Computer Networks-Lab Final

NAME: Sameer Ahmed

ROLL NO: 200973

Bs-Cys 3-A

Date: 29/12/2021

Question 01: For the following IP Addresses, Identify the following:

1) Class (A, B, C, D, E)

2) Network-Host Division (Example: N.N.N.H)

3) Subnet Mask (Example: 255.0.0.0)

Ans: -

1. 139.34.23.1

- **Class: B**
- **Network-Host Division: N.N.H.H**
- **Subnet Mask: 255.255.0.0**

2. 219.80.60.110

- **Class: C**
- **Network-Host Division: N.N.N.H**
- **Subnet Mask: 255.255.255.0**

3. 24.254.254.254

- **Class: A**
- **Network-Host Division: N.H.H.H**
- **Subnet Mask: 255.0.0.0**

4. 10.80.10.1

- **Class: A**
- **Network-Host Division: N.H.H.H**
- **Subnet Mask: 255.0.0.0**

5. 100.1.1.1
- **Class: A**
- **Network-Host Division: N.H.H.H**
- **Subnet Mask: 255.0.0.0**

6. 122.11.12.22
- **Class: A**
- **Network-Host Division: N.H.H.H**
- **Subnet Mask: 255.0.0.0**

7. 166.77.88.80
- **Class: B**
- **Network-Host Division: N.N.H.H**
- **Subnet Mask: 255.255.0.0**

8. 34.200.234.12
- **Class: A**
- **Network-Host Division: N.H.H.H**
- **Subnet Mask: 255.0.0.0**

9. 193.254.254.254

- **Class: C**
- **Network-Host Division: N.N.N.H**
- **Subnet Mask: 255.255.255.0**

10. 200.200.200.200

- **Class: C**
- **Network-Host Division: N.N.N.H**
- **Subnet Mask: 255.255.255.0**

Question 02: Complete the following network in Packet Tracer:

Please take screenshots when all configurations are done and PING is successful.

Network-1:

1. Add a PC

a. Assign IP address (last 2 digits of student ID for each octet)

b. Example: ID = 201764, IP = 64.64.64.64

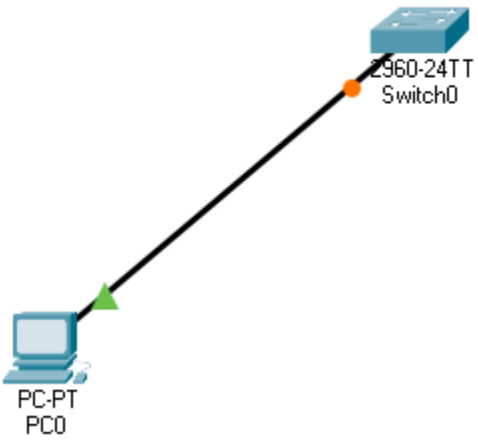
c. If last 2 digits of your ID are 00, then assign 100.100.100.100

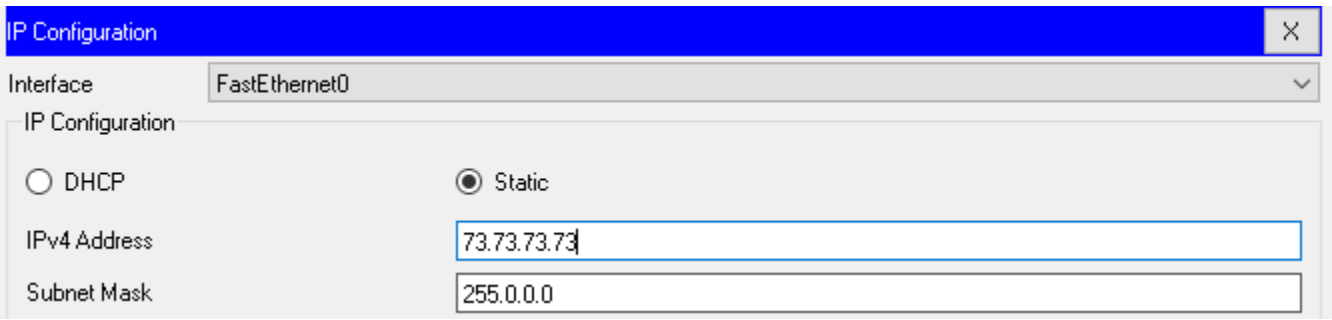
2. Add a Switch (2960)

