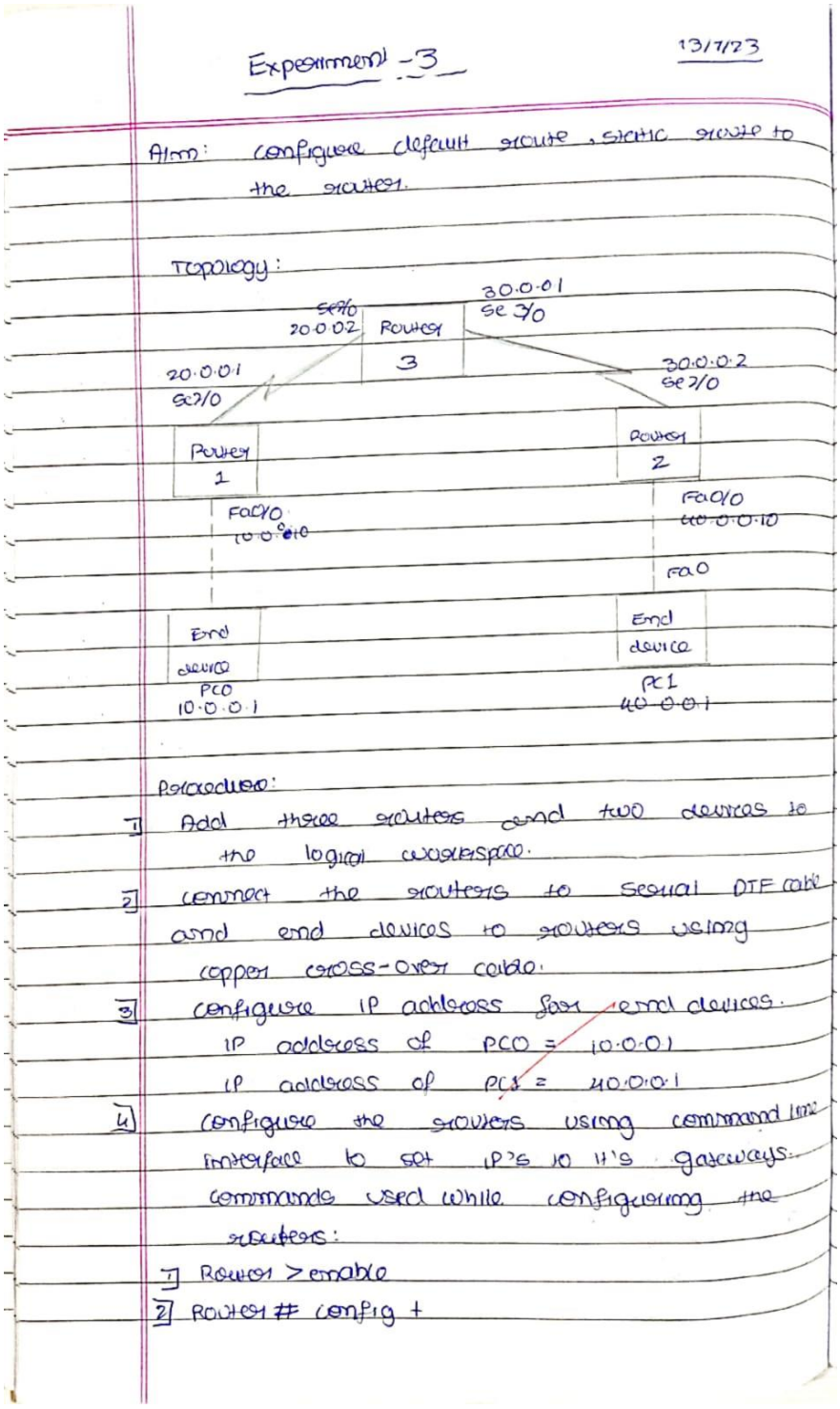
EXPERIMENT-3

Configure default route, static route to the Router.



Experiment -3

13/7/23

Aim: Configure default route, static route to the routers.

Topology:

Procedure:

1] Add three routers and two devices to the logical workspace.

2] Connect the routers to Serial DTE cable and end devices to routers using copper cross-over cable.

3] Configure IP address for end devices.
IP address of PC0 = 10.0.0.1
IP address of PC1 = 40.0.0.1

4] Configure the routers using command line interface to set IP's to it's gateways.
Commands used while configuring the routers:

1] Router > enable

2] Router # config t

Date 13/7/23
Page

3] Router(config)# interface <port#>
4] Router(config-if)# ip address <ip address> <subnet mask>
5] Router(config-if)# no shut
6] Router(config)# exit.

* Set the gateways for end devices.
gateway for PC0 : 10.0.0.10
gateway for PC1 : 40.0.0.10.

7] Default routing is possible for networks 10.0.0.0 and 40.0.0.0. Following commands are used to set default routers for the networks 10.0.0.0 and 40.0.0.0
ip route 0.0.0.0 0.0.0.0 20.0.0.2.
ip route 0.0.0.0 0.0.0.0 30.0.0.2.

