- 1.0 sec   2.56 MBytes 21.5 Mbits/sec
[ 4] 1.0- 2.0 sec   2.36 MBytes 19.8 Mbits/sec
[ 4] 2.0- 3.0 sec   3.07 MBytes 25.8 Mbits/sec
[ 4] 3.0- 4.0 sec   3.36 MBytes 28.1 Mbits/sec
[ 4] 4.0- 5.0 sec   3.34 MBytes 28.0 Mbits/sec
[ 4] 5.0- 6.0 sec   3.36 MBytes 28.2 Mbits/sec
[ 4] 6.0- 7.0 sec   3.37 MBytes 28.2 Mbits/sec
[ 4] 7.0- 8.0 sec   2.42 MBytes 20.3 Mbits/sec
[ 4] 8.0- 9.0 sec   2.67 MBytes 22.4 Mbits/sec
[ 4] 9.0-10.0 sec   3.75 MBytes 31.5 Mbits/sec
[ 4] 0.0-10.1 sec   30.5 MBytes 25.4 Mbits/sec
```

o 板子hostapd udp client 测试

在pc端作为sever，cmd中输入启动iperf的命令

```
1 iperf.exe -s -p 1127 -i 1 -u
2 //iperf3
3 iperf3.exe -s -p 1127 -i 1
```

```
D:\Tool\iperf_2_0_5_2>iperf.exe -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 64.0 KByte (default)
-----
```

板子作为client，在板子串口输入iperf命令

PS: 如果进行过client tcp测试，则需要iperf -q 退出后再输入

```

1 iperf -c 192.168.5.2 -p 1127 -b 200M -w 1M -u -i 1
2 //iperf3
3 iperf3 -c 192.168.5.2 -p 1127 -b 200M -w 1M -u -i 1

```

```

# iperf -c 192.168.5.2 -p 1127 -b 200M -w 1M -u -i 1
-----
Client connecting to 192.168.5.2, UDP port 1127
Sending 1470 byte datagrams, IPG target: 56.08 us (kalman adjust)
UDP buffer size: 320 KByte (WARNING: requested 1.00 MByte)
-----
[ 3] local 192.168.5.1 port 54360 connected with 192.168.5.2 port 1127
[ ID] Interval      Transfer      Bandwidth
[ 3] 0.0- 1.0 sec   4.84 MBytes   40.6 Mb/s
[ 3] 1.0- 2.0 sec   4.36 MBytes   36.6 Mb/s
[ 3] 2.0- 3.0 sec   4.44 MBytes   37.2 Mb/s
[ 3] 3.0- 4.0 sec   4.05 MBytes   34.0 Mb/s
[ 3] 4.0- 5.0 sec   4.25 MBytes   35.7 Mb/s
[ 3] 5.0- 6.0 sec   4.30 MBytes   36.1 Mb/s
[ 3] 6.0- 7.0 sec   3.87 MBytes   32.4 Mb/s
[ 3] 7.0- 8.0 sec   3.15 MBytes   26.4 Mb/s
[ 3] 8.0- 9.0 sec   3.77 MBytes   31.6 Mb/s
[ 3] 9.0-10.0 sec   3.46 MBytes   29.0 Mb/s
[ 3] 0.0-10.0 sec   40.5 MBytes   34.0 Mb/s
[ 3] sent 28873 datagrams
#

```

在pc端就也有相对应的数据产生，进行分析。注意查看打印，查看丢包率：

```

C:\WINDOWS\system32\cmd.exe - iperf.exe -s -p 1127 -i 1 -u
[ 4] 9.0-10.0 sec   3.75 MBytes   31.5 Mb/s
[ 4] 0.0-10.1 sec   30.5 MBytes   25.4 Mb/s
D:\Tool\iperf_2.0.5.2>iperf.exe -s -p 1127 -i 1 -u
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 64.0 KByte (default)
-----
[ 3] local 192.168.5.2 port 1127 connected with 192.168.5.1 port 54360
[ ID] Interval      Transfer      Bandwidth      Jitter    Lost/Total Datagrams
[ 3] 0.0- 1.0 sec   4.42 MBytes   37.1 Mb/s       0.350 ms   0/ 3151 (0%)
[ 3] 1.0- 2.0 sec   4.32 MBytes   36.2 Mb/s       0.847 ms   0/ 3079 (0%)
[ 3] 2.0- 3.0 sec   4.44 MBytes   37.2 Mb/s       0.658 ms   0/ 3164 (0%)
[ 3] 3.0- 4.0 sec   4.09 MBytes   34.3 Mb/s       0.403 ms   0/ 2914 (0%)
[ 3] 4.0- 5.0 sec   4.26 MBytes   35.7 Mb/s       0.451 ms   0/ 3039 (0%)
[ 3] 5.0- 6.0 sec   4.36 MBytes   36.6 Mb/s       0.913 ms   0/ 3112 (0%)
[ 3] 6.0- 7.0 sec   3.84 MBytes   32.2 Mb/s       0.769 ms   0/ 2737 (0%)
[ 3] 7.0- 8.0 sec   3.07 MBytes   25.8 Mb/s       0.441 ms   0/ 2190 (0%)
[ 3] 8.0- 9.0 sec   3.78 MBytes   31.7 Mb/s       0.289 ms   0/ 2695 (0%)
[ 3] 9.0-10.0 sec   3.51 MBytes   29.5 Mb/s       6.759 ms   0/ 2507 (0%)
[ 3] 0.0-10.1 sec   40.5 MBytes   33.6 Mb/s       0.462 ms   0/28873 (0%)

```

- 板子hostapd tcp/udp sever测试
 - 板子hostapd tcp sever测试

板子作为sever，板子串口中输入启动iperf的命令。

