

Lab - 4

Inter-Block and Outer Block Testing of Block 1 and 2

Objective:

Given Network is 195.168.101.0/24 and we have to divide it into 6 departments where each departments require 30 valid hosts. In this lab we'll only configure 1st 2 blocks.

Procedure:

Step 1: The network being used is 195.168.101.0/24 with subnet mask 255.255.255.0

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

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

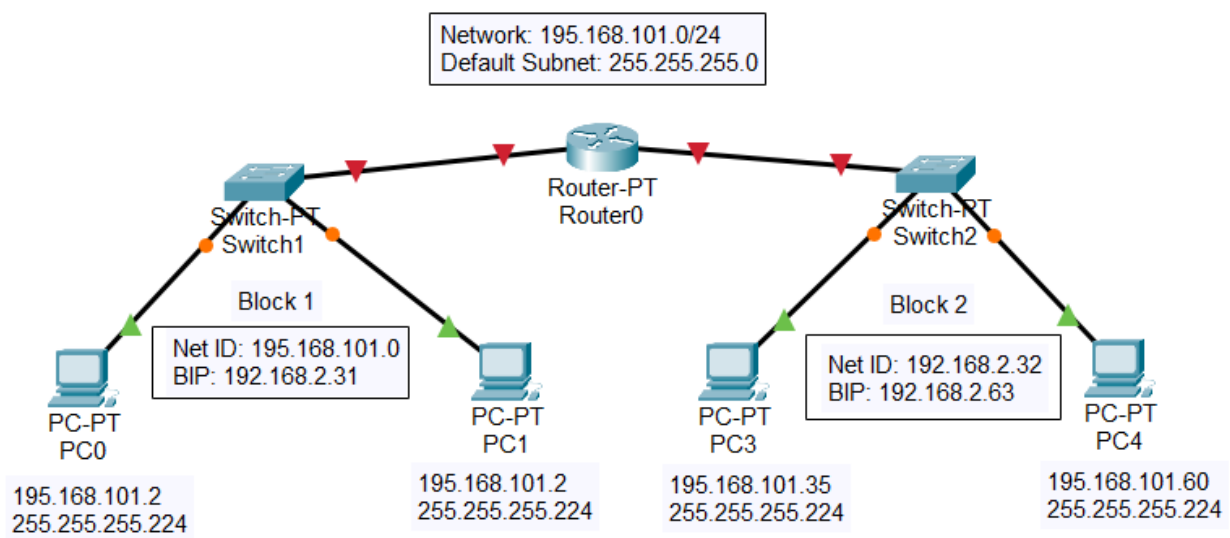


Figure 3.1: Network Design

Step 4: Use block 1 that has range 195.168.101.1 to 195.168.101.31 and subnet 255.255.255.224 for
1st network

Step 5: Similarly block 2 with range 195.168.101.33 to 195.168.101.63 and subnet 255.255.255.224
will be used for network 2

Step 6: Assign the first valid IP of block 1 i.e., 195.168.101.1 to interface Fa 0/0 of router

Step 7: Assign the first valid IP of block 2 i.e., 195.168.101.33 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

