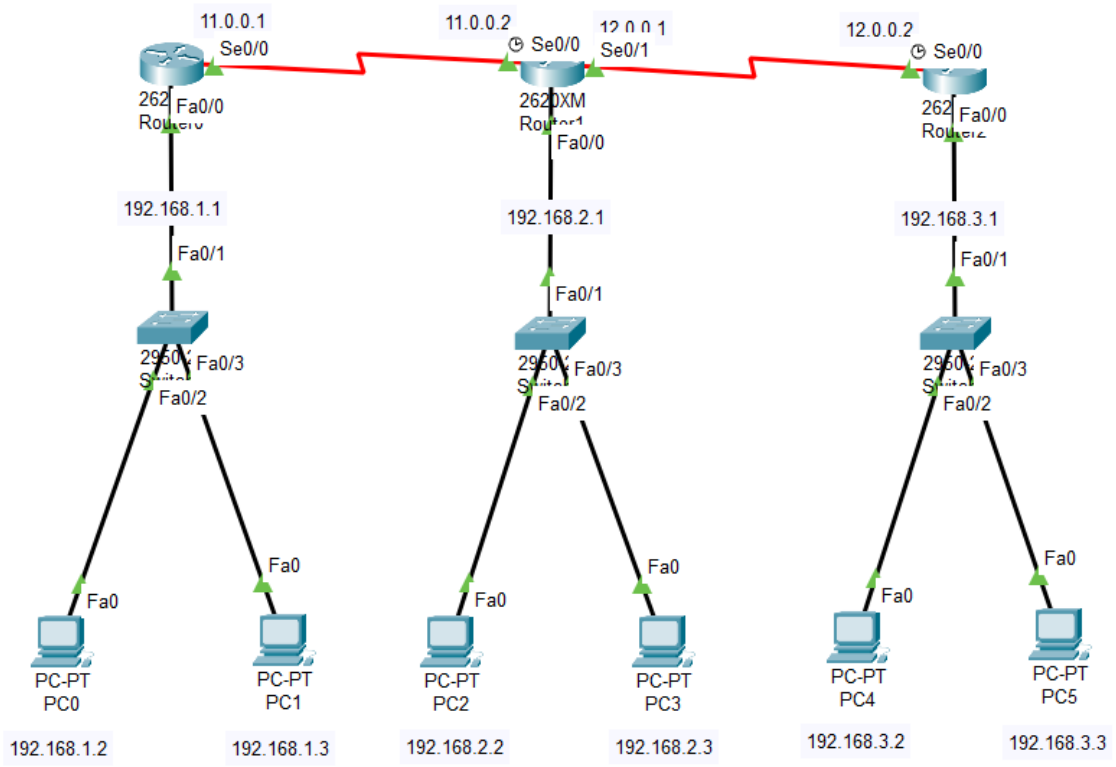
Practical No : 8

Aim : Configure CISCO routers for two different network.



Theory: Configuration of Cisco Routers for Two Different Networks

Objective:

To configure multiple Cisco routers for interconnecting different networks and enabling communication between hosts in separate LANs using static routing.

Network Topology Overview:

The network consists of **three routers (Router0, Router1, Router2)** connected in series using **Serial interfaces**.
Each router also connects to its own **local area network (LAN)** through **Switches** and multiple **PCs**.

The main purpose is to configure IP addressing and static routing so that PCs from all networks can communicate with each other.

