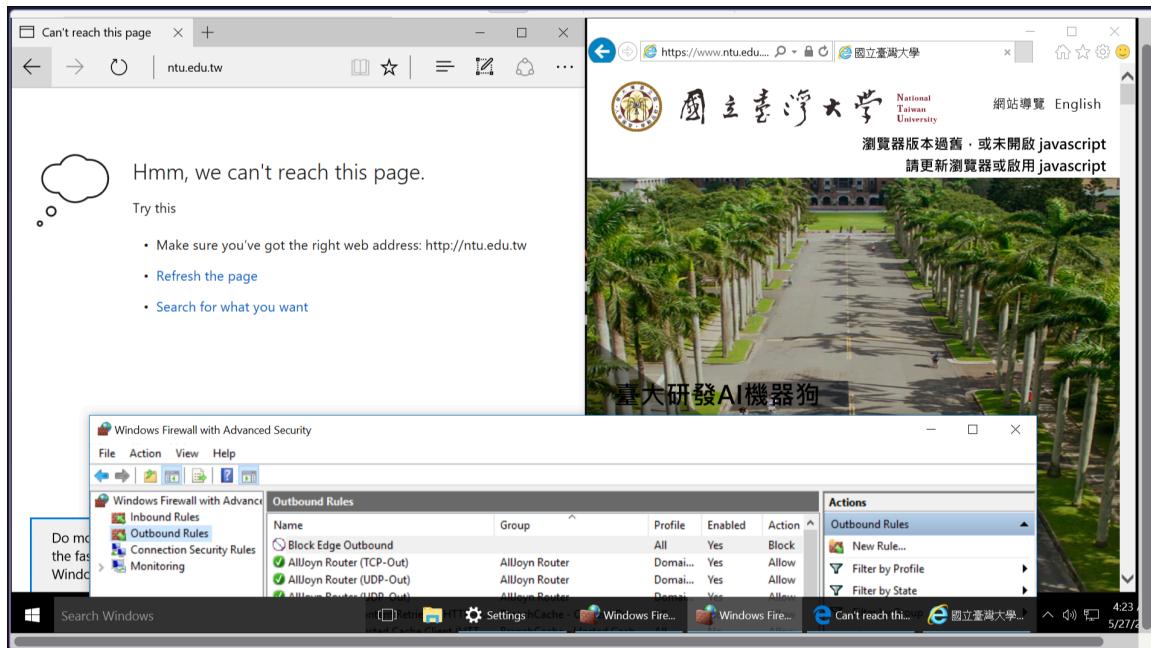


Lab Report

1. Name: 林靖昀 Student ID: B12902116

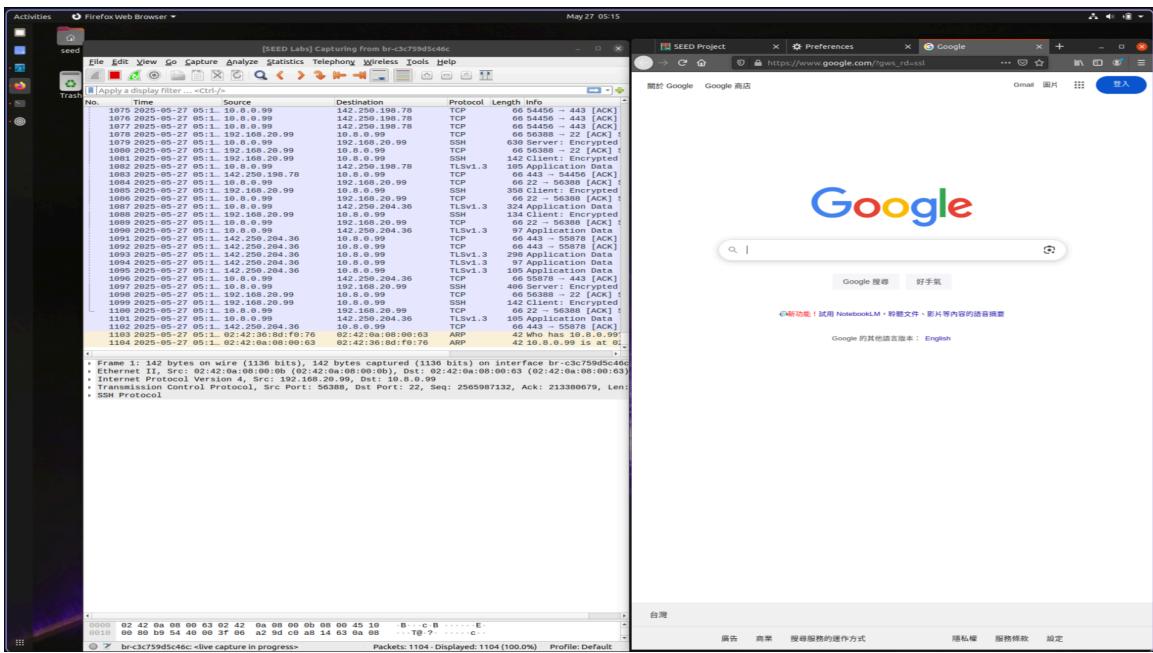
2. Screen snapshot 1 - Windows/MacOS Firewall (投影片p54 截圖)
3. Screen snapshot 2 - Windows/MacOS Firewall (投影片p57截圖)



