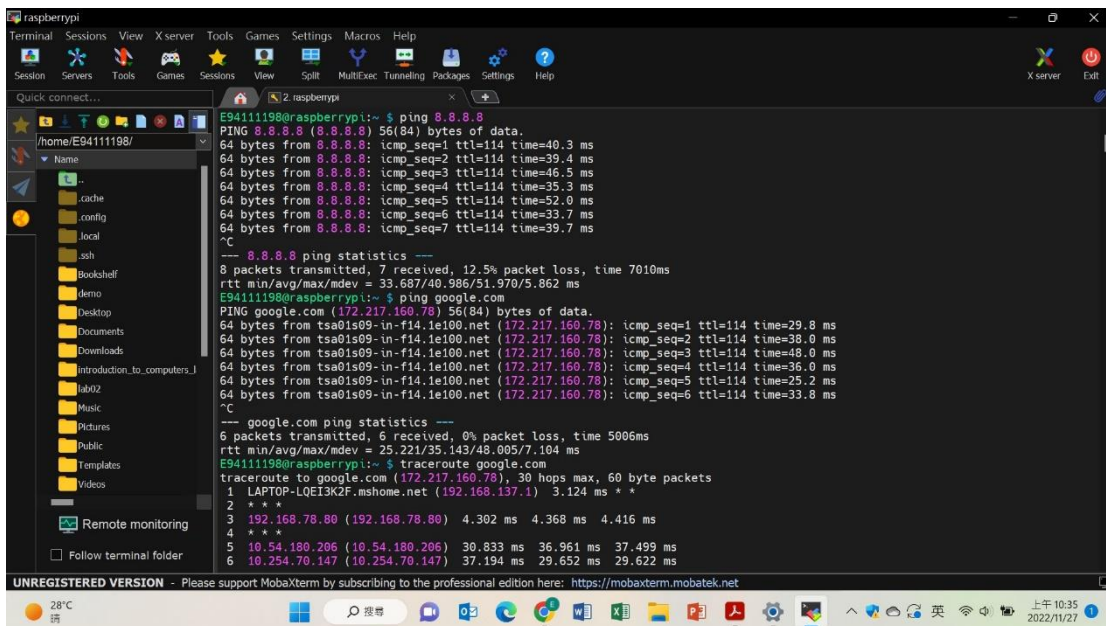


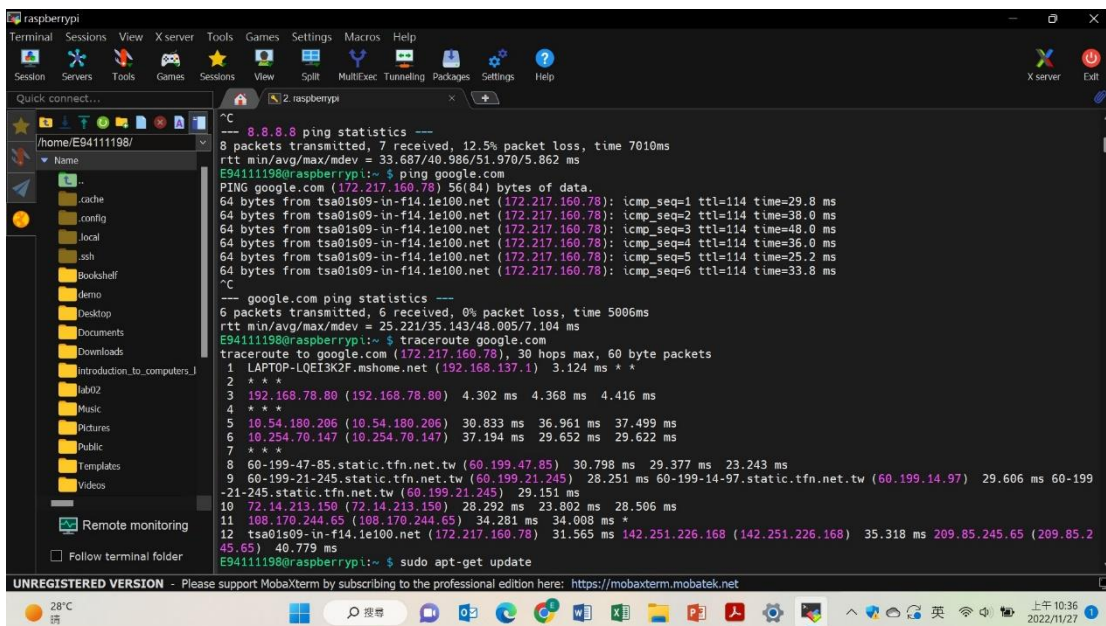
# 1. Linux Networking Commands

1. 測試是否可以上網(從樹莓派輸入指令)
2. 查看隨便一個網址(e.g. google.com, apple.com, etc.)的 ip
3. 查看到那個網頁的路徑



```
raspberrypi
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect...
/home/EB4111198/
Name
.cache
.config
.local
.ssh
Bookshelf
demo
Desktop
Documents
Downloads
Introduction_to_computers_I
lab02
Music
Pictures
Public
Templates
Videos
Remote monitoring
Follow terminal folder

E9411198@raspberrypi:~$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=114 time=40.3 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=114 time=39.4 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=114 time=46.5 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=114 time=35.3 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=114 time=52.0 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=114 time=33.7 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=114 time=39.7 ms
^C
--- 8.8.8.8 ping statistics ---
8 packets transmitted, 7 received, 12.5% packet loss, time 7010ms
rtt min/avg/max/mdev = 33.687/40.986/51.970/5.862 ms
E9411198@raspberrypi:~$ ping google.com
PING google.com (172.217.160.78) 56(84) bytes of data.
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=1 ttl=114 time=29.8 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=2 ttl=114 time=38.0 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=3 ttl=114 time=48.0 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=4 ttl=114 time=36.0 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=5 ttl=114 time=25.2 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=6 ttl=114 time=33.8 ms
^C
--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5006ms
rtt min/avg/max/mdev = 25.221/35.143/48.005/7.104 ms
E9411198@raspberrypi:~$ traceroute google.com
traceroute to google.com (172.217.160.78), 30 hops max, 60 byte packets
 1 LAPTOP-LQE13K2F.mshome.net (192.168.137.1) 3.124 ms * *
 2 * * *
 3 192.168.78.80 (192.168.78.80) 4.302 ms 4.368 ms 4.416 ms
 4 * * *
 5 10.54.180.206 (10.54.180.206) 30.833 ms 36.961 ms 37.499 ms
 6 10.254.70.147 (10.254.70.147) 37.194 ms 29.652 ms 29.622 ms
```

