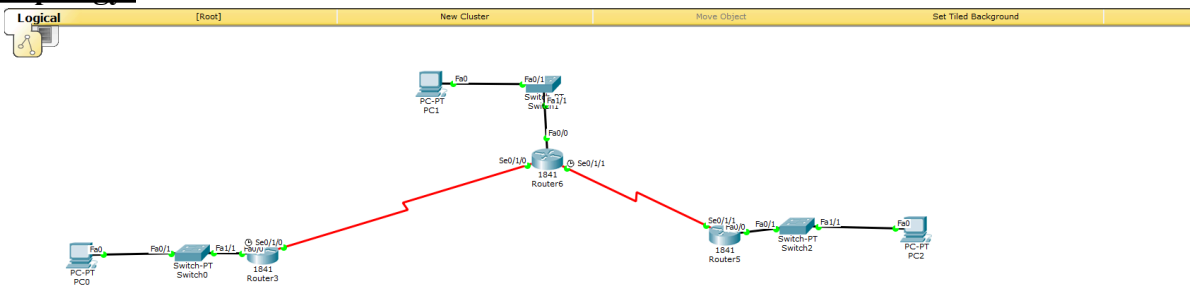
Program – 5:

Aim: Configure default route, static route to the Router

Topology:



Procedure:

1. Create Topology

Create a 3-router topology where each topology contains:

- 1 PC
- 1 Switch
- 1 Router

2. Router Hardware Setup

For **all 3 routers**:

- Click on **Physical** tab
- Turn **Router OFF**
- Drag & drop **HWIC-2T module**
- Turn **Router ON**

3. Connect the Routers

Use **Serial DCE cable** to interconnect all the 3 routers in serial topology.

Router Configurations:

Router 1

Step 1: Configure Serial Interface

Router> enable
Router# configure terminal
Router(config)# int Se0/1/0
Router(config-if)# ip address 172.16.1.1 255.255.255.252
Router(config-if)# no shutdown
Router(config-if)# exit

Step 2: Configure FastEthernet

Router(config)# interface Fa0/0
Router(config-if)# ip address 192.168.10.1 255.255.255.0
Router(config-if)# no shutdown
Router(config-if)# exit

Step 3: Save Configuration

Router# write memory
Router# exit

Router 2
Router> enable
Router# configure terminal
Router(config)# hostname R2
Serial Interface (to Router 1)
R2(config)# int Se0/1/0
R2(config-if)# ip address 172.16.1.2 255.255.255.252
R2(config-if)# no shutdown
FastEthernet Interface
R2(config)# int Fa0/0
R2(config-if)# ip address 192.168.20.1 255.255.255.0
R2(config-if)# no shutdown
Serial Interface (to Router 3)
R2(config)# int Se0/1/1
R2(config-if)# ip address 172.16.2.1 255.255.255.252
R2(config-if)# no shutdown
R2(config-if)# exit
R2# write memory

Router 3
Router> enable
Router# configure terminal
Router(config)# hostname R3
Serial Interface (to Router 2)
R3(config)# int Se0/1/1
R3(config-if)# ip address 172.16.2.2 255.255.255.252
R3(config-if)# no shutdown
FastEthernet Interface
R3(config)# int Fa0/0
R3(config-if)# ip address 192.168.30.1 255.255.255.0
R3(config-if)# no shutdown
R3(config-if)# exit
R3# write memory

PC IP Configuration
PC0
- IP: 192.168.10.10
- Default Gateway: 192.168.10.1

PC1
- IP: 192.168.20.10
- Default Gateway: 192.168.20.1

PC2
- IP: 192.168.30.10
- Default Gateway: 192.168.30.1

Static Route Configuration
Router 1
R1> enable

R1# configure terminal
R1(config)# hostname R1
R1(config)# ip route 192.168.20.0 255.255.255.0 172.16.1.2
R1(config)# ip route 192.168.30.0 255.255.255.0 172.16.1.2
R1# write memory

