# Lab – 1: GNS3 and Cisco Packet Tracer Documentation

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## GNS3

Configuring Virtual Environment:

```
# Terminal Commands to make a virtual environment:
python3 -m venv gns3env

# Activate the virtual environment:
source gns3env/bin/activate

# Install required libraries:
pip install pyqt5
pip install gns3-server
pip install gns3-gui

# Execute this under virtual environment:
gns3
```

Configuring a virtual PC:

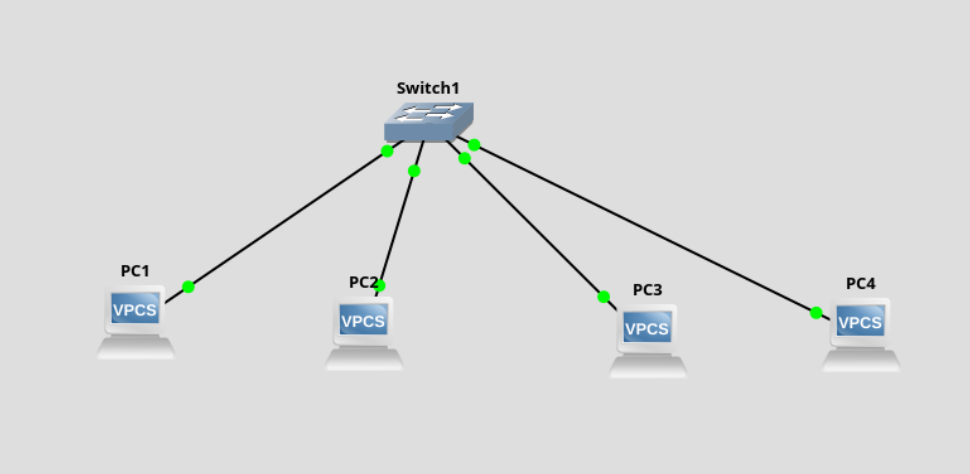
```
# In console, assign an IP to computer by running the following commands:
ip 192.168.1.1 255.255.255.0

# For Virtual PC 2 onwards:
ip 192.168.1.2/24 # Change last decimal for consecutive PCs.

# Ping a PC:
ping 192.168.1.2 # Assuming you are PC1 right now.

# To define number of packets to ping a PC:
ping 192.168.1.2 -c 5 # Sends 5 packets to PC2.

# Saving terminal commands:
save # Execute this while being inside terminal of any PC.

# View information about assigned commands to a PC:
show ip
```

Configuring Virtual PC:

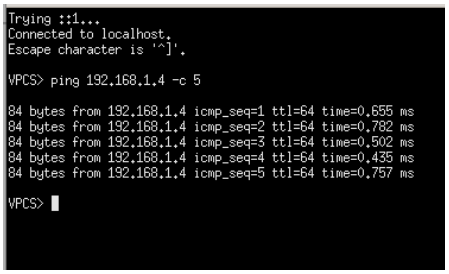
```
# Terminal Commands to configure a Virtual PC:
ip 192.168.1.1 255.255.255.0 # <IP address> <mask address>

# To show configurations:
show ip
```

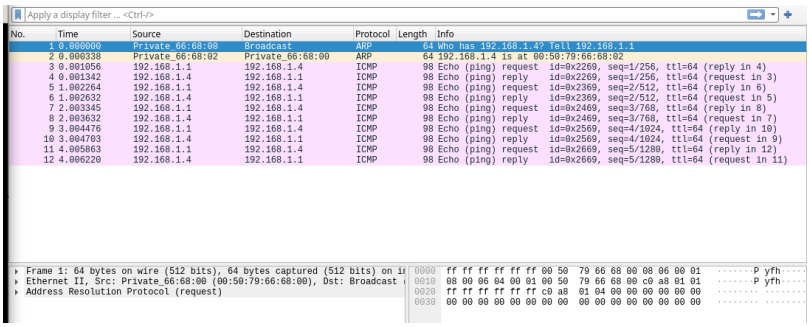
```
Escape character is '^]'.

VPCS> ip 192.168.1.1/24 192.168.1.254
Checking for duplicate address...
PC1 : 192.168.1.1 255.255.255.0 gateway 192.168.1.254

VPCS> show ip

NAME        : VPCS[1]
IP/MASK     : 192.168.1.1/24
GATEWAY     : 192.168.1.254
DNS         :
MAC         : 00:50:79:66:68:00
LPORT       : 10000
RHOST:PORT  : 127.0.0.1:10001
MTU         : 1500
```