8] For router 2, we need to mention the ip route
ip route 40.0.0.0 255.0.0.0 30.0.0.1
ip route 10.0.0.0 255.0.0.0 20.0.0.1

9] ping from one end device to another.

Result :

Pinging 40.0.0.1 with 32 bytes of data :

Request timed out.
Reply from 40.0.0.1 : bytes=32 time=15ms TTL=125
Reply from 40.0.0.1 : bytes=32 time=11ms TTL=125
Reply from 40.0.0.1 : bytes=32 time=2ms TTL=125

ping statistics for 40.0.0.1
Packets: Sent = 4, Received = 3, Lost = 1 (25% Loss)

Approximate round trip times in milli-seconds
Minimum = 2ms, Maximum = 15ms, Average = 9ms

IP route of Router 1
Gateway of last resort is 20.0.0.1 to network 0.0.0.0

C 10.0.0.0/8 is directly connected, FastEthernet 0/0
C 20.0.0.0/8 is directly connected, Serial 2/0
S* 0.0.0.0 [1/0] via 20.0.0.1
[1/0] via 20.0.0.2.

Observation:

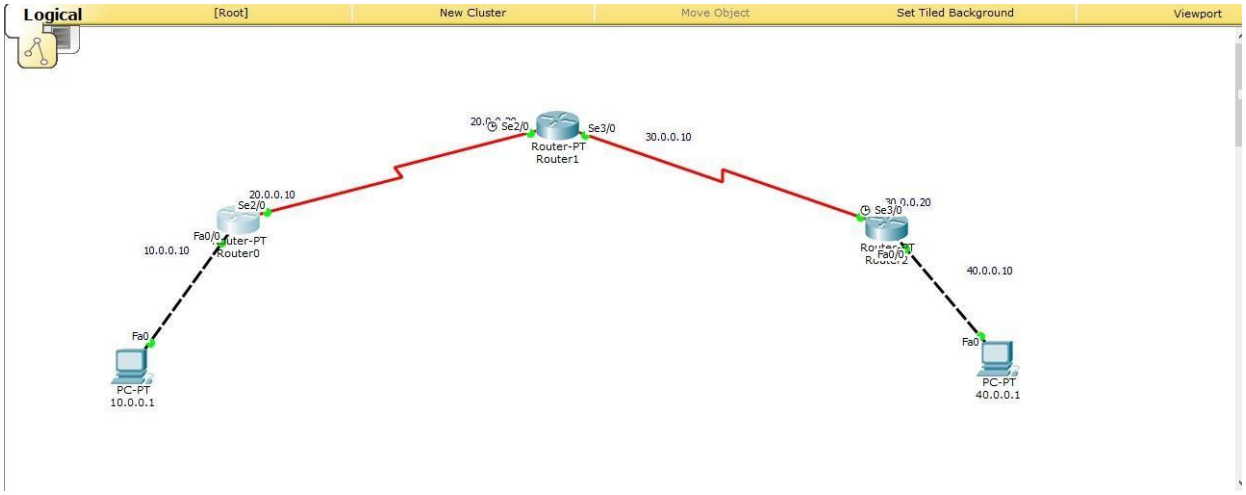
* A default route is the route that takes effect when no other route is available for an IP destination address.
* If the destination address is not local, the device checks its routing table. If the remote destination subnet is not present in routing table, the packet is forwarded to the next hop towards destination using the default route.
* The default route generally has a next hop address of another routing device, which performs the same process.
* The process repeats until a packet is delivered to the destination
* whereas static routing refers to specifying

Date __/__/__
Page _____

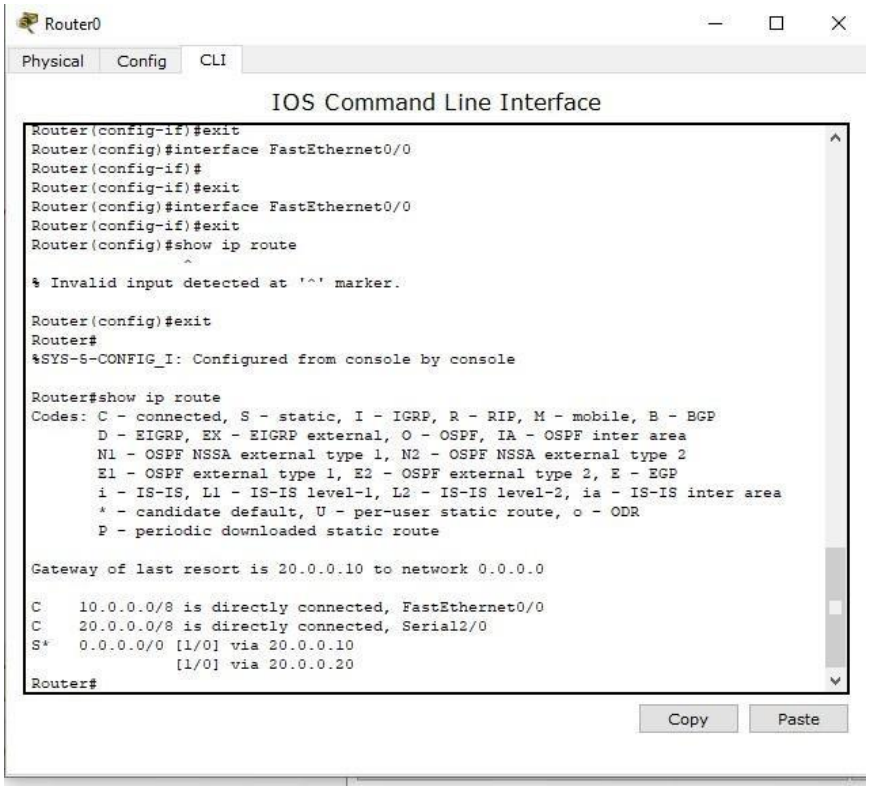
A route for a given destination IP address.