3. Connect the PC to the Switch

4. Capture screenshot of the "IP configuration" of PC

ID= 200973, IP= 73.73.73.73





Network-2:

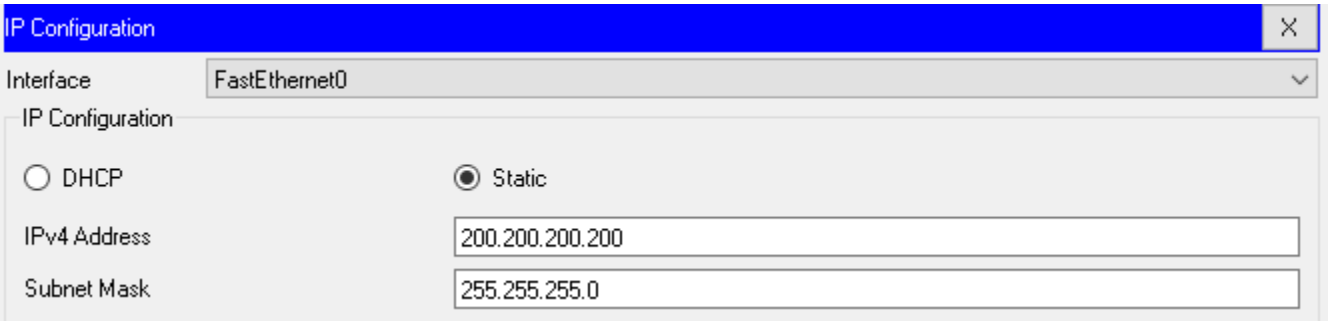
1. Add a PC

a. Assign IP address of 200.200.200.200

2. Add a Switch (2960)

3. Connect the PC to the Switch

4. Capture screenshot of the “IP configuration” of PC

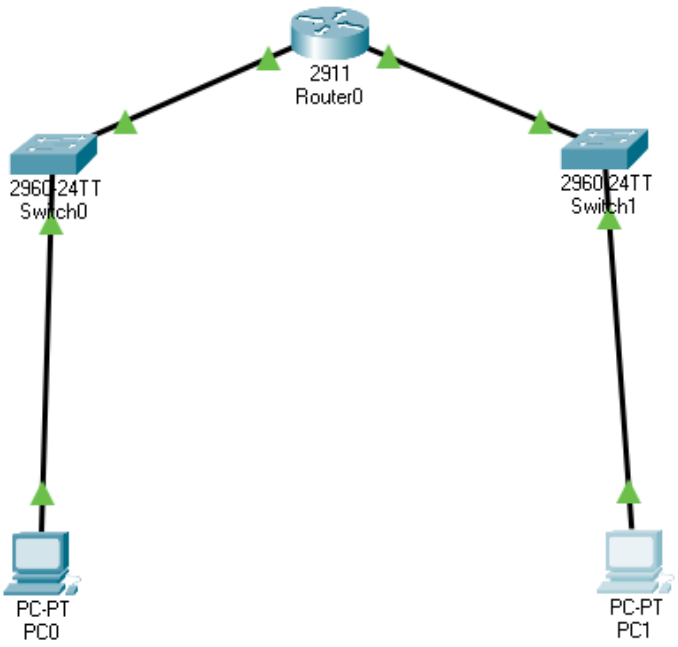


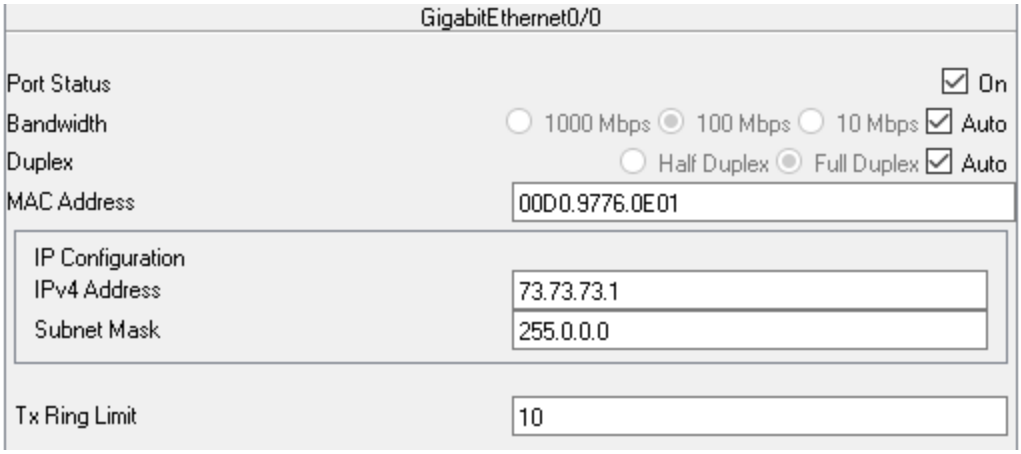
Add a Router (2911):

