

## TASK 2

Submitted by: Youail John (EL-19038)

Given Network Address is 192.168.10.0 which is Class C IPv4 and subnet mask is 255.255.255.128 (binary=11111111.11111111.11111111.10000000) Now with this we will find following information.

Task 2 Youail John EL-19038.

Total subnets =  $2^1 = 2$

Total Hosts per subnet =  $2^7 = 128$

Total Valid Hosts per subnet =  $2^7 - 2 = 126$

Block size =  $256 - 128 = 128$

First Subnet Mask = 192.168.10.00000000 - 192.168.10.7

IP address = 192.168.10.0 - 192.168.10.127

1<sup>st</sup> valid Host = 192.168.10.00000001  
OR 192.168.10.1

Last valid Host = 192.168.10.01111110  
OR 192.168.10.126

Broadcast IP = 192.168.10.01111111  
OR 192.168.10.127

Second Subnet Mask = 192.168.10.00000000 - 192.168.10.11111111

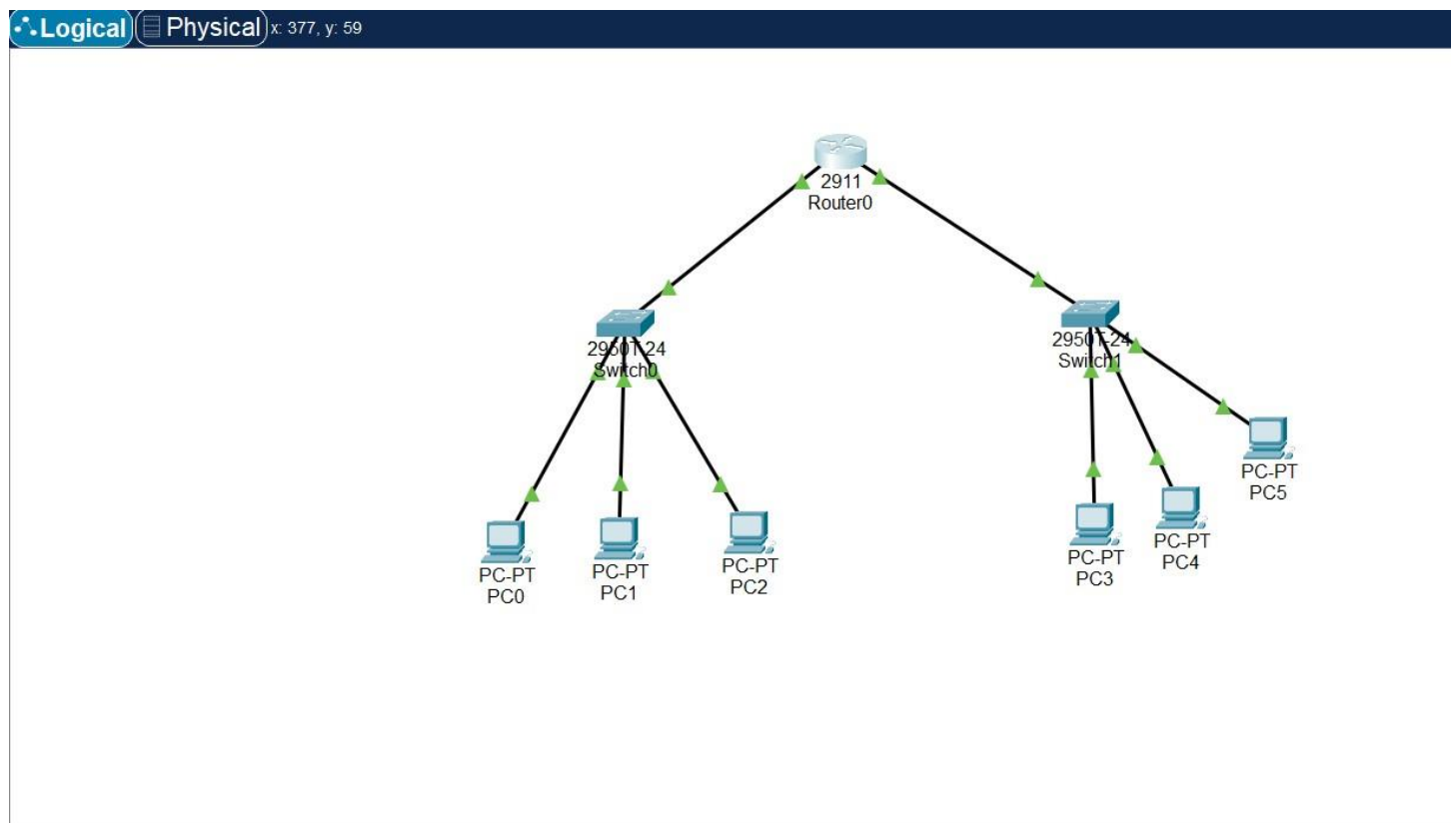
IP address = 192.168.10.128 - 192.168.10.255