Steps -

Network Details:

Device	Interface	IP Address	Connected Network
Router0	FastEthernet0/0	192.168.1.1	LAN 1
	Serial0/0	11.0.0.1	WAN Link to Router1
Router1	Serial0/0	11.0.0.2	WAN Link to Router0
	Serial0/1	12.0.0.1	WAN Link to Router2
	FastEthernet0/0	192.168.2.1	LAN 2
Router2	Serial0/0	12.0.0.2	WAN Link to Router1
	FastEthernet0/0	192.168.3.1	LAN 3

LAN Configuration Details:

LAN	Network Address	Gateway (Router Interface)	Example Host IPs
LAN 1	192.168.1.0/24	192.168.1.1	192.168.1.2, 192.168.1.3
LAN 2	192.168.2.0/24	192.168.2.1	192.168.2.2, 192.168.2.3
LAN 3	192.168.3.0/24	192.168.3.1	192.168.3.2, 192.168.3.3

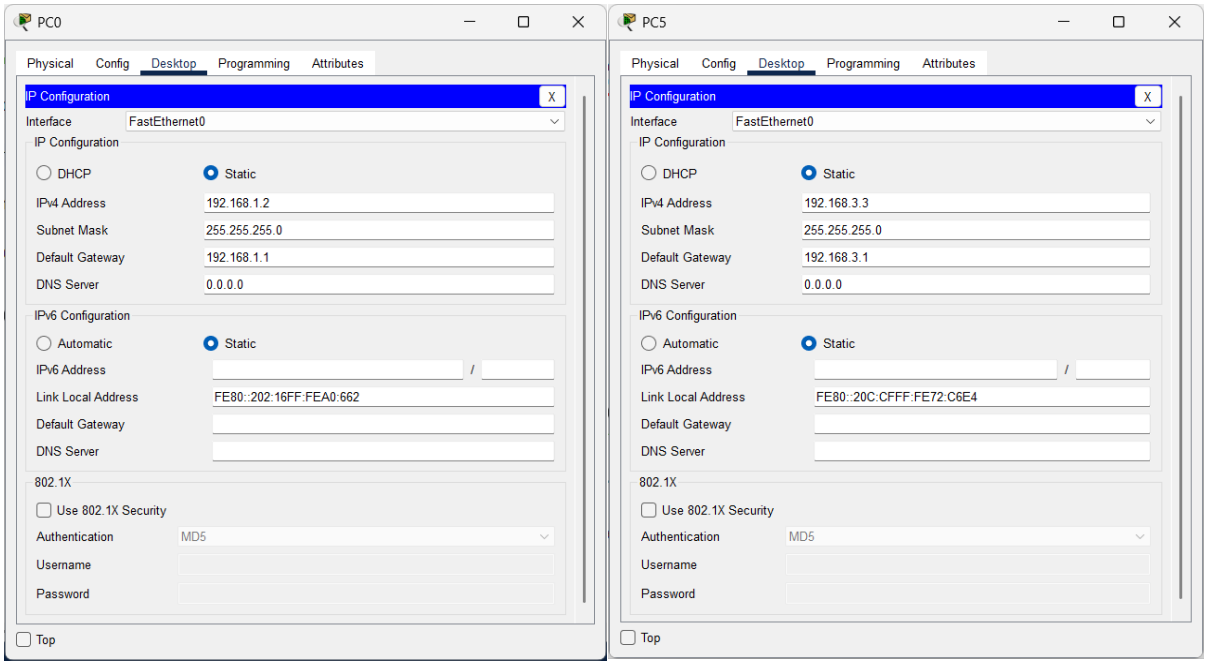
Connection :

Connect all the devices(routers, Switches and PC) as given in the **network details** .

PC Configuration :

Assign Host IPs and Gateways as given in the above **LAN Configuration Details.**