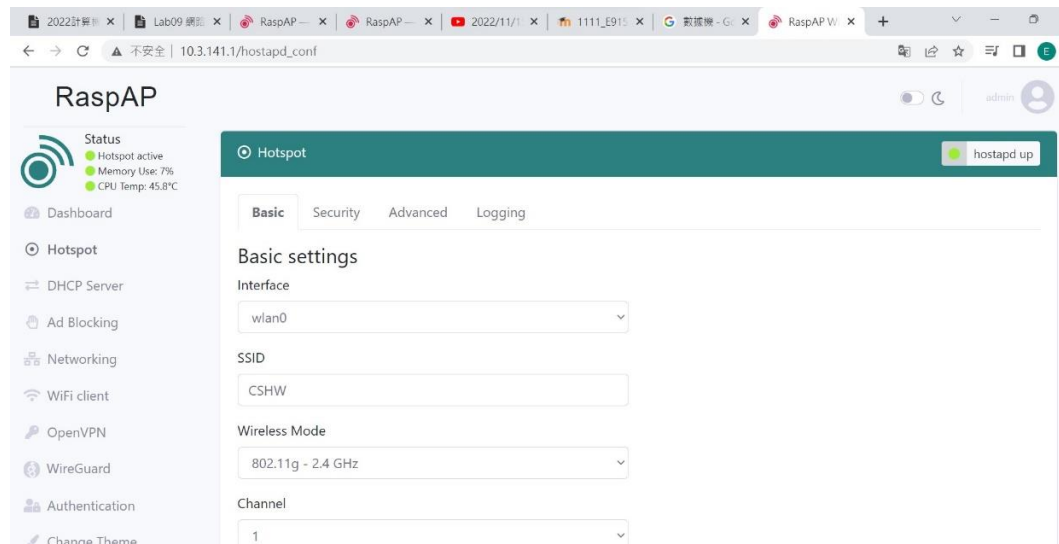


```
raspberrypi
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect...
/home/EB4111198/
Name
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.config
.local
.ssh
Bookshelf
demo
Desktop
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Introduction_to_computers_I
lab02
Music
Pictures
Public
Templates
Videos
Remote monitoring
Follow terminal folder

^C
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8 packets transmitted, 7 received, 12.5% packet loss, time 7010ms
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E9411198@raspberrypi:~$ ping google.com
PING google.com (172.217.160.78) 56(84) bytes of data.
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=1 ttl=114 time=29.8 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=2 ttl=114 time=38.0 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=3 ttl=114 time=48.0 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=4 ttl=114 time=36.0 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=5 ttl=114 time=25.2 ms
64 bytes from tsa01s09-in-f14.1e100.net (172.217.160.78): icmp_seq=6 ttl=114 time=33.8 ms
^C
--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5006ms
rtt min/avg/max/mdev = 25.221/35.143/48.005/7.104 ms
E9411198@raspberrypi:~$ traceroute google.com
traceroute to google.com (172.217.160.78), 30 hops max, 60 byte packets
 1 LAPTOP-LQE13K2F.mshome.net (192.168.137.1) 3.124 ms * *
 2 * * *
 3 192.168.78.80 (192.168.78.80) 4.302 ms 4.368 ms 4.416 ms
 4 * * *
 5 10.54.180.206 (10.54.180.206) 30.833 ms 36.961 ms 37.499 ms
 6 10.254.70.147 (10.254.70.147) 37.194 ms 29.652 ms 29.622 ms
 7 * * *
 8 60-199-47-85.static.tfn.net.tw (60.199.47.85) 30.798 ms 29.377 ms 23.243 ms
 9 60-199-21-245.static.tfn.net.tw (60.199.21.245) 28.251 ms 60-199-14-97.static.tfn.net.tw (60.199.14.97) 29.606 ms 60-199-21-245.static.tfn.net.tw (60.199.21.245) 29.151 ms
10 72.14.213.150 (72.14.213.150) 28.292 ms 23.802 ms 28.506 ms
11 108.170.244.65 (108.170.244.65) 34.281 ms 34.008 ms *
12 tsa01s09-in-f14.1e100.net (172.217.160.78) 31.565 ms 142.251.226.168 (142.251.226.168) 35.318 ms 209.85.245.65 (209.85.245.65) 40.779 ms
E9411198@raspberrypi:~$ sudo apt-get update
```