1<sup>st</sup> valid Host = 192.168.10.10000001  
OR 192.168.10.129

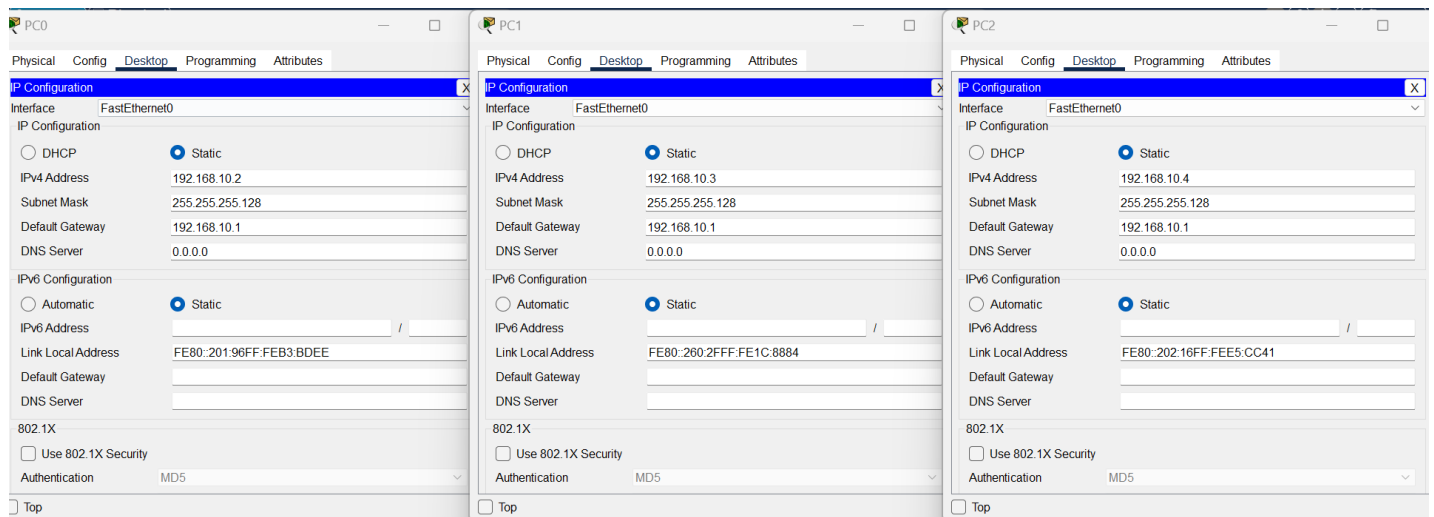
Last valid Host = 192.168.10.11111110  
OR 192.168.10.254