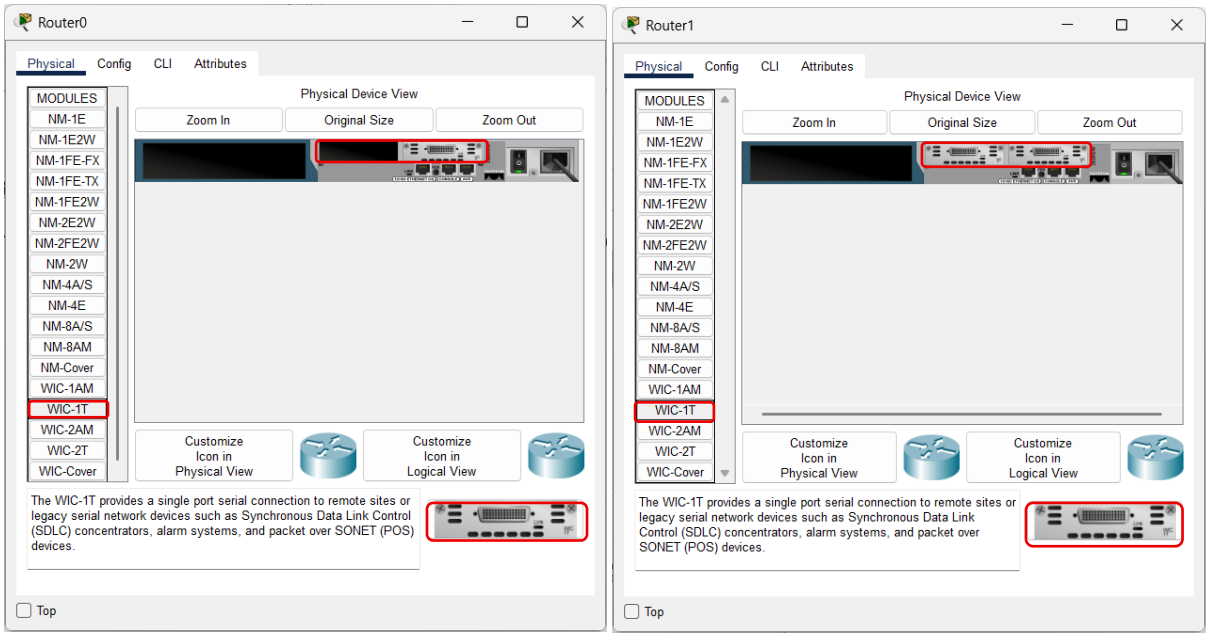
For ex – PC0 , PC5



Router Configuration :

Before Configuring on CLI we need to add **WIC-1T** module to each router –

for router0 and router2 we will add only one module and for router1 we will add two.



Configuring in CLI :

Router0 :-

Router>enable

Router#

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface Serial0/0

Router(config-if)#ip address 11.0.0.1 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface FastEthernet0/0