## 2. RaspAP

### 1.更改 Hotspot 名稱&密碼



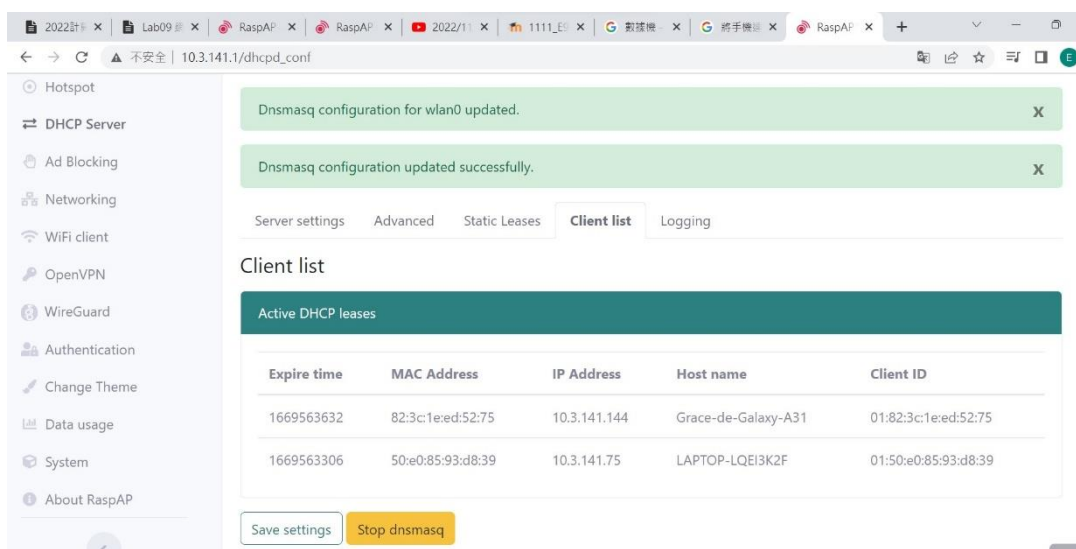
### 2.測試是否可以上網

```
命令提示字元
Microsoft Windows [版本 10.0.22000.1219]
(c) Microsoft Corporation. 著作權所有，並保留一切權利。
C:\Users\user>ping 8.8.8.8

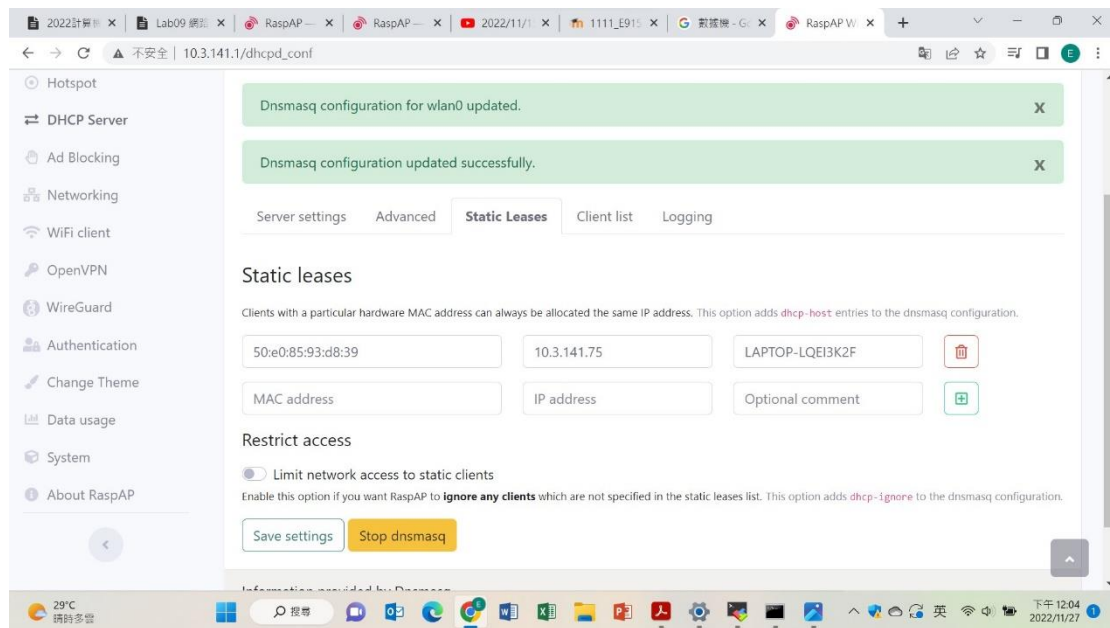
Ping 8.8.8.8 (使用 32 位元組的資料):
回覆自 8.8.8.8: 位元組=32 時間=9ms TTL=112
回覆自 8.8.8.8: 位元組=32 時間=9ms TTL=112
回覆自 8.8.8.8: 位元組=32 時間=10ms TTL=112
回覆自 8.8.8.8: 位元組=32 時間=9ms TTL=112

8.8.8.8 的 Ping 統計資料:
封包: 已傳送 = 4, 已收到 = 4, 已遺失 = 0 (0% 遺失),
大約的來回時間 (毫秒):
    最小值 = 9ms, 最大值 = 10ms, 平均 = 9ms
C:\Users\user>
```

### 3.將手機連上 AP，測試是否可以連到手機



#### 4. 給電腦設定一個固定 IP



#### 5. 查看從此電腦(10.3.141.xx)到 google.com 的路徑為何