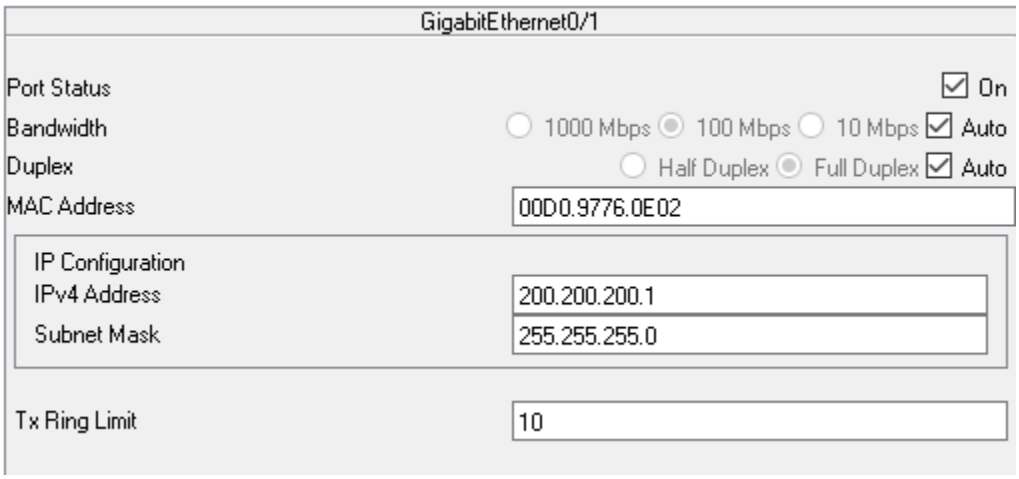
1. Connect both of the Switches to Router keeping in mind the respective Port (Fast Ethernet or Gigabit Ethernet)

2. Assign IPs to both of the Router Interfaces i.e. one for Network-1 and other for Network-2

3. Capture screenshots of both of the Router Interfaces







PING:

1. Send PING request from Network-2 i.e. PC = 200.200.200.200 to the Network-1 i.e. PC = IP with your Student ID last 2 digits

