Lab - 7

Static Routing

Communication Between 3 different Networks Using 3 Routers

Objective:

We are going to perform Communication Between 3 different Networks Using 3 Routers by the technique of static routing

Procedure:

Step 1: Design a simple network with Network ID 192.168.1.0 and configure the hosts in it,

as done in Lab 1

Step 2: Similarly, add 2 more networks with Net IDs 192.168.3.0 and 192.168.6.0

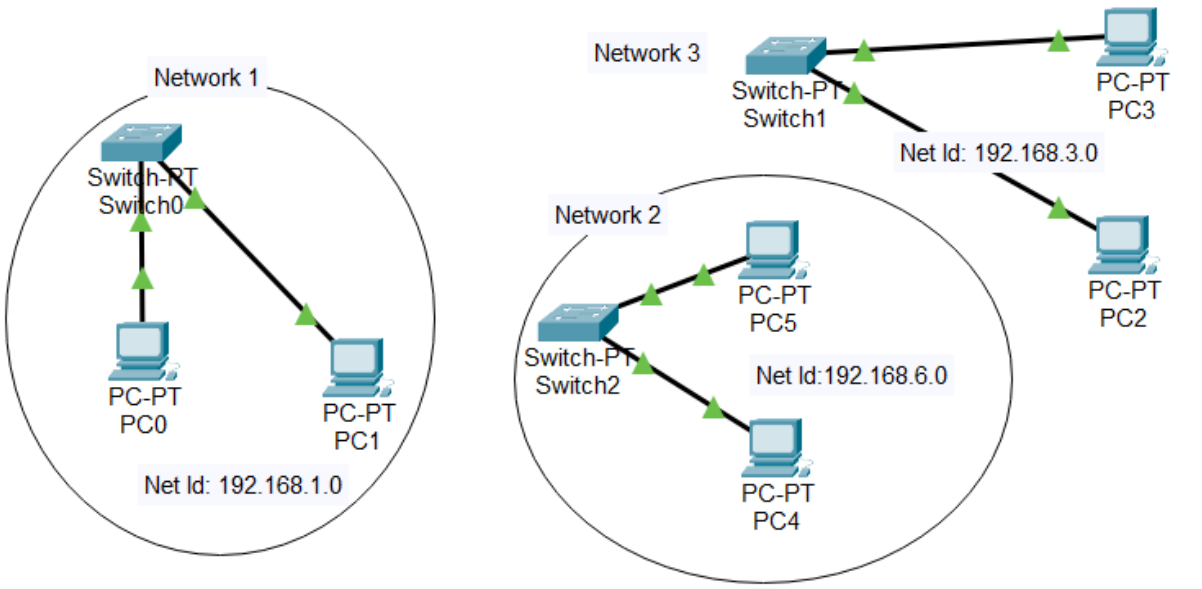

Figure 4.1: Three Networks Design

Step 3: **Now drag and drop 3 routers for these 3 networks and connect them with the switches of respective Networks**

Step 4: **Connect the routers to each other using DCE cable through serial ports**

Step 5: **Assign the IPs to the interfaces of routers as in the following table**

Table 4.1: Routers Interfaces configuration

Router	Interface	IP
0	Fa 0/0	192.168.1.1
	Se 2/0	192.168.2.1
	Se 3/0	192.168.4.1
1	Fa 0/0	192.168.3.1
	Se 2/0	192.168.2.3
	Se 3/0	192.168.5.2
2	Fa 0/0	192.168.6.1
	Se 2/0	192.168.5.1
	Se 3/0	192.168.4.2