```

1 iperf -s -p 1127 -i 1
2 //iperf3
3 iperf3 -s -p 1127 -i 1

```

```

[ 3] sent 28873 datagrams
# iperf -s -p 1127 -i 1
-----
Server listening on TCP port 1127
TCP window size: 85.3 KByte (default)
-----
Send commands to active session

```

pc作为client,在cmd中输入命令

```

1 iperf.exe -c 192.168.5.1 -p 1127 -i 1
2 //iperf3
3 iperf3.exe -c 192.168.5.1 -p 1127 -i 1

```

```
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.5.1 -p 1127 -i 1
```

在pc端就会有相对应的数据产生，进行分析。

```

C:\WINDOWS\system32\cmd.exe
[ 3] 3.0- 4.0 sec 4.09 MBytes 34.3 Mbits/sec 0.403 ms 0/ 2914 (0%)
[ 3] 4.0- 5.0 sec 4.26 MBytes 35.7 Mbits/sec 0.451 ms 0/ 3039 (0%)
[ 3] 5.0- 6.0 sec 4.36 MBytes 36.6 Mbits/sec 0.913 ms 0/ 3112 (0%)
[ 3] 6.0- 7.0 sec 3.84 MBytes 32.2 Mbits/sec 0.769 ms 0/ 2737 (0%)
[ 3] 7.0- 8.0 sec 3.07 MBytes 25.8 Mbits/sec 0.441 ms 0/ 2190 (0%)
[ 3] 8.0- 9.0 sec 3.78 MBytes 31.7 Mbits/sec 0.289 ms 0/ 2695 (0%)
[ 3] 9.0-10.0 sec 3.51 MBytes 29.5 Mbits/sec 6.759 ms 0/ 2507 (0%)
[ 3] 0.0-10.1 sec 40.5 MBytes 33.6 Mbits/sec 0.462 ms 0/28873 (0%)
recvfrom failed: Interrupted system call

D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.5.1 -p 1127 -i 1
-----
Client connecting to 192.168.5.1, TCP port 1127
TCP window size: 64.0 KByte (default)
-----
[ 3] local 192.168.5.2 port 51785 connected with 192.168.5.1 port 1127
[ ID] Interval      Transfer    Bandwidth
[ 3] 0.0- 1.0 sec 3.62 MBytes 30.4 Mbits/sec
[ 3] 1.0- 2.0 sec 3.25 MBytes 27.3 Mbits/sec
[ 3] 2.0- 3.0 sec 3.75 MBytes 31.5 Mbits/sec
[ 3] 3.0- 4.0 sec 3.38 MBytes 28.3 Mbits/sec
[ 3] 4.0- 5.0 sec 2.88 MBytes 24.1 Mbits/sec
[ 3] 5.0- 6.0 sec 3.50 MBytes 29.4 Mbits/sec
[ 3] 6.0- 7.0 sec 4.00 MBytes 33.6 Mbits/sec
[ 3] 7.0- 8.0 sec 3.75 MBytes 31.5 Mbits/sec
[ 3] 8.0- 9.0 sec 3.62 MBytes 30.4 Mbits/sec
[ 3] 9.0-10.0 sec 3.50 MBytes 29.4 Mbits/sec
[ 3] 0.0-10.1 sec 35.4 MBytes 29.5 Mbits/sec

D:\Tool\iperf_2_0_5_2>

```

- o 板子hostapd udp sever测试

板子作为sever，板子串口中输入启动iperf的命令。

```

1 iperf -s -p 1127 -u -i 1
2 //iperf3
3 iperf -s -p 1127 -i 1

```

```

^C# iperf -s -p 1127 -u -i 1
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 160 KByte (default)
-----

```

pc作为client,在cmd中输入命令