Router 2
R2> enable
R2# configure terminal
R2(config)# ip route 192.168.10.0 255.255.255.0 172.16.1.1
R2(config)# ip route 192.168.30.0 255.255.255.0 172.16.2.2
R2# write memory

Router 3 (Default Route)
R3> enable
R3# configure terminal
R3(config)# ip route 0.0.0.0 0.0.0.0 Se0/1/1
R3# write memory

Output:

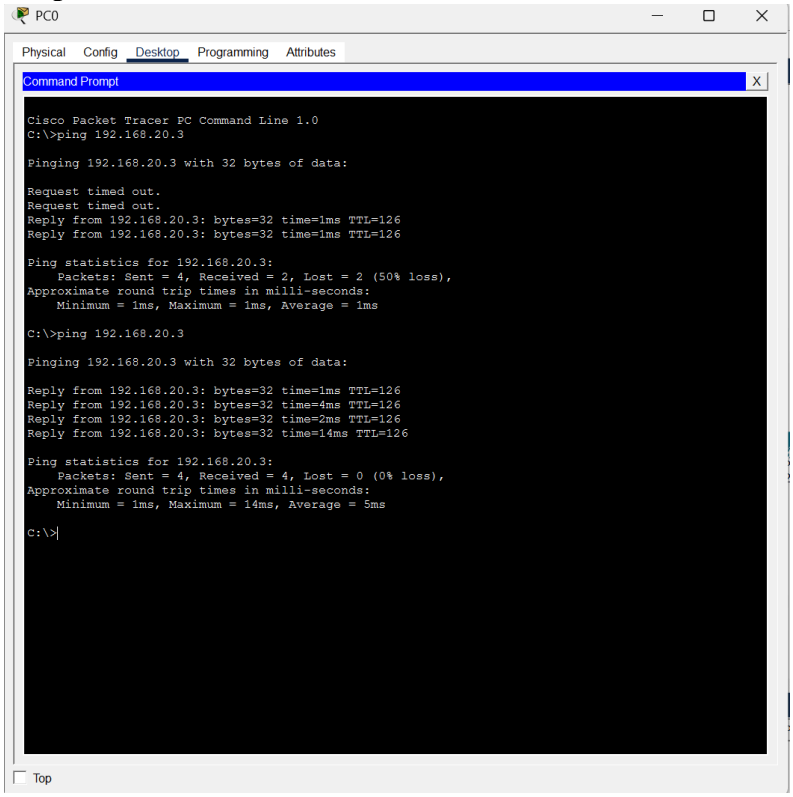


Fig 5.1 ping to PC1 from PC0

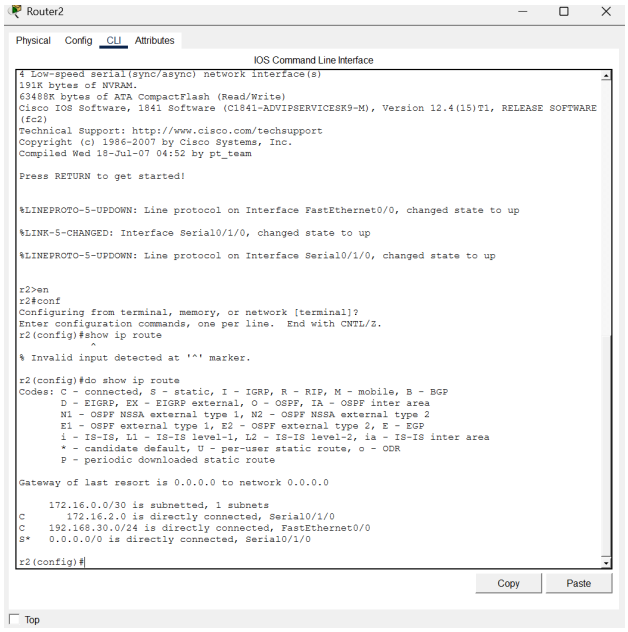


Fig 5.2 ip route information in default router