2. Capture the screenshot of "PING Request"

```
C:\>ping 73.73.73.73

Pinging 73.73.73.73 with 32 bytes of data:

Reply from 73.73.73.73: bytes=32 time<1ms TTL=127
Reply from 73.73.73.73: bytes=32 time=1ms TTL=127
Reply from 73.73.73.73: bytes=32 time<1ms TTL=127
Reply from 73.73.73.73: bytes=32 time=1ms TTL=127

Ping statistics for 73.73.73.73:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Question 03: Implement Static Routing in the Network

Network-1:

1. Add first PC

a. Assign IP address (last 2 digits of student ID for each octet)

b. Example: ID = 201764, IP = 64.64.64.64

c. If last 2 digits of your ID are 00, then assign 100.100.100.100

2. Add second PC

a. Assign the NEXT IP address

b. Example: ID = 201764, IP-1 = 64.64.64.64, IP-2 = 64.64.64.65

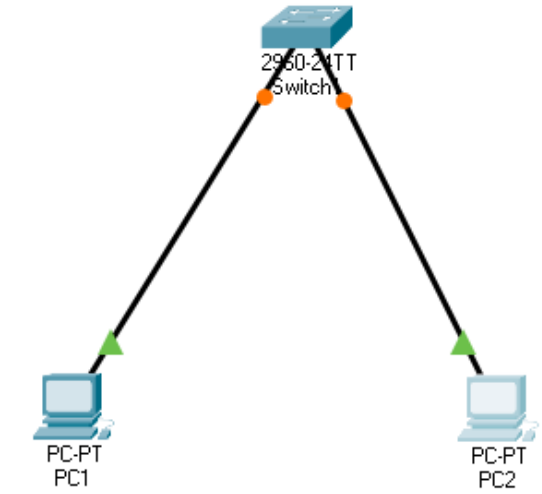
c. In case of 100.100.100.100, assign 101.101.101.101

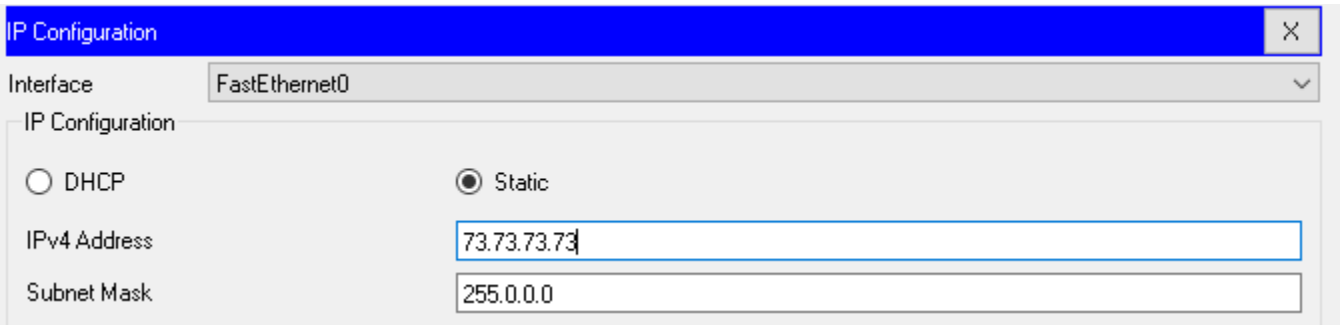
3. Add a Switch (2960)

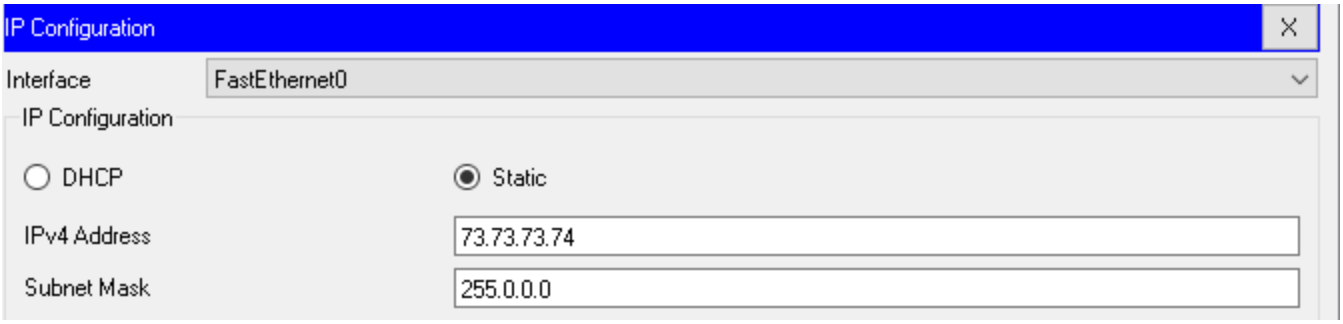
4. Connect both of the PCs to the Switch

5. Capture screenshot of the "IP configuration" of both of the PCs

IP-1: 73.73.73.73, IP-2: 73.73.73.74







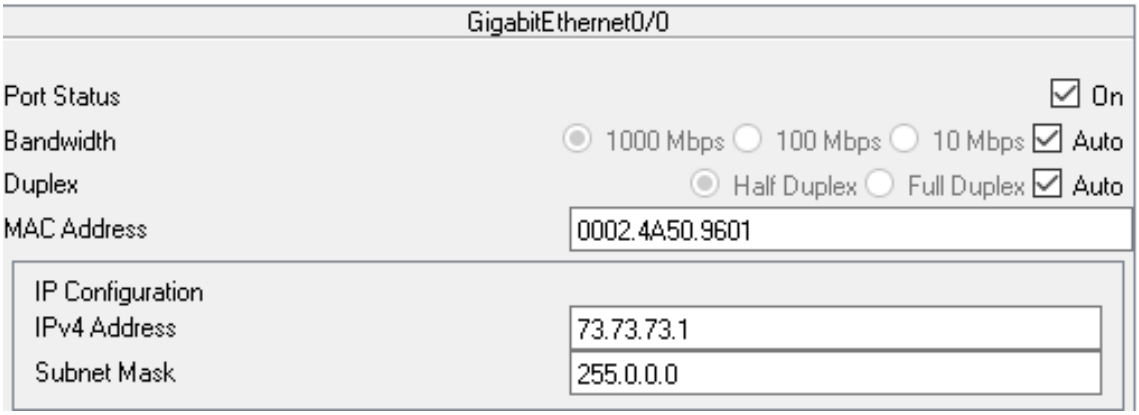
Add a Router (2911): (Router-1)

a. Connect the switch to Router keeping in mind the respective Port (Fast Ethernet or Gigabit Ethernet)

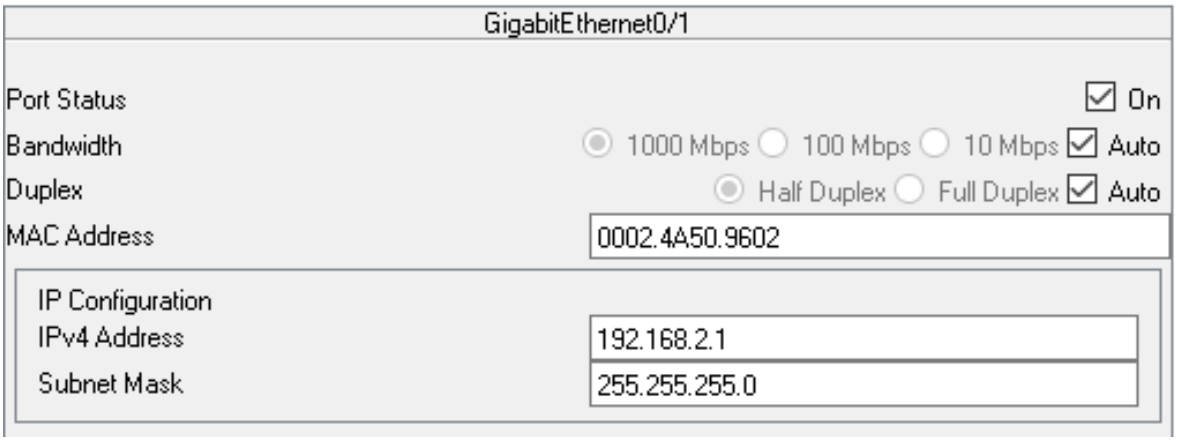
b. Assign IPs to both of the Router Interfaces i.e. one for Network-1 and other for Router-2

c. Capture screenshots of both of the Router Interfaces

Network-1: -



Router-2: -