4. Screen snapshot 3 - Firewall with iptables (投影片p65截圖)

```
root@25f0cc771e46:/# iptables -L
Chain INPUT (policy DROP)
target     prot opt source               destination
Chain FORWARD (policy ACCEPT)
target     prot opt source               destination
Chain OUTPUT (policy ACCEPT)
target     prot opt source               destination
root@25f0cc771e46:/# ping 192.168.20.99
PING 192.168.20.99 (192.168.20.99) 56(84) bytes of data.
^C
--- 192.168.20.99 ping statistics ---
9 packets transmitted, 0 received, 100% packet loss, time 8174ms
root@25f0cc771e46:/# iptables -A INPUT -m conntrack --ctstate ESTABLISHED,RELATED -j ACCEPT
root@25f0cc771e46:/# ping 192.168.20.99
PING 192.168.20.99 (192.168.20.99) 56(84) bytes of data.
64 bytes from 192.168.20.99: icmp_seq=1 ttl=64 time=0.069 ms
64 bytes from 192.168.20.99: icmp_seq=2 ttl=64 time=0.094 ms
64 bytes from 192.168.20.99: icmp_seq=3 ttl=64 time=0.105 ms
64 bytes from 192.168.20.99: icmp_seq=4 ttl=64 time=0.087 ms
^C
--- 192.168.20.99 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3053ms
rtt min/avg/max/mdev = 0.069/0.088/0.105/0.013 ms
root@25f0cc771e46:/# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
14: eth0@if15: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue
        "VM" 04:45 27-May-25
```

5. Screen snapshot 4 - Dynamic Port Forwarding (投影片 p75 截圖)



6. Screen snapshot 5 - Virtual Private Network (VPN) (投影片p79截圖)

```
root@0672ee5610d30:/# ssh -w 0:0 root@192.168.20.99 -o "PermitLocalCommand=yes" -o "LocalCommand=ip addr add 192.168.53.88/24 dev tun0 && ip link set tun0 up" -o "RemoteCommand=ip addr add 192.168.53.99/24 dev tun0 && ip link set tun0 up"
root@192.168.20.99's password:
root@0672ee5610d30:/# ip r
default via 10.8.0.1 dev eth0
10.8.0.0/24 dev eth0 proto kernel scope link src 10.8.0.99
192.168.20.0/24 dev tun0 scope link
192.168.20.99 via 10.8.0.11 dev eth0
192.168.53.0/24 dev tun0 proto kernel scope link src 192.168.53.88
root@0672ee5610d30:/# telnet 192.168.20.5
Trying 192.168.20.5...
Connected to 192.168.20.5.
Escape character is '^]'.
Ubuntu 20.04.1 LTS
25f0cc771e46 login: █

root@a6e69b20c07a:/# ip r
default via 192.168.20.11 dev eth0
192.168.20.0/24 dev eth0 proto kernel scope link src 192.168.20.99
192.168.53.0/24 dev tun0 proto kernel scope link src 192.168.53.99
root@a6e69b20c07a:/#
```

(VPN client: 10.8.0.99, VPN server 192.168.20.99)

```
root@672ee5610d30:/# ping cool.ntu.edu.tw
PING cool.ntu.edu.tw (140.112.145.153) 56(84) bytes of data.
64 bytes from 140.112.145.153 (140.112.145.153): icmp_seq=1 ttl=50 time=18.3 ms
64 bytes from 140.112.145.153 (140.112.145.153): icmp_seq=2 ttl=50 time=15.8 ms
64 bytes from 140.112.145.153 (140.112.145.153): icmp_seq=3 ttl=50 time=17.7 ms
64 bytes from 140.112.145.153 (140.112.145.153): icmp_seq=4 ttl=50 time=15.9 ms
64 bytes from 140.112.145.153 (140.112.145.153): icmp_seq=5 ttl=50 time=17.5 ms
^C
--- cool.ntu.edu.tw ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4008ms
rtt min/avg/max/mdev = 15.774/17.634/18.297/1.022 ms
root@672ee5610d30:/#
```



```
root@a6e69b20c07a:/# ssh -w 0:0 root@10.8.0.99 -o "PermitLocalCommand=yes" -o "LocalCommand=ip addr add 192.168.53.88/24 dev tun0 && ip link set tun0 up" -o "RemoteCommand=ip addr add 192.168.53.99/24 dev tun0 && ip link set tun0 up"
root@10.8.0.99's password:
```

```
root@a6e69b20c07a:/# ping cool.ntu.edu.tw
PING cool.ntu.edu.tw (140.112.145.153) 56(84) bytes of data.
^C
--- cool.ntu.edu.tw ping statistics ---
17 packets transmitted, 0 received, 100% packet loss, time 16384ms
root@a6e69b20c07a:/# █
```

(VPN client: 192.168.20.99, VPN server 10.8.0.99)