TITLE: Configure default Route, static route to the Router

Experiment 3:

Configure default route, static route to the Router.

Static route:

Aim: Successful transmission of packets from one PC to other of different routers.

Topology:- Two PCs are connected to two different routers using Copper Cross Over and those two routers are connected to each other using Serial DCE'

Procedure:

1. After successful configuration of the two routers. Open CLI of one router and follow the commands to configure static routing.

> ip route 20.0.0.0 255.0.0.0 30.0.0.2

Open the CLI of other router.

> ip route 10.0.0.0 255.0.0.0 30.0.0.1

Observation: After configuration of Static routing, the ①
two PC's of two different router networks are able
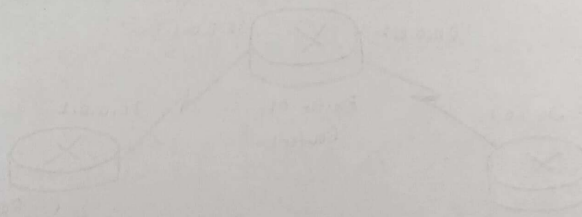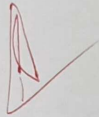to transfer / transmit the packets using the
ping command.

Output:

Router # show ip route

   C   10.0.0.0/8 is directly connected, fast Ethernet 0/0

   S   20.0.0.0/8 [1/0] via 30.0.0.2
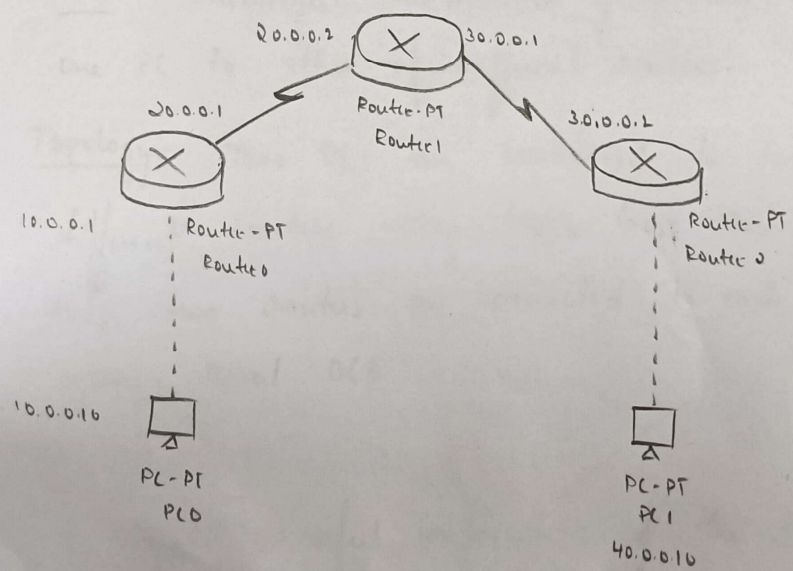
   C   30.0.0.0/8 is directly connected, Serial 2/0

Configure default route, static route to the Router.

Aim: To configure a default route and static route to a router in a network and verify connectivity.

Topology:-

Router 0 and Router 2 are connected serially via router 1 using a DCE cable. PC 0 is connected to Router 0 using Copper Cross-over, similarly PC 1 is connected to Router 2.

20.0.0.2   30.0.0.1

Router-PT
Router 1

20.0.0.1

30.0.0.2

10.0.0.1

Router-PT
Router 0

Router-PT
Router 2

10.0.0.10

PC-PT
PC 0

PC-PT
PC 1

40.0.0.10

Procedure:

1. Configure the fast Ethernet connection between the PC and the router with appropriate IP addresses. For,
2. Router 1 set the static routing connectivity by following the commands.

Router # config-t

Router (config)# ip route 40.0.0.0 255.0.0.0 30.0.0.2

Router (config)# ip route 10.0.0.0 255.0.0.0 20.0.0.1

These commands will set the static Routing of the

Router 1.

3. Set the default Routing of Router 0 and Router 2.

    — Open CLI on Router 0

        Router # config -t

        Router (config)# ip route 0.0.0.0 0.0.0.0 20.0.0.2

        ~~Router~~

    — Open CLI on Router 2

        Router # config -t

        Router (config)# ip route 0.0.0.0 0.0.0.0 30.0.0.1

When the network and the subnet mask are

set as ~~zero~~ 0.0.0.0. Any unknown network will be

transferred to the next hop address mentioned.

Observation:

    After configuring the default route, PC0 could

communicate with external networks, including PC1

The static route ensured that packets ~~are~~ followed

the specified path as given in the static routing.