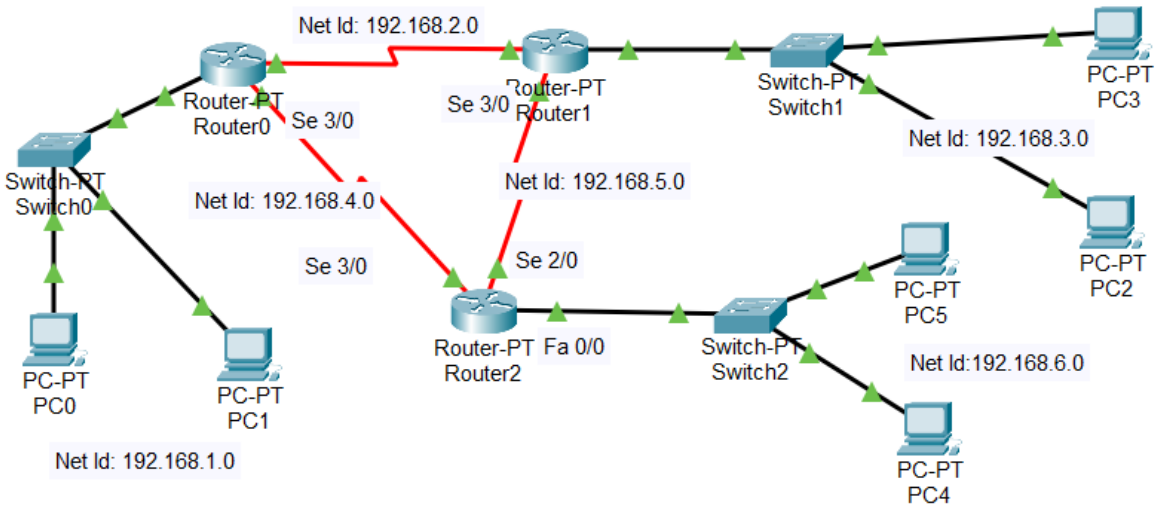

Figure 4.2: Networks Design

Step 5: Now for static routing first select the Router0, go to CLI and open config terminal them select the Interface Se 2/0 for configuration as done in previous labs

Step 6: Type command "ip route 192.168.3.0 255.255.255.0 192.168.2.2" and then type "no shutdown"

Step 7: Similarly follow the below table for other static routings

Table 4.2: Table for Static Routing

Router	Network	Subnet	Interface/IP
0	192.168.3.0	255.255.255.0	192.168.2.3
	192.168.6.0	255.255.255.0	192.168.4.2
1	192.168.1.0	255.255.255.0	192.168.2.1
	192.168.6.0	255.255.255.0	192.168.5.1
2	192.168.1.0	255.255.255.0	192.168.4.1
	192.168.3.0	255.255.255.0	192.168.5.2

