Data Communications and Networking
Lab 1 - Connectivity, VPCs, Subnets, VLANs

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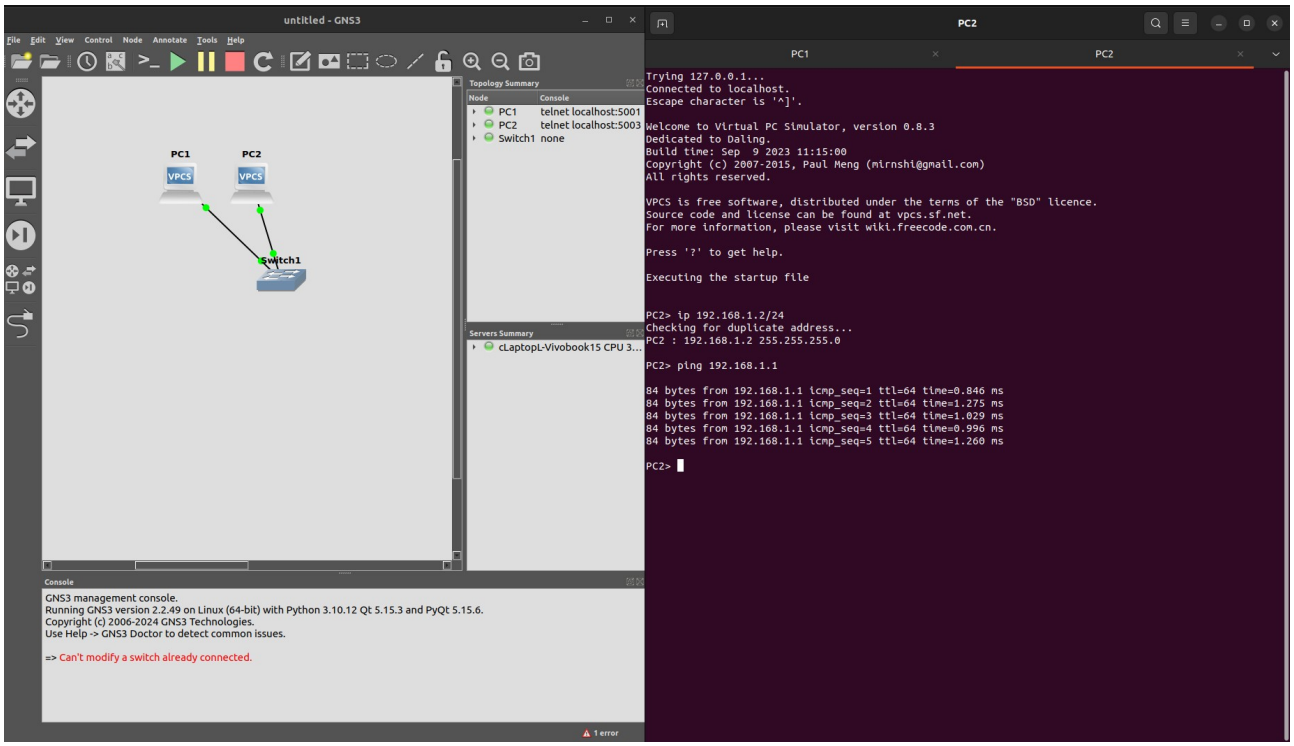
Part 1:

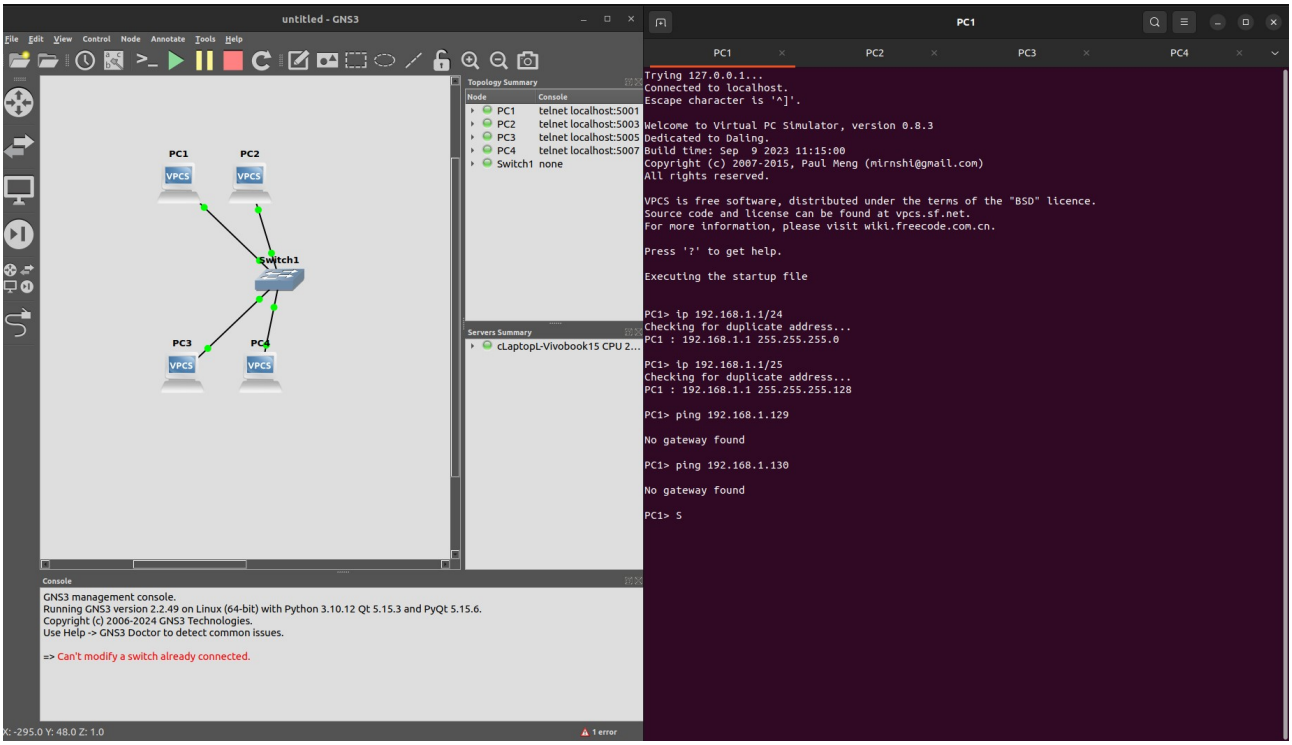


Part 2:

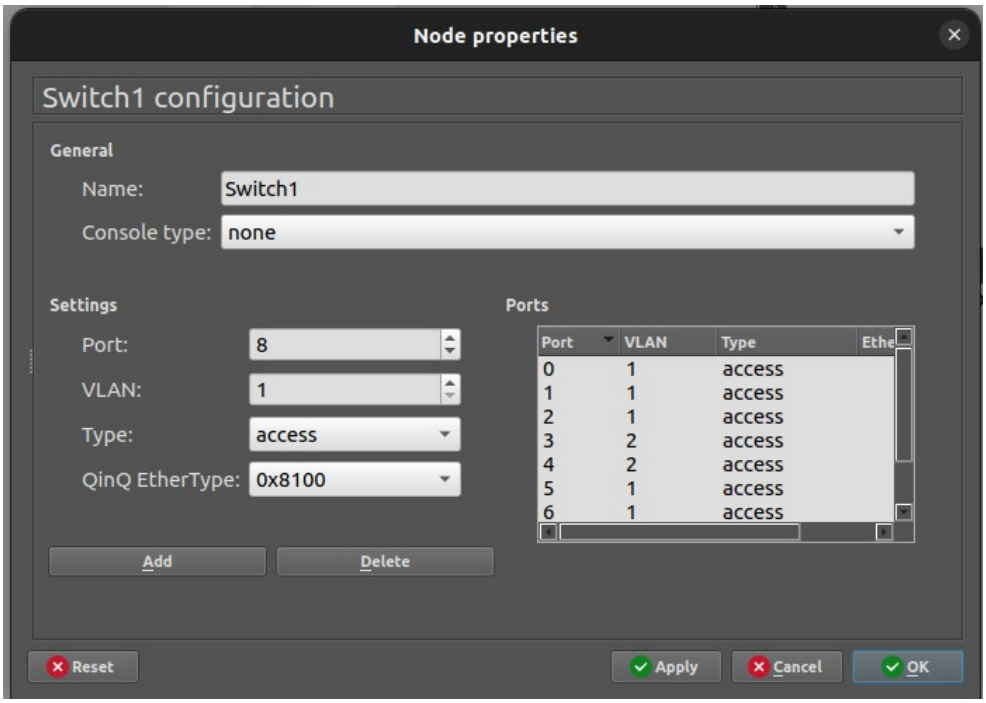
```
PC3> ip 192.168.1.129/25
Checking for duplicate address...
PC3 : 192.168.1.129 255.255.255.128

PC3> ping 192.168.1.130

84 bytes from 192.168.1.130 icmp_seq=1 ttl=64 time=0.832 ms
84 bytes from 192.168.1.130 icmp_seq=2 ttl=64 time=0.866 ms
84 bytes from 192.168.1.130 icmp_seq=3 ttl=64 time=1.077 ms
84 bytes from 192.168.1.130 icmp_seq=4 ttl=64 time=0.892 ms
84 bytes from 192.168.1.130 icmp_seq=5 ttl=64 time=1.169 ms
```

```
PC4> ip 192.168.1.130/25
Checking for duplicate address...
PC4 : 192.168.1.130 255.255.255.128

PC4> ping 192.168.1.129

84 bytes from 192.168.1.129 icmp_seq=1 ttl=64 time=1.024 ms
84 bytes from 192.168.1.129 icmp_seq=2 ttl=64 time=1.172 ms
84 bytes from 192.168.1.129 icmp_seq=3 ttl=64 time=0.734 ms
84 bytes from 192.168.1.129 icmp_seq=4 ttl=64 time=0.842 ms
84 bytes from 192.168.1.129 icmp_seq=5 ttl=64 time=0.994 ms
```

You can’t ping pc3/4 from pc1 because they are on different subnets.



Part 3:




```
PC2> ping 192.168.1.1

84 bytes from 192.168.1.1 icmp_seq=1 ttl=64 time=0.915 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=64 time=1.221 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=64 time=1.093 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=64 time=1.385 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=64 time=1.287 ms
```

Could ping because same VLAN

```
PC1> ping 192.168.1.3

host (192.168.1.3) not reachable
```

Couldn’t ping because different VLAN

```
PC2> ping 192.168.1.4

host (192.168.1.4) not reachable
```

Couldn’t ping because different VLAN

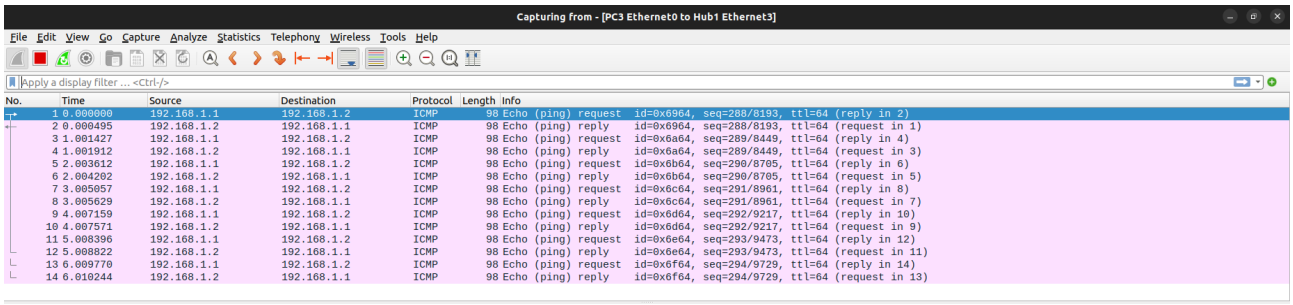
```
PC3> ping 192.168.1.4

84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=0.651 ms
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=0.786 ms
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=0.977 ms
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=1.028 ms
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=0.983 ms
```

Could ping because same VLAN

Part 4:

ICMP - internet message control protocol

Can’t see ping from pc3 capture, because swicthes send privately to mac address



You can see all pings from hubs as they broadcast to each port