Network-2:

1. Add first PC

a. Assign IP address 192.192.192.192

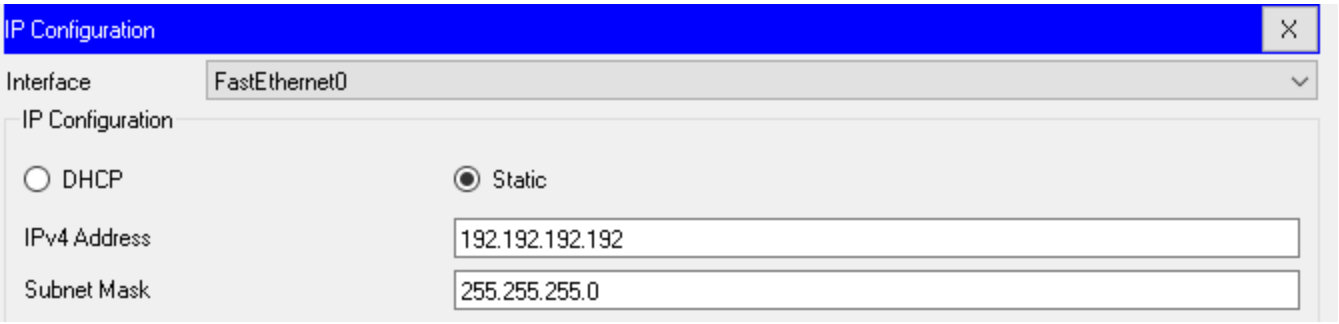
2. Add second PC

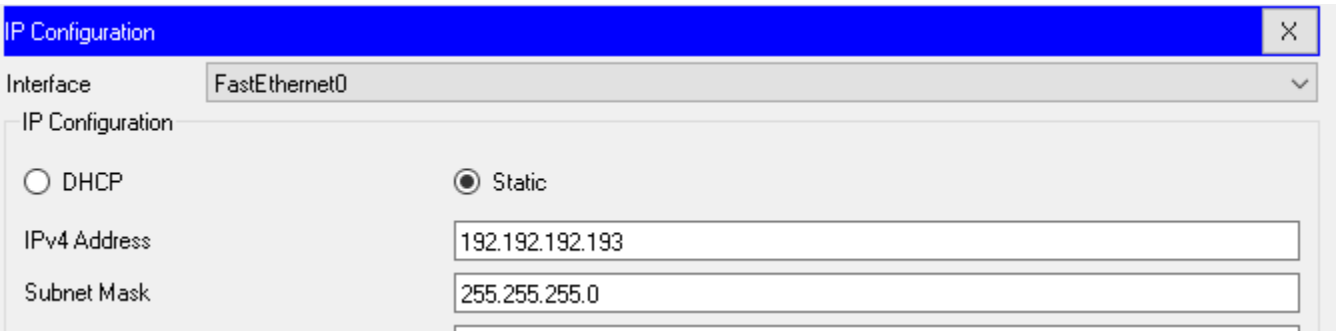
a. Assign IP address 192.192.192.193

3. Add a Switch (2960)

4. Connect both of the PCs to the Switch

5. Capture screenshot of the “IP configuration” of both of the PCs





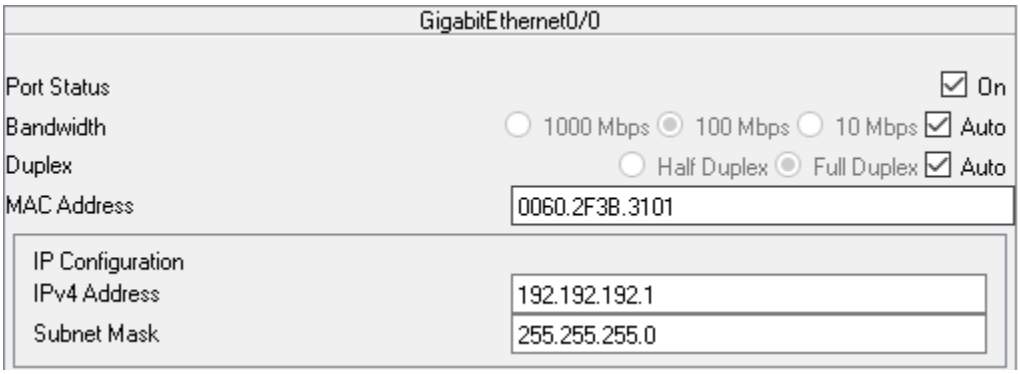
Add a Router (2911): (Router-2)

a. Connect the switch to Router keeping in mind the respective Port (Fast Ethernet or Gigabit Ethernet)

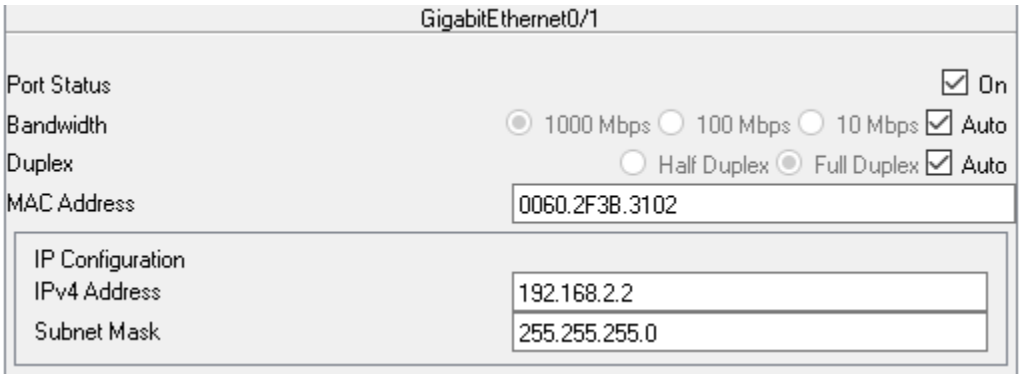
b. Assign IPs to both of the Router Interfaces i.e. one for Network-2 and other for Router-1

c. Capture screenshots of both of the Router Interfaces

Network-2: -



Router-1: -

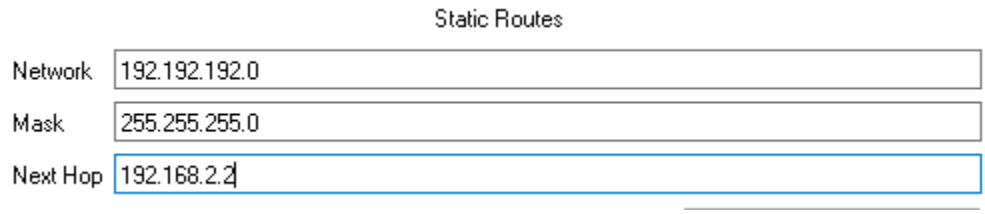


