

Lab - 3

Inter-Block and Outer Block Testing

Objective:

We are going to make segments/blocks of a network and then perform communication within and outside those blocks

Procedure:

Step 1: The network being used is 192.168.2.0/26 with subnet mask 255.255.255.192

Step 2: Simply design 2 networks as one designed in Lab-1.

Step 3: Connect these networks to a Router using straight cable

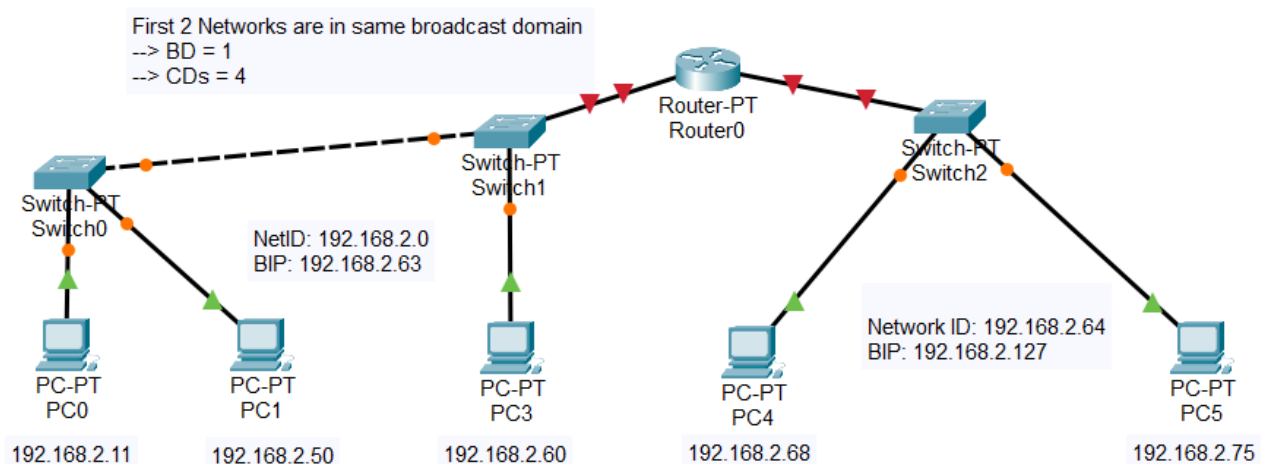


Figure 3.1: Network Design

Step 4: Use block 1 that has range 192.168.2.1 to 192.168.2.62 and subnet 255.255.255.192 for 1st

network

Step 5: Similarly block 2 with range 192.168.2.65 to 192.168.2.126 and subnet 255.255.255.192 will

be used for network 2

Step 6: Assign the first valid IP of block 1 i.e., 192.168.2.1 to interface Fa 0/0 of router

Step 7: Assign the first valid IP of block 2 i.e., 192.168.2.65 to interface Fa 1/0 of router

Step 8: Assign IP, Subnet mask and gateway (IP of respective interface of router) to the hosts in both networks

