

LAB 2 – 16/10/2024

16/10

Expt 2:

Aim – To observe the various error messages displayed while connecting 2 routers of different networks.
Configure IP address to routers & explore these messages – ping responses, destination unreachable, request timed out, reply.

Topology –

Router0 with 2 interfaces:

- FastEthernet Fa0/0 – IP 10.0.0.1
- Serial Se2/0 – IP 30.0.0.1

Router1 with 2 interfaces:

- FastEthernet Fa0/0 – IP 20.0.0.1
- Serial Se2/0 – IP 30.0.0.2

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PC0 connected to Fa0/0 of Router0:

- IP 10.0.0.2
- Default Gateway 10.0.0.1 (For all PCs connected to the line 10.0.0.0)

PC1 connected to Fa0/0 of Router1:

- IP 20.0.0.2
- Default Gateway 20.0.0.1 (For all PCs connected to the line 20.0.0.0)

PC0 is on the network 10.0.0.1 & PC1 is on the network 20.0.0.1. 2 routers used to communicate.

Procedure –

For Router0:

```

router>enable
Router# config terminal
Router(config)# interface fastEthernet 0/0
Router(config-if)# ip address 10.0.0.1 255.0.0.0
Router(config-if)# no shutdown
Router(config-if)# exit
Router(config)# interface serial 2/0
Router(config-if)# ip address 30.0.0.1 255.0.0.0
Router(config-if)# no shut
Router(config-if)# exit
    
```

Similarly for Router1 also.

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Observation -

~~Testing~~ For PC0 : In Command Prompt
 PC > ping 20.0.0.2
 Destination host unreachable. [Error]

∴ For Router 0 :-

```
Router > enable
Router # config terminal
Router (config) # ip route 20.0.0.0 255.0.0.0 30.0.0.2
Router (config) # exit
Router # show ip route
```

For Router 1 :-

```
Router > enable
Router # show ip route
Router # config terminal
Router (config) # ip route 10.0.0.0 255.0.0.0 30.0.0.1
Router (config) # exit
Router # show ip route
S 10.0.0.0/8 [1/0] via 30.0.0.1
Router # exit
```

PC0 command Prompt :-