Static Routing:

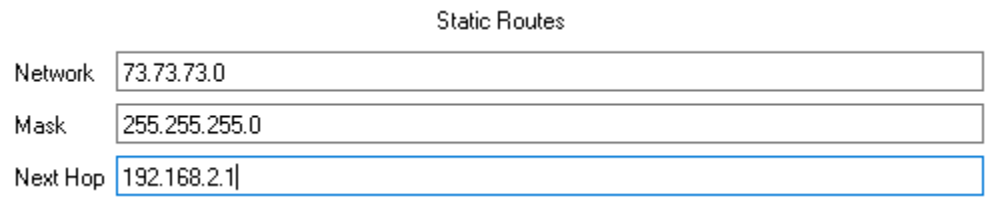
1. Implement Static Routing and configure both Routers

2. Establish communication between both networks i.e. Network-1 and Network-2

Router-1: -



Router-2: -



PING:

1. Generate a ping request from Network 2 to Network 1

2. Example: Ping from 192.192.192.192 to 64.64.64.64 (Or Your IP)

3. Take Screenshot of the PING request

```
C:\>ping 73.73.73.73

Pinging 73.73.73.73 with 32 bytes of data:

Reply from 73.73.73.73: bytes=32 time<1ms TTL=126
Reply from 73.73.73.73: bytes=32 time<1ms TTL=126
Reply from 73.73.73.73: bytes=32 time<1ms TTL=126
Reply from 73.73.73.73: bytes=32 time<1ms TTL=126

Ping statistics for 73.73.73.73:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```