Output:

Router 1 :

                # show ip route

      S   10.0.0.0/8 [1/0] via 20.0.0.1

      C   20.0.0.0/8 is directly connected, Serial 2/0

      C   30.0.0.0/8 is directly connected, Serial 3/0

      S   40.0.0.0/8 [1/0] via 30.0.0.2

Router 0:   # show ip route
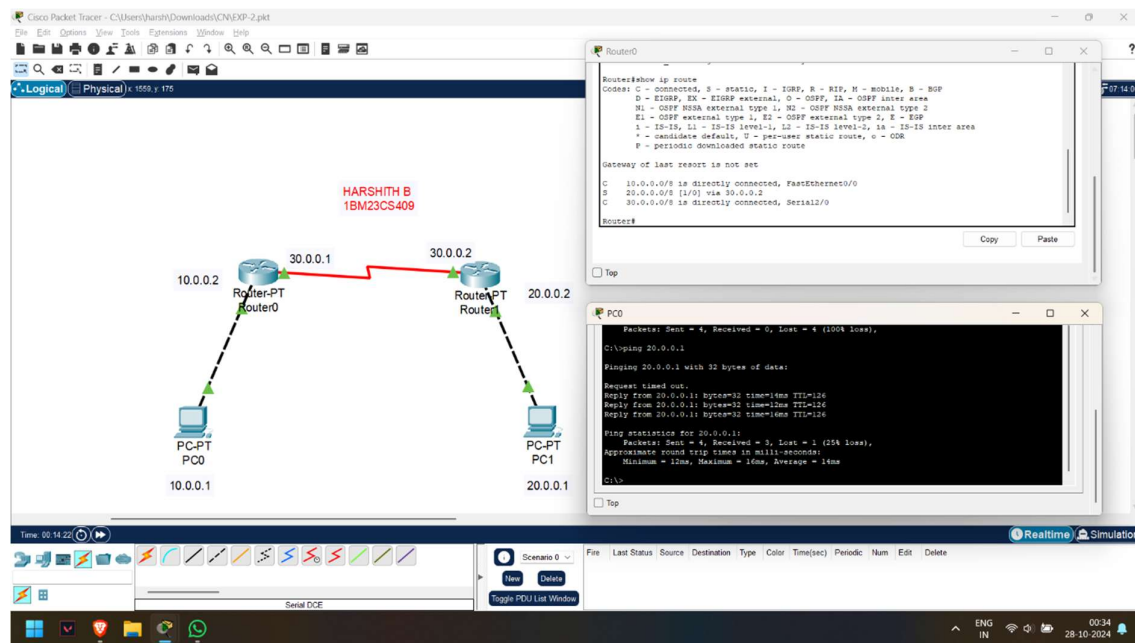
C   10.0.0.0/8 is directly connected, FastEthernet0/0
C   20.0.0.0/8 is directly connected, Serial 2/0
S*   0.0.0.0/8   [1/0] via 20.0.0.2
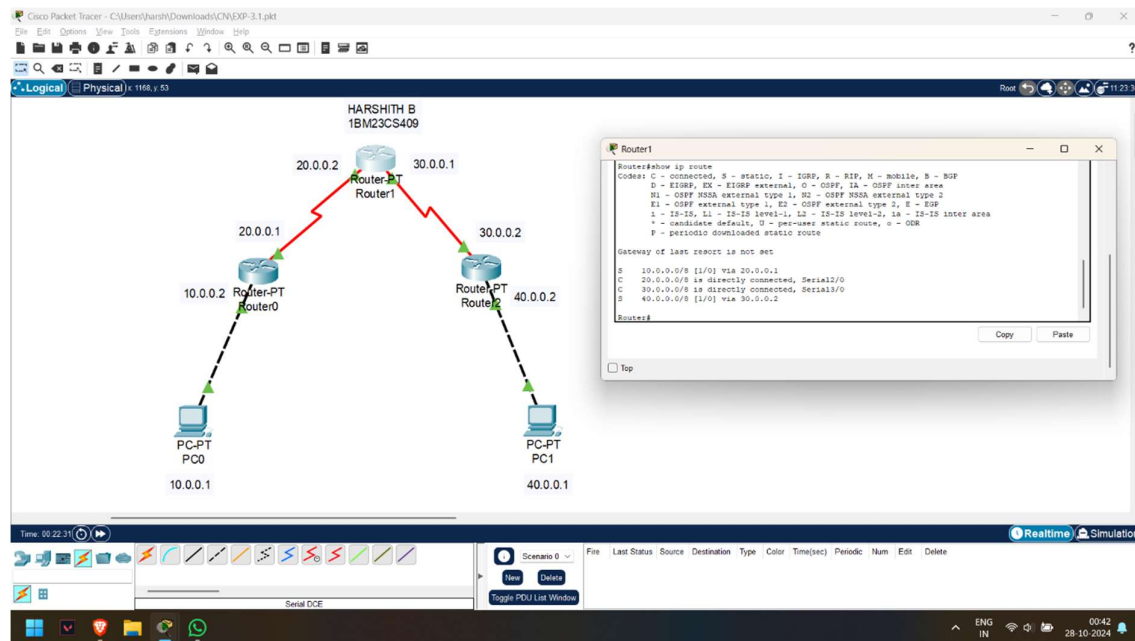