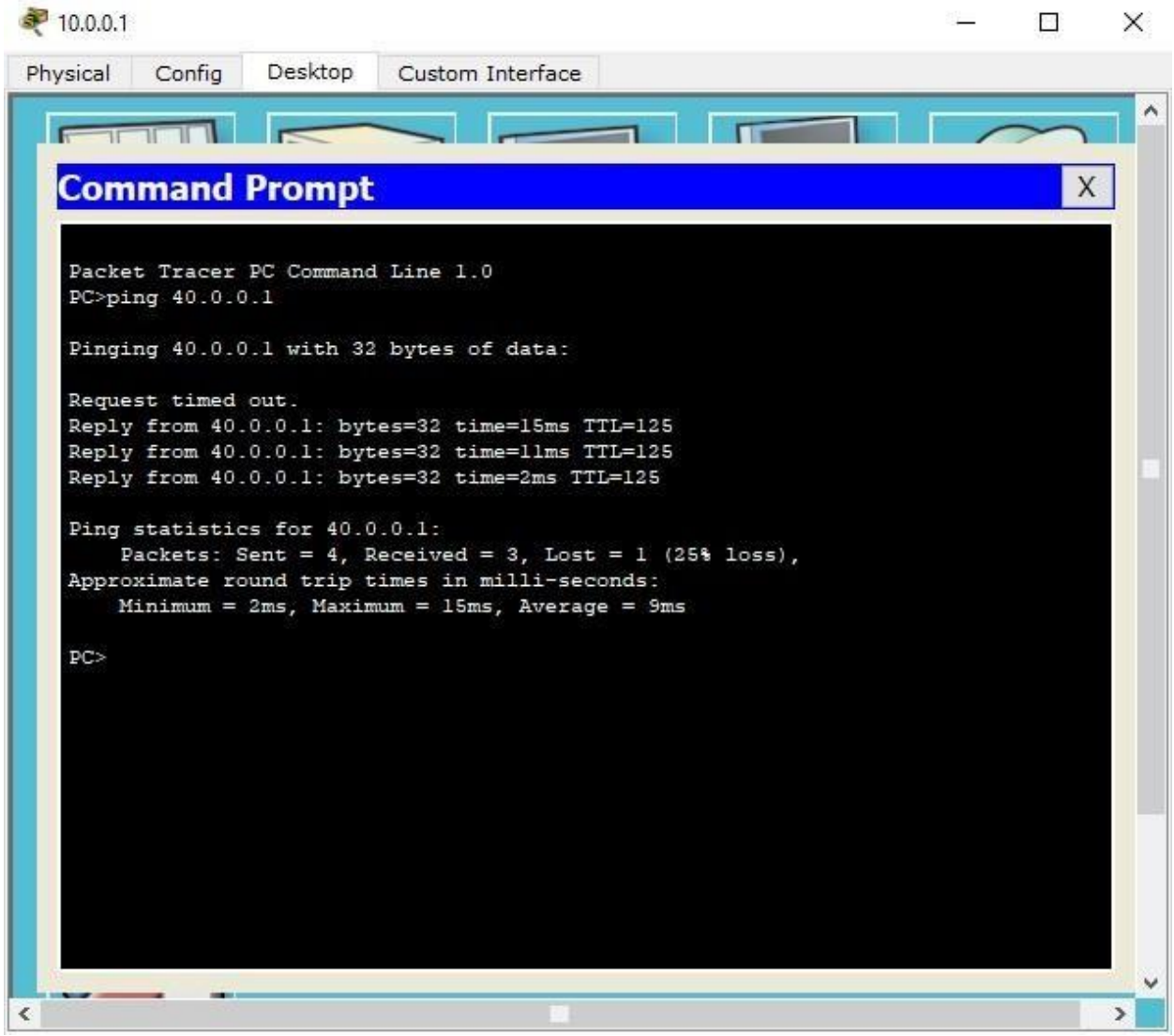
* The destination IP address of a packet is checked. For a given destination IP address the next hop is stored in routing table. And packets are sent to that destination IP.

Topology:



Result:




10.0.0.1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 40.0.0.1: bytes=32 time=15ms TTL=125
Reply from 40.0.0.1: bytes=32 time=11ms TTL=125
Reply from 40.0.0.1: bytes=32 time=2ms TTL=125
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 15ms, Average = 9ms
PC>