Router(config-if)#ip address 192.168.1.1 255.255.255.0

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

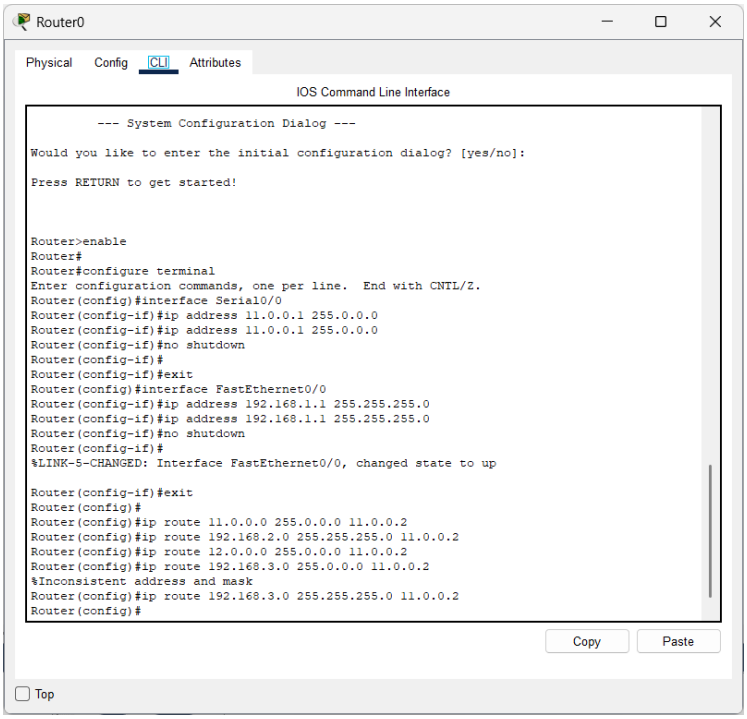
Router(config)#

Router(config)#ip route 11.0.0.0 255.0.0.0 11.0.0.2

Router(config)#ip route 192.168.2.0 255.255.255.0 11.0.0.2

Router(config)#ip route 12.0.0.0 255.0.0.0 11.0.0.2

Router(config)#ip route 192.168.3.0 255.255.255.0 11.0.0.2



Router1 :-

Router>enable

Router#

Router#configure terminal

Router(config)#interface Serial0/0

Router(config-if)#ip address 11.0.0.2 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface Serial0/1

Router(config-if)#ip address 12.0.0.1 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface FastEthernet0/0

Router(config-if)#ip address 192.168.2.1 255.255.255.0

Router(config-if)#no shutdown

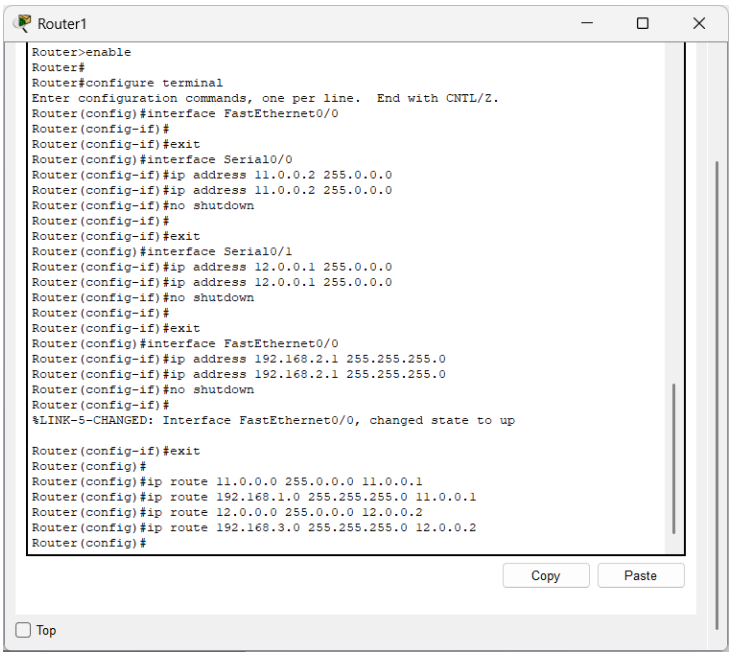
Router(config-if)#exit

Router(config)#ip route 11.0.0.0 255.0.0.0 11.0.0.1

Router(config)#ip route 192.168.1.0 255.255.255.0 11.0.0.1

Router(config)#ip route 12.0.0.0 255.0.0.0 12.0.0.2

Router(config)#ip route 192.168.3.0 255.255.255.0 12.0.0.2



Router2 –

Router>enable

Router#

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface Serial0/0

Router(config-if)#ip address 12.0.0.2 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface FastEthernet0/0