Virtual PC arrangement:



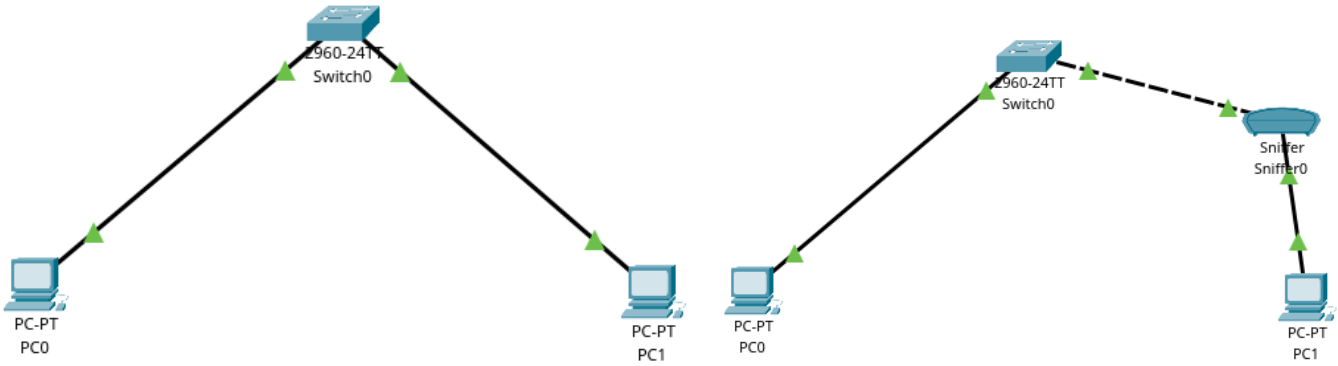

Pinging a PC:



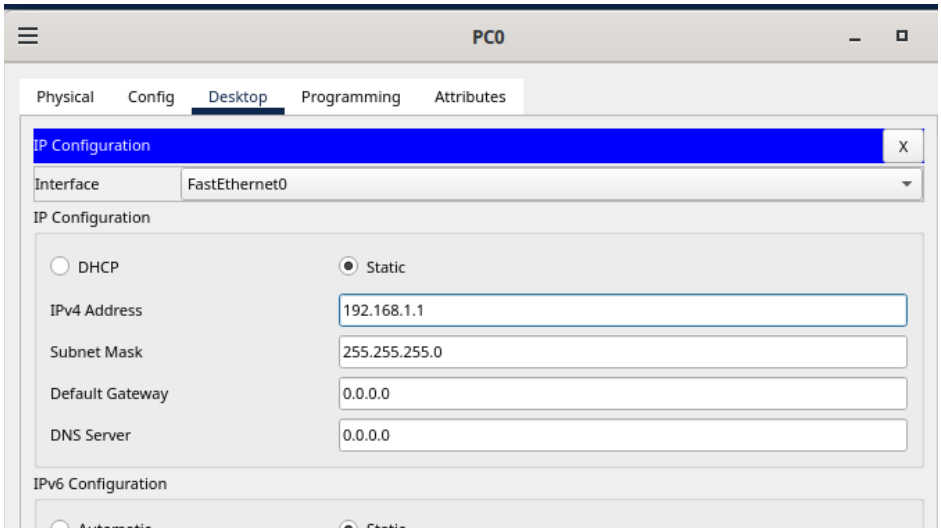




# Cisco Packet Tracer

Configuration of PCs (without and with sniffer):




Configuring PC:




Pinging a PC:

```
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=11ms TTL=128
Reply from 192.168.1.2: bytes=32 time=9ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 5ms

C:\>
```