

# EXPERIMENT-3

Configure default route, static route to the Router.

13/7/23  
SURYA Gold  
Date \_\_\_\_\_ Page \_\_\_\_\_

## Experiment-3

**Aim:-**  
Configure default route and static route to the router.

**Topology:**

```
graph LR
    R1["Router 1  
20.0.0.10  
10.0.0.10"] --- R2["Router 2  
20.0.0.20  
30.0.0.10"]
    R2 --- R3["Router 3  
30.0.0.20  
10.0.0.10"]
    ED1["End device 1  
10.0.0.1"] --- R1
    ED2["End device 2  
40.0.0.1"] --- R3
```

**Procedure:**

- ① Add two end devices and three routers to the workspace.
- ② Connect routers through Serial DTE cable and end devices and routers through copper crossover cable.
- ③ Configure IP addresses of end devices, and  
IP address of End device 1: 10.0.0.1  
IP address of End device 2: 40.0.0.1
- ④ Configure routers. Use the following commands to set IP address to routers.

```
Router > enable
Router# config t
Router(config)# interface <port>
Router(config-if)# ip address <ip address> <subnet mask>
```

Router(config-if)# no shut

Router(config-if)# exit

5) Set gateways for end devices

End device 1: 10.0.0.10

End device 2: 40.0.0.10

6) 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 sub networks 10.0.0.0 and 40.0.0.0

ip route 0.0.0.0 0.0.0.0 20.0.0.20

ip route 0.0.0.0 0.0.0.0 30.0.0.20

7) For router2, we need to mention the ip route.

ip route ~~30.0.0.0~~ 255.0.0.0 30.0.0.10

ip route 10.0.0.0 255.0.0.0 20.0.0.10

8) 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 20.0.0.10 to network 0.0.0.0

C 10.0.0.0/8 is directly connected, FastEthernet0/0

C 20.0.0.0/8 is directly connected, Serial2/0

S\* 0.0.0.0/0 [1/0] via 20.0.0.10

[1/0] via 20.0.0.20

### Observation:

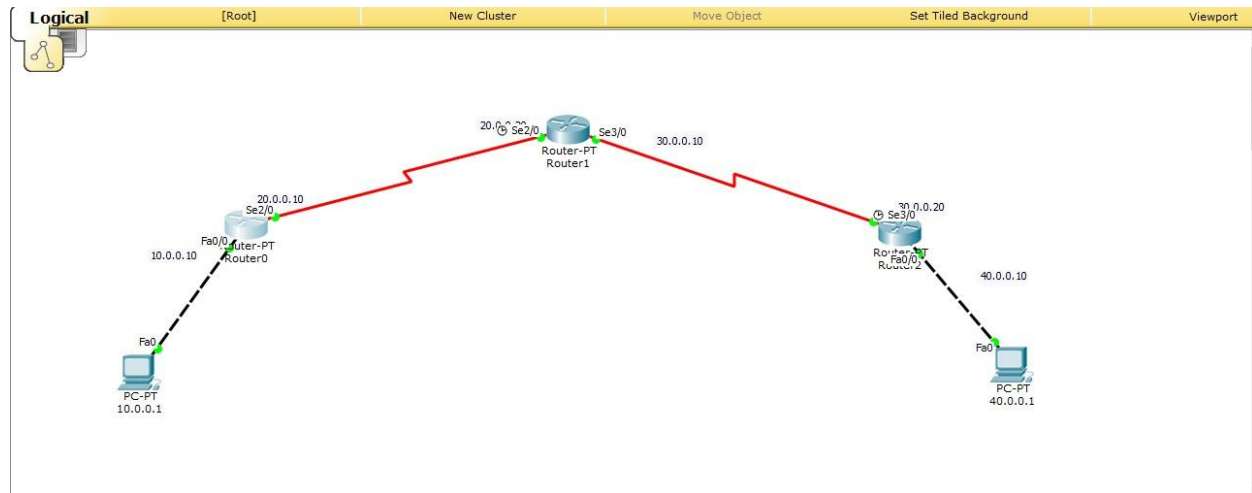
Default route refers to the route taken when no other route is available for the given IP destination address.

When a packet is received, it is decapsulated and destination IP address of packet is checked. If there is no registered path to the destination IP address, the packet is transmitted onto the default route.

Static routing refers to specifying a route that ~~that~~ 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 the routing table.

## Topology:



## Result:

Router0

Physical Config CLI

### IOS Command Line Interface

```
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#exit
Router(config)#show ip route
^
% Invalid input detected at '^' marker.

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
        i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
        * - candidate default, U - per-user static route, o - ODR
        P - periodic downloaded static route

Gateway of last resort is 20.0.0.10 to network 0.0.0.0

C    10.0.0.0/8 is directly connected, FastEthernet0/0
C    20.0.0.0/8 is directly connected, Serial2/0
S*   0.0.0.0/0 [1/0] via 20.0.0.10
      [1/0] via 20.0.0.20

Router#
```

Copy Paste

10.0.0.1

Physical Config Desktop Custom Interface

## Command Prompt

```
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>
```