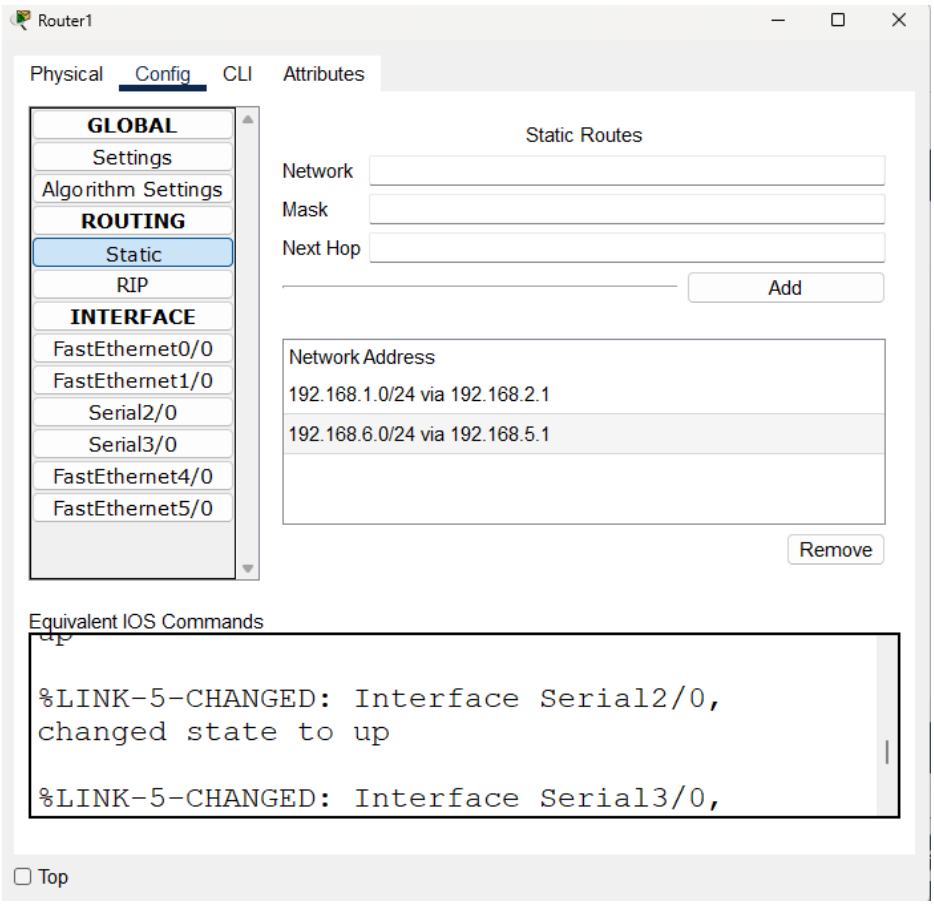

Figure 4.3: Static Routing Check through config

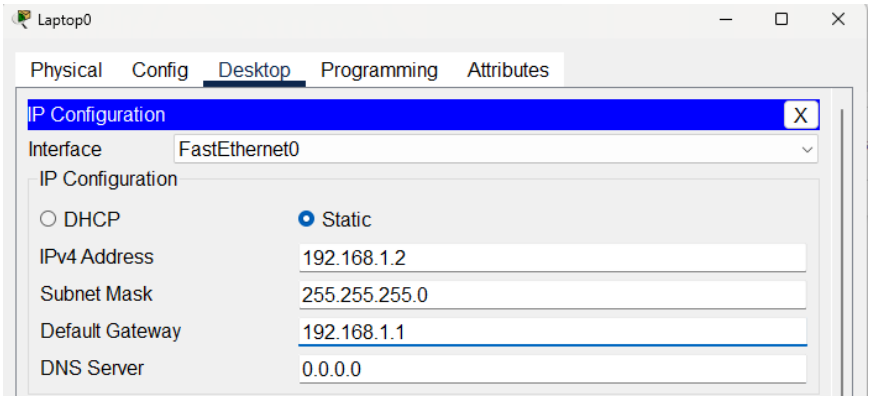

Figure 4.4: Assigning Ips to hosts

Step 8: Once Static routing is done, the network is now ready for communication

~~**Cross check the IPs of hosts and their gateway as well.**~~

