

NSCAP Homework #1

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實驗內容

利用 C++ 的 libpcap 函式庫，撰寫可以指定介面卡、過濾類型、攔截數量的指令介面程式，支援 TCP、UDP 及 ICMP 協議基本解析。

實驗截圖



```
→ hw1 git:(master) x ./main --interface ens160 -c 4 --filter icmp
Transport type: ICMP
Source IP: 140.113.168.160
Destination IP: 140.113.168.192
ICMP type value: 8

Transport type: ICMP
Source IP: 140.113.168.192
Destination IP: 140.113.168.160
ICMP type value: 0

Transport type: ICMP
Source IP: 140.113.168.160
Destination IP: 140.113.168.192
ICMP type value: 8

Transport type: ICMP
Source IP: 140.113.168.192
Destination IP: 140.113.168.160
ICMP type value: 0

→ hw1 git:(master) x

Experiment 1: ICMP

→ hw1 git:(master) x ping 140.113.168.192 -c 3
PING 140.113.168.192 (140.113.168.192) 56(84) bytes of data.
64 bytes from 140.113.168.192: icmp_seq=1 ttl=64 time=0.678 ms
64 bytes from 140.113.168.192: icmp_seq=2 ttl=64 time=0.636 ms
64 bytes from 140.113.168.192: icmp_seq=3 ttl=64 time=0.676 ms

--- 140.113.168.192 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2051ms
rtt min/avg/max/mdev = 0.636/0.663/0.678/0.019 ms
→ hw1 git:(master) x
```

圖 1：可正常顯示來源及目的地，並印出 ICMP 類型編號