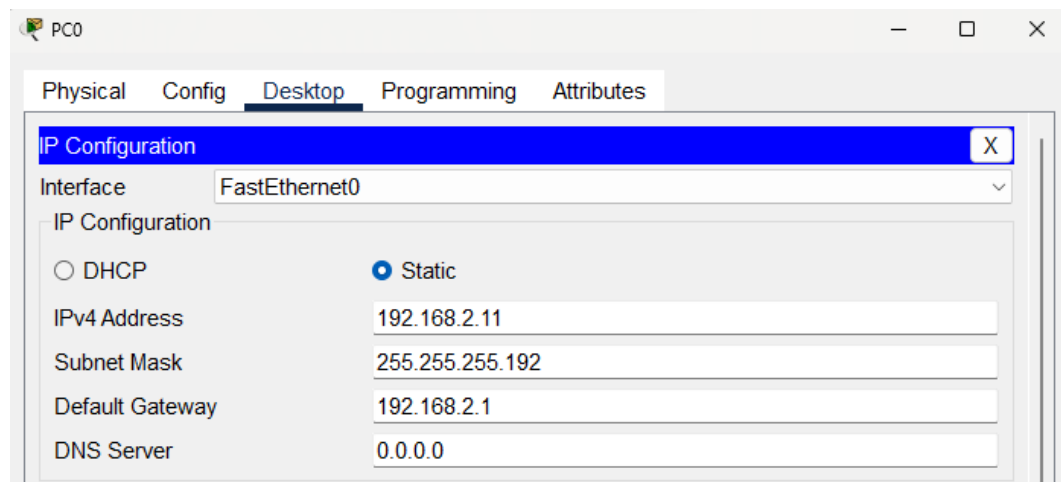


Figure 3.2: Configuring PC

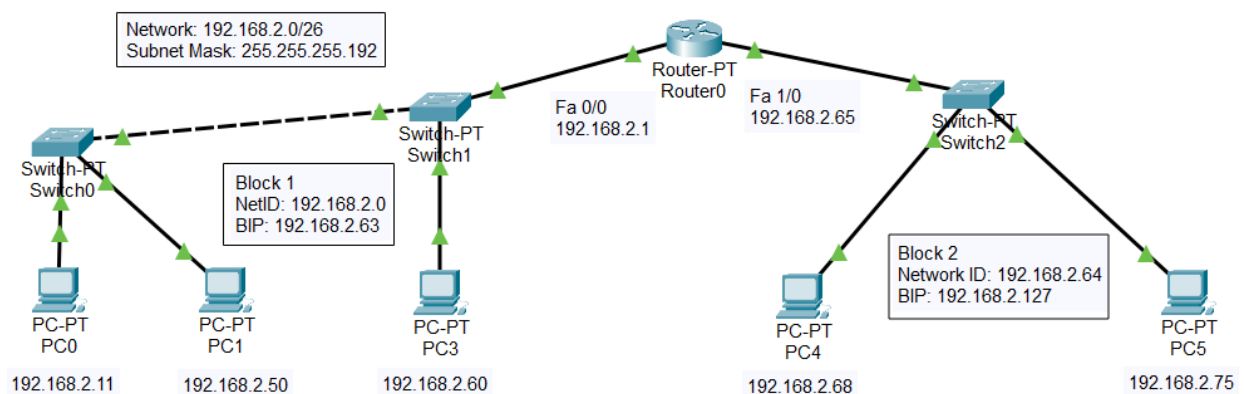


Figure 3.3: Configured network according to block range

Step 9: Test that communication within the block is working well by ping method

Step 10: Single click on PC0 and go to Desktop > Command Prompt then type command “ping 192.168.2.60” then press enter

```
PC0
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ping 192.168.2.60

Pinging 192.168.2.60 with 32 bytes of data:

Reply from 192.168.2.60: bytes=32 time<1ms
TTL=128
Reply from 192.168.2.60: bytes=32 time<1ms
TTL=128
Reply from 192.168.2.60: bytes=32 time=12ms
TTL=128
Reply from 192.168.2.60: bytes=32 time=1ms
TTL=128

Ping statistics for 192.168.2.60:
    Packets: Sent = 4, Received = 4, Lost =
0 (0% loss),
Approximate round trip times in milli-
seconds:
    Minimum = 0ms, Maximum = 12ms, Average =
3ms
```

Figure 3.4: Ping from one host to other within block 1

Step 11: Test that communication outside the block is working well by Simple PDU

Step 12: Drag and drop a Simple PDU to PC0 and then to PC4 (in Block 2) then go to simulation and observe

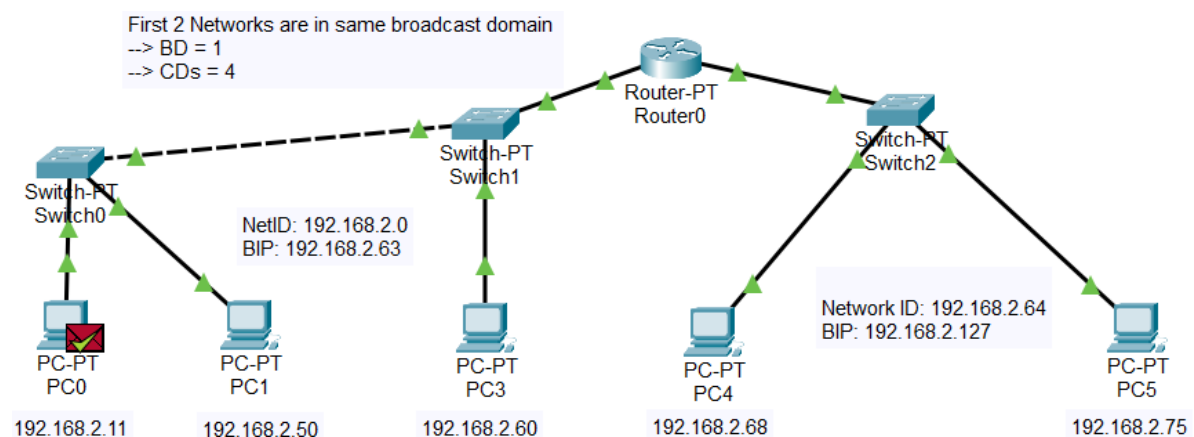


Figure 3.5: Acknowledgment of PDU

Step 13: Go to simulation and observe the path of PDU to see that network is working well

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.006	PC4	Switch2	ICMP
	0.007	Switch2	Router0	ICMP
	0.008	Router0	Switch1	ICMP
	0.009	Switch1	Switch0	ICMP
	0.010	Switch0	PC0	ICMP

Reset Simulation

☒ Constant Delay

Play Controls

Figure 1.6: Simulation Panel