Step 9: Single click on PC 0 and go to command prompt and type ping 192.168.6.2

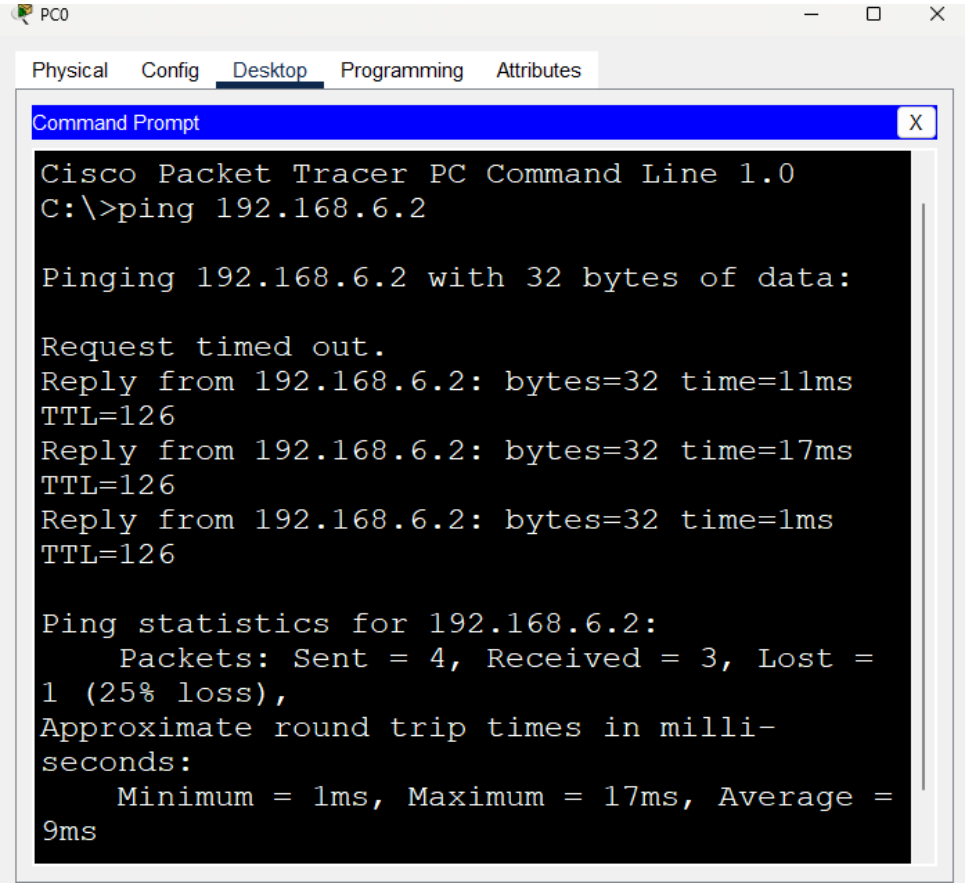

Figure 4.5: Verification by ping method

Step 10: Verify the network through simulation by using Simple PDU

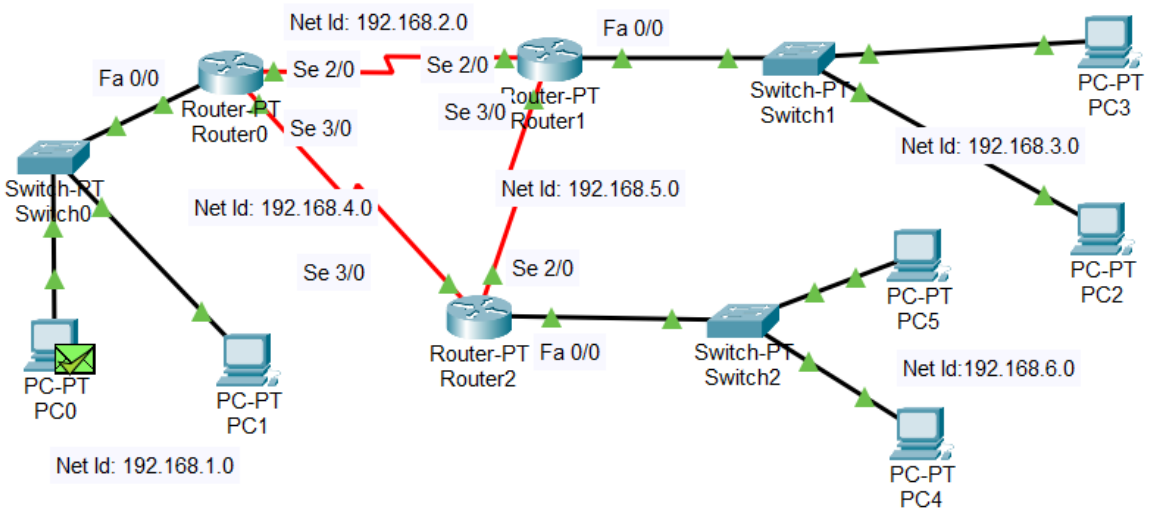

Figure 4.6: Verification by Simple PDU

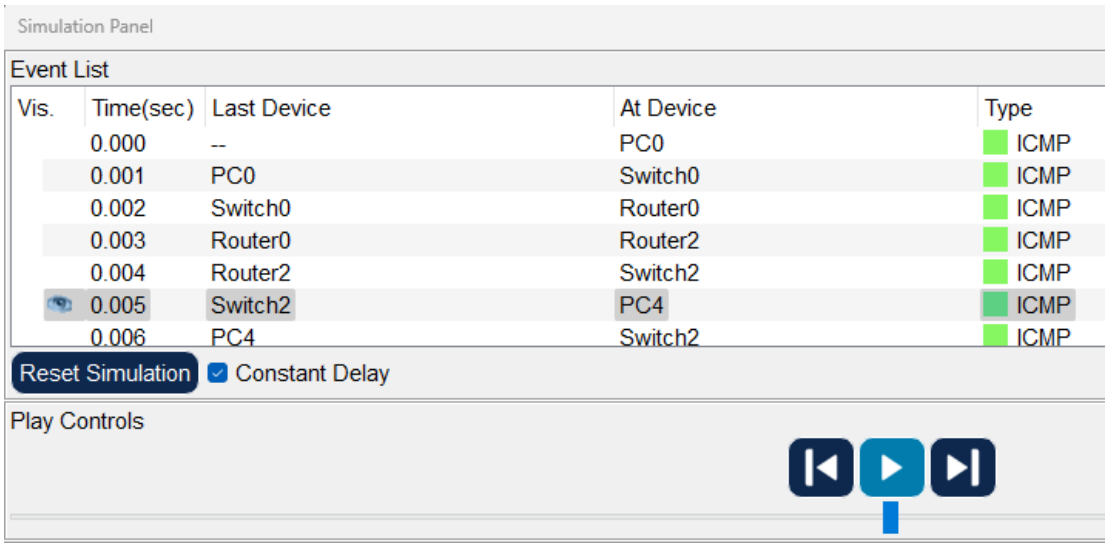

Figure 1.7: Simulation Panel