Router 2:   # show ip route

C   40.0.0.0/8 is directly connected, FastEthernet0/0
C   30.0.0.0/8 is directly connected, Serial 3/0
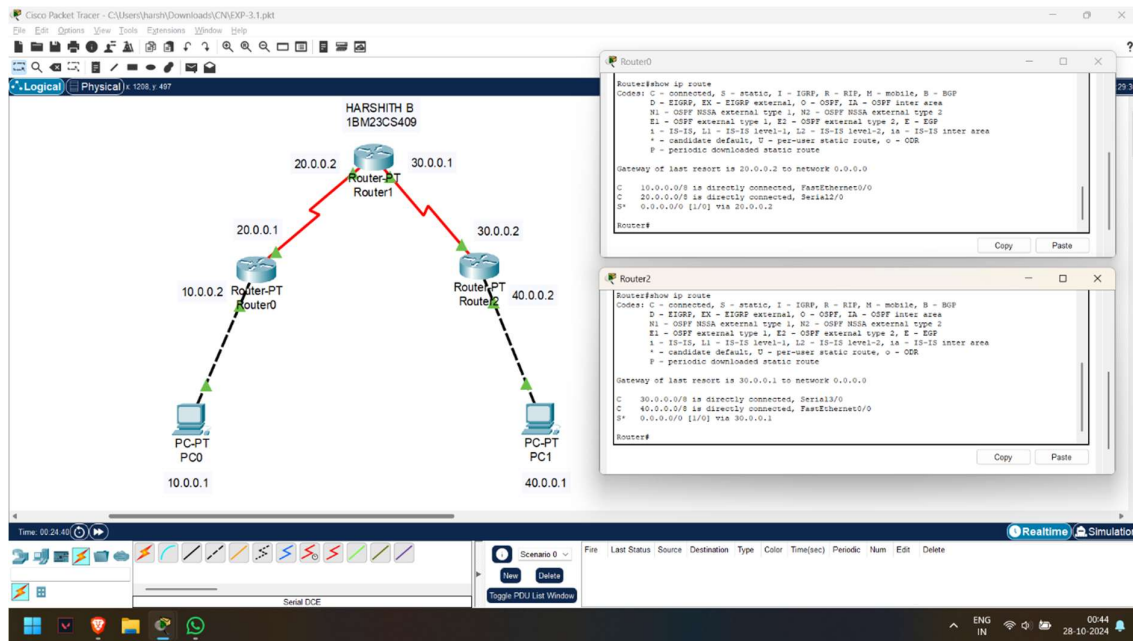S*   0.0.0.0/8   [1/0] via 30.0.0.1
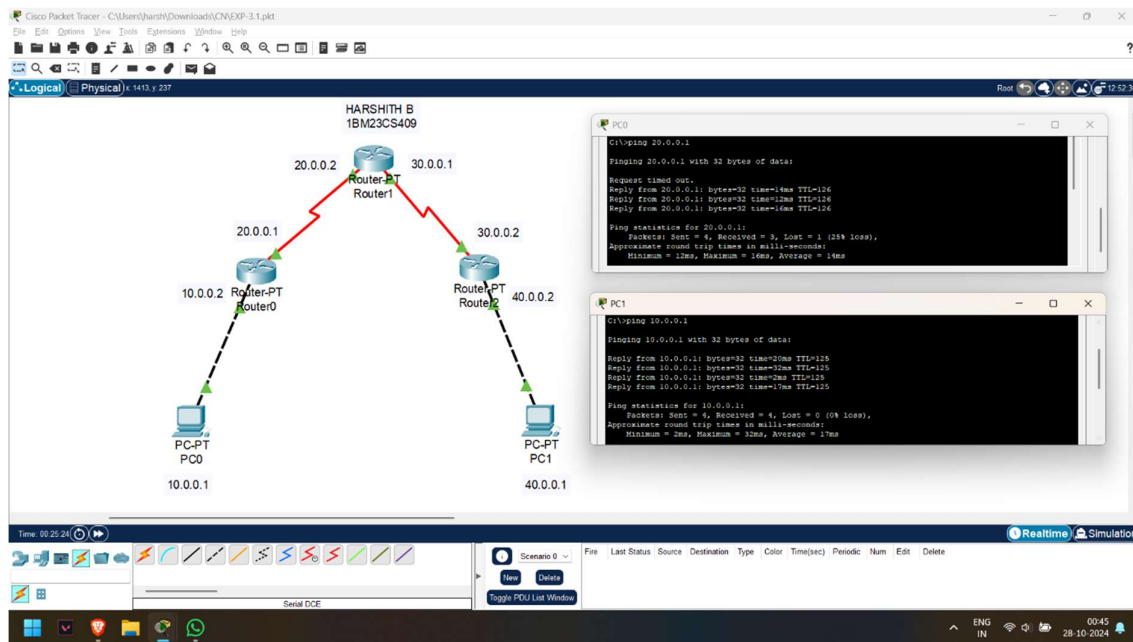
OUPUT SNAPSHOTS:

1. IP Route and Ping Test After Static Route to the Router

2. IP Route after Static Route to the Router

3. IP Route After Default Route to the Router

4. Ping Test after default route and static route configuration to the Router