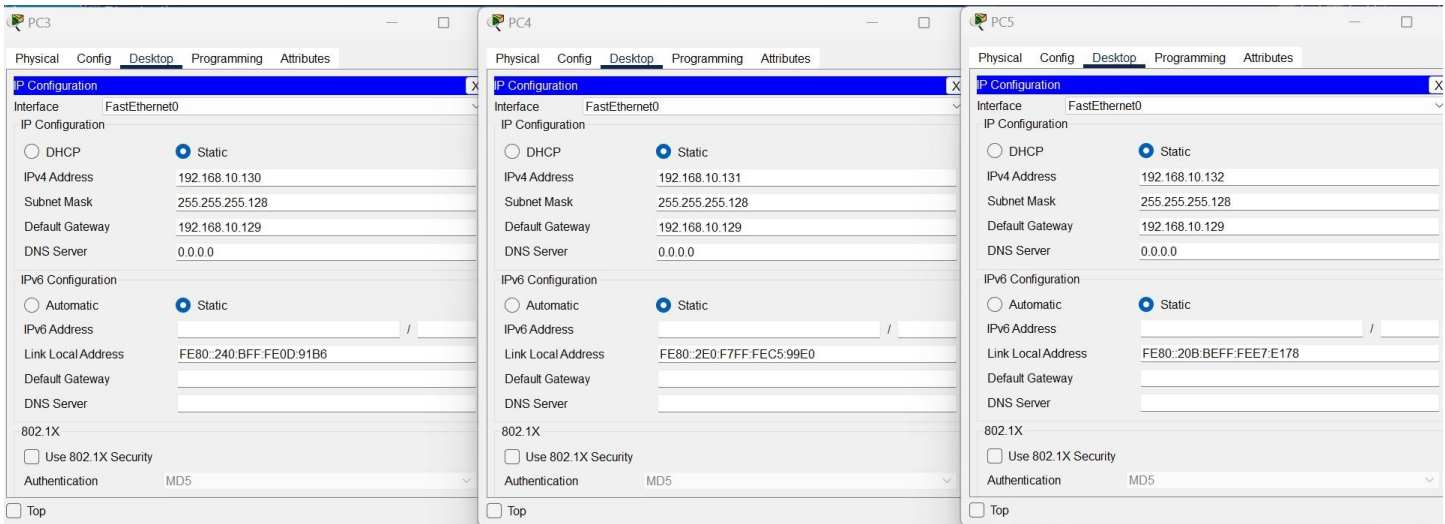
Broadcast ID = 192.168.10.11111111  
OR 192.168.10.255

**Designing the Topology:** As there are 2 possible Subnets we attached 2 switches to the router to differentiate the broadcast domains and assigned 3 PCs to each domain.