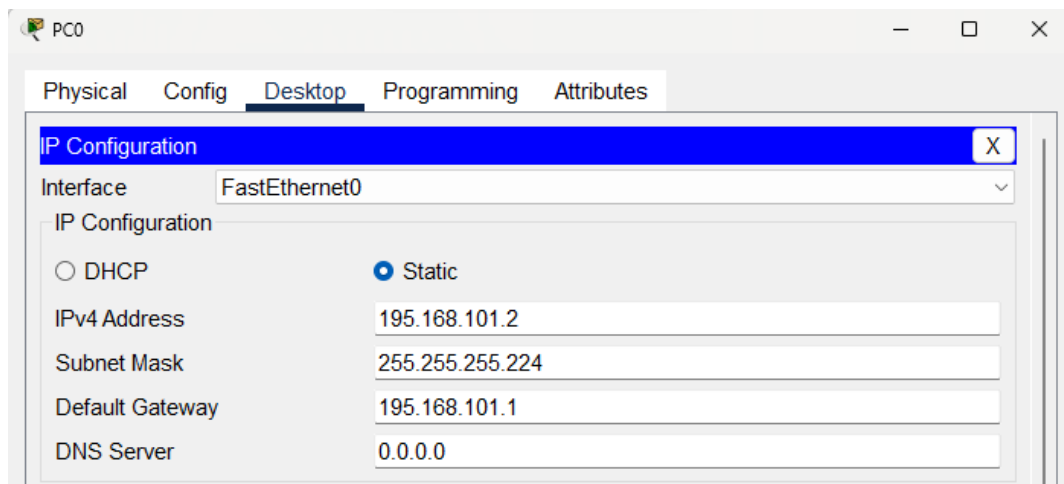


Figure 3.2: Configuring PC

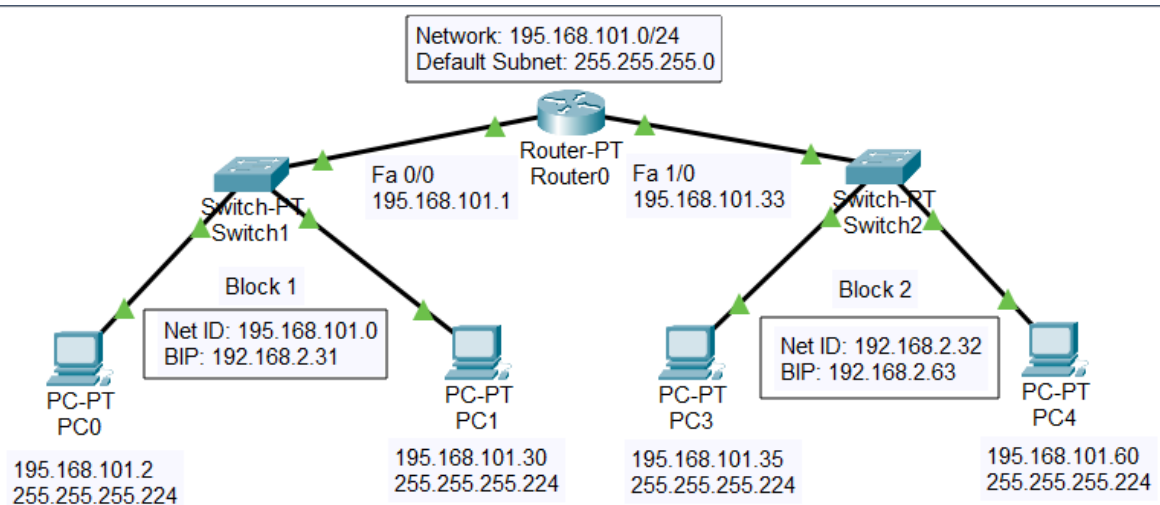


Figure 3.3: Configured network according to block range

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
195.168.1.30” then press enter

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C:\>ping 195.168.101.30

Pinging 195.168.101.30 with 32 bytes of data:

Reply from 195.168.101.30: bytes=32 time<1ms TTL=128
Reply from 195.168.101.30: bytes=32 time<1ms TTL=128
Reply from 195.168.101.30: bytes=32 time<1ms TTL=128
Reply from 195.168.101.30: bytes=32 time<1ms TTL=128

Ping statistics for 195.168.101.30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
  
```

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 PC3 (in Block 2) then go to simulation and observe

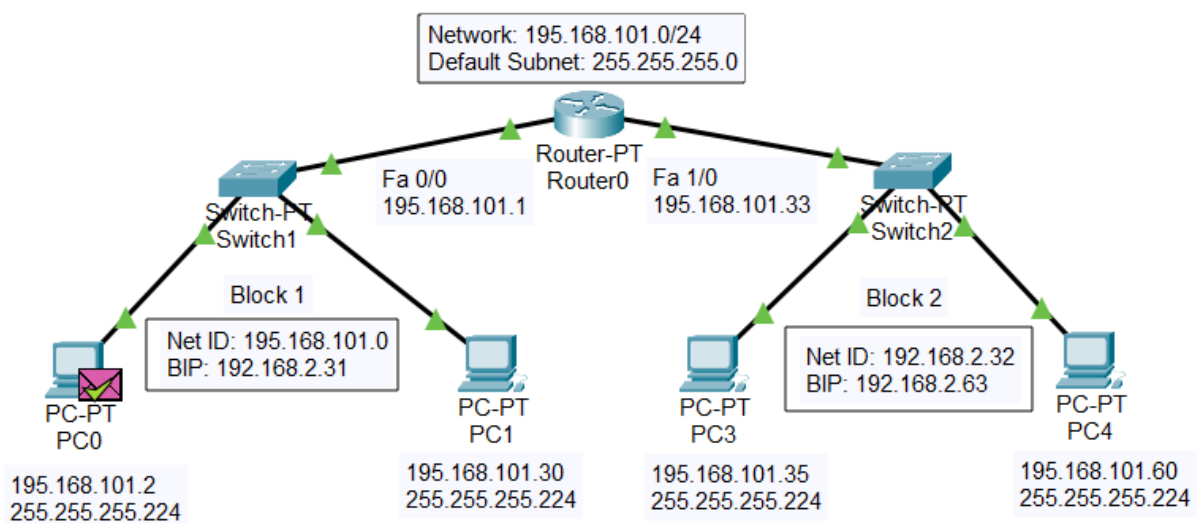


Figure 3.5: Acknowledgment of PDU

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
	0.001	PC0	Switch1	ICMP
	0.002	Switch1	Router0	ICMP
	0.003	Router0	Switch2	ICMP
	0.004	Switch2	PC3	ICMP

Reset Simulation

☒ Constant Delay

Play Controls

Figure 1.6: Simulation Panel