Router(config-if)#ip address 192.168.3.0 255.255.255.0

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

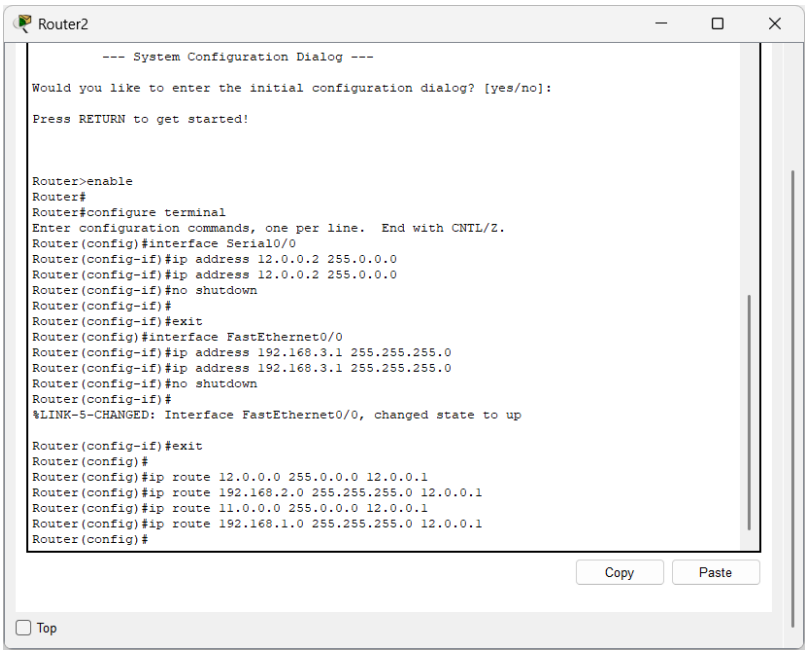
Router(config)#

Router(config)#ip route 11.0.0.0 255.0.0.0 12.0.0.1

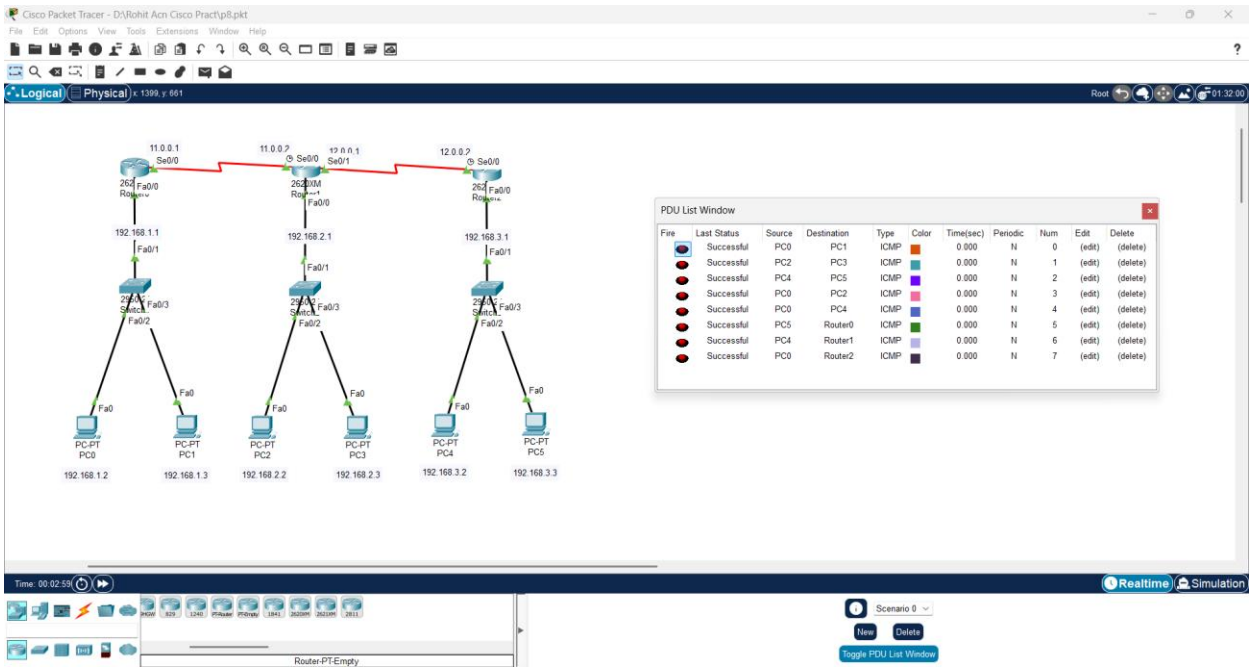
Router(config)#ip route 192.168.2.0 255.255.255.0 12.0.0.1

Router(config)#ip route 12.0.0.0 255.0.0.0 12.0.0.2

Router(config)#ip route 192.168.1.0 255.255.255.0 11.0.0.1



Final Output :



Pinging Router0 with Router1 / Router2