```

1 iperf.exe -c 192.168.5.1 -p 1127 -b 150M -w 1M -u -i 1
2 //iperf3
3 iperf3.exe -c 192.168.5.1 -p 1127 -b 150M -w 1M -u -i 1

```

```
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.5.1 -p 1127 -b 150M -w 1M -u -i 1
WARNING: option -b implies udp testing
-----
```

在pc端就会有相对应的数据产生，进行分析。

```
C:\WINDOWS\system32\cmd.exe
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.5.1 -p 1127 -b 150M -w 1M -u -i 1
WARNING: option -b implies udp testing
-----
Client connecting to 192.168.5.1, UDP port 1127
Sending 1470 byte datagrams
UDP buffer size: 1.00 MByte
-----
[ 3] local 192.168.5.2 port 54133 connected with 192.168.5.1 port 1127
ID Interval Transfer Bandwidth
[ 3] 0.0- 1.0 sec 5.59 MBytes 46.9 Mbits/sec
[ 3] 1.0- 2.0 sec 5.10 MBytes 42.8 Mbits/sec
[ 3] 2.0- 3.0 sec 5.51 MBytes 46.2 Mbits/sec
[ 3] 3.0- 4.0 sec 4.51 MBytes 37.9 Mbits/sec
[ 3] 4.0- 5.0 sec 4.05 MBytes 34.0 Mbits/sec
[ 3] 5.0- 6.0 sec 4.07 MBytes 34.1 Mbits/sec
[ 3] 6.0- 7.0 sec 4.57 MBytes 38.3 Mbits/sec
[ 3] 7.0- 8.0 sec 5.28 MBytes 44.3 Mbits/sec
[ 3] 8.0- 9.0 sec 5.19 MBytes 43.6 Mbits/sec
[ 3] 9.0-10.0 sec 5.73 MBytes 48.1 Mbits/sec
[ 3] 0.0-10.0 sec 49.6 MBytes 41.4 Mbits/sec
[ 3] Sent 35394 datagrams

D:\Tool\iperf_2_0_5_2>iperf.
```

注意查看串口端打印，查看丢包率：

```
^C# iperf -s -p 1127 -u -i 1
-----
Server listening on UDP port 1127
Receiving 1470 byte datagrams
UDP buffer size: 160 KByte (default)
-----
[ 3] local 192.168.5.1 port 1127 connected with 192.168.5.2 port 56459
ID Interval Transfer Bandwidth Jitter Lost/Total Datagrams
[ 3] 0.0- 1.0 sec 4.54 MBytes 38.1 Mbits/sec 1.693 ms 6/ 3243 (0.19%)
[ 3] 1.0- 2.0 sec 4.68 MBytes 39.2 Mbits/sec 0.892 ms 25/ 3360 (0.74%)
[ 3] 2.0- 3.0 sec 4.32 MBytes 36.3 Mbits/sec 0.747 ms 118/ 3201 (3.7%)
[ 3] 3.0- 4.0 sec 3.72 MBytes 31.2 Mbits/sec 0.731 ms 583/ 3238 (18%)
[ 3] 4.0- 5.0 sec 4.43 MBytes 37.1 Mbits/sec 0.428 ms 17/ 3176 (0.54%)
[ 3] 5.0- 6.0 sec 4.24 MBytes 35.6 Mbits/sec 0.604 ms 13/ 3037 (0.43%)
[ 3] 6.0- 7.0 sec 2.66 MBytes 22.3 Mbits/sec 1.146 ms 1479/ 3377 (44%)
[ 3] 7.0- 8.0 sec 2.64 MBytes 22.1 Mbits/sec 1.022 ms 1736/ 3616 (48%)
[ 3] 8.0- 9.0 sec 4.85 MBytes 40.7 Mbits/sec 0.403 ms 13/ 3473 (0.37%)
[ 3] 9.0-10.0 sec 4.60 MBytes 38.6 Mbits/sec 0.495 ms 23/ 3302 (0.7%)
[ 3] 0.0-10.2 sec 41.1 MBytes 34.0 Mbits/sec 0.896 ms 4433/33760 (13%)
[ 3] 0.00-10.16 sec 1 datagrams received out-of-order
```

常见问题

- 1 | -在rtos上client测试命令无效
- 2 | 可能前面执行了 udp或者tcp测试，需要执行iperf -q就可以了

- 1 | -在rtos上作为sever，pc端输入命令失效

```
D:\Tool\iperf_2_0_5_2>iperf.exe -c 192.168.59.116 -p 1127 -i 1
connect failed: Connection timed out
```

- 1 | 可能前面执行了板子client测试命令，需要执行iperf -q后在执行 iperf -s -q 1127即可。