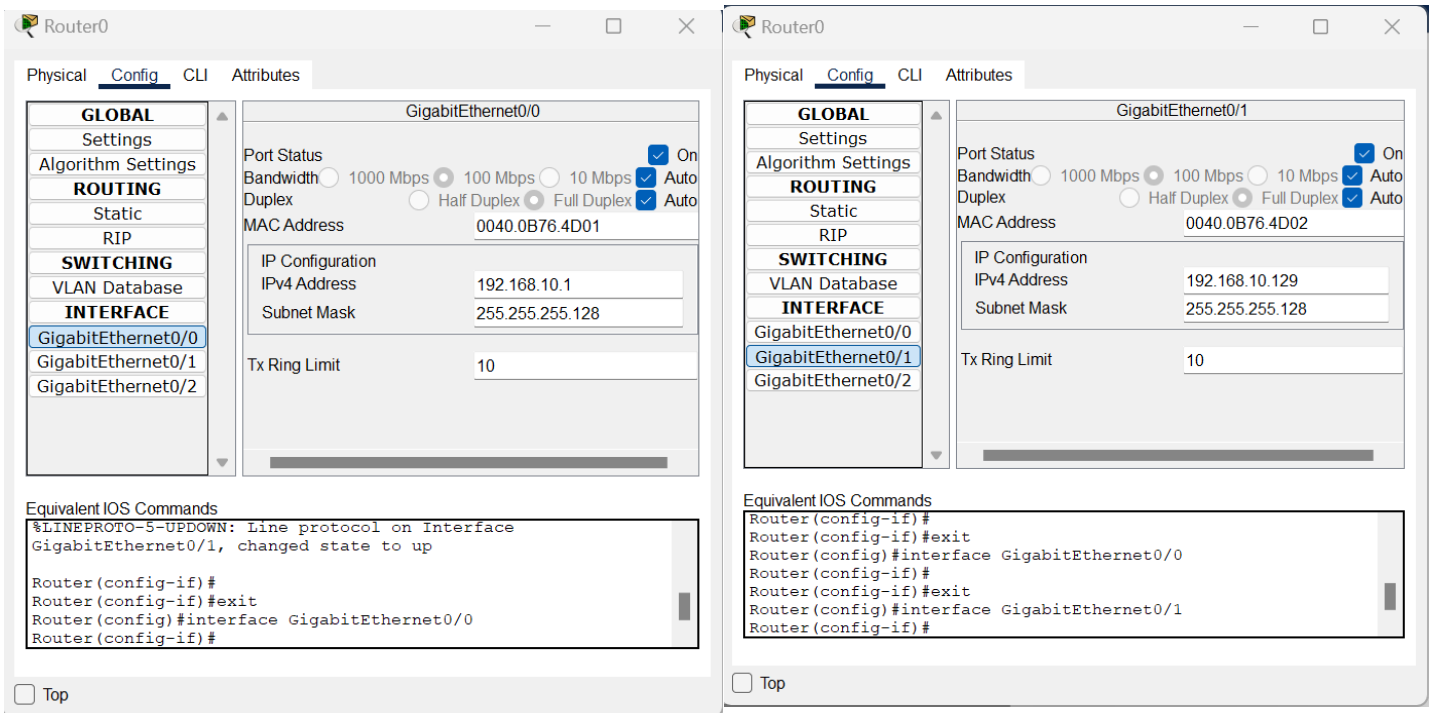


**Setting up PCs:** Assigning IP addresses to first 3 PCs between 192.168.10.2 - 192.168.10.4 with default gateway being 192.168.10.1 which is 1<sup>st</sup> valid host in this subnet family. Default subnet mask is 255.255.255.128

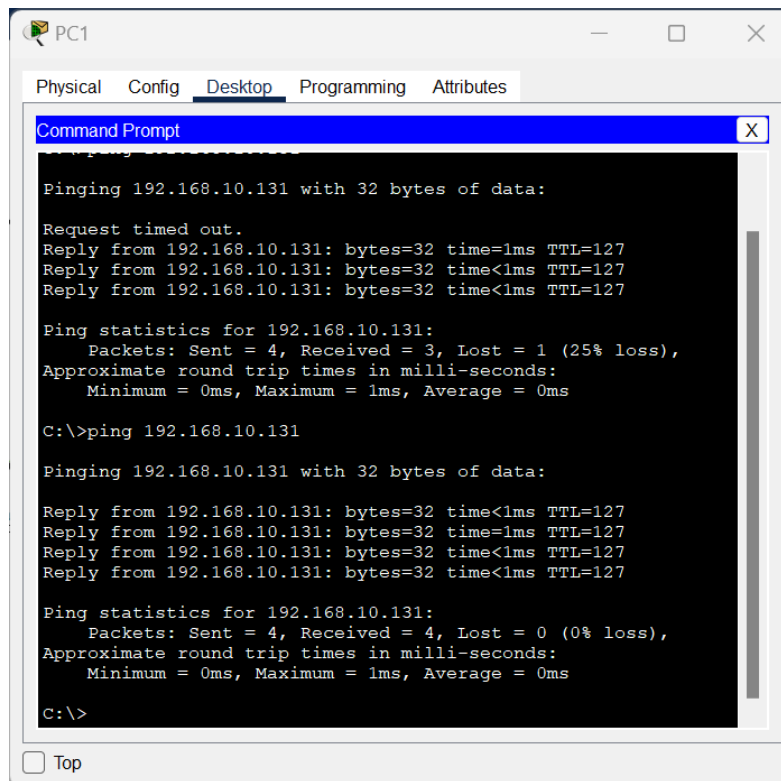




**Setting up Router:** Connecting the switches to router and adding the default IPv4 of each subnet. As there are 2 domains so this is done twice 1<sup>st</sup> IP is 192.168.10.1 and 2<sup>nd</sup> is 192.168.10.129.



**Pinging:** Verifying connections by pinging PC1 (IPv4=192.168.10.3) to PC4 (IPv4=192.168.10.131) which is successful.



The screenshot shows a window titled "PC1" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of a ping command to 192.168.10.131. The first attempt shows a "Request timed out." followed by three successful replies. The second attempt shows four successful replies. The ping statistics for 192.168.10.131 are displayed for both attempts.

```
Pinging 192.168.10.131 with 32 bytes of data:

Request timed out.
Reply from 192.168.10.131: bytes=32 time=1ms TTL=127
Reply from 192.168.10.131: bytes=32 time<1ms TTL=127
Reply from 192.168.10.131: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.10.131:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.10.131

Pinging 192.168.10.131 with 32 bytes of data:

Reply from 192.168.10.131: bytes=32 time<1ms TTL=127
Reply from 192.168.10.131: bytes=32 time=1ms TTL=127
Reply from 192.168.10.131: bytes=32 time<1ms TTL=127
Reply from 192.168.10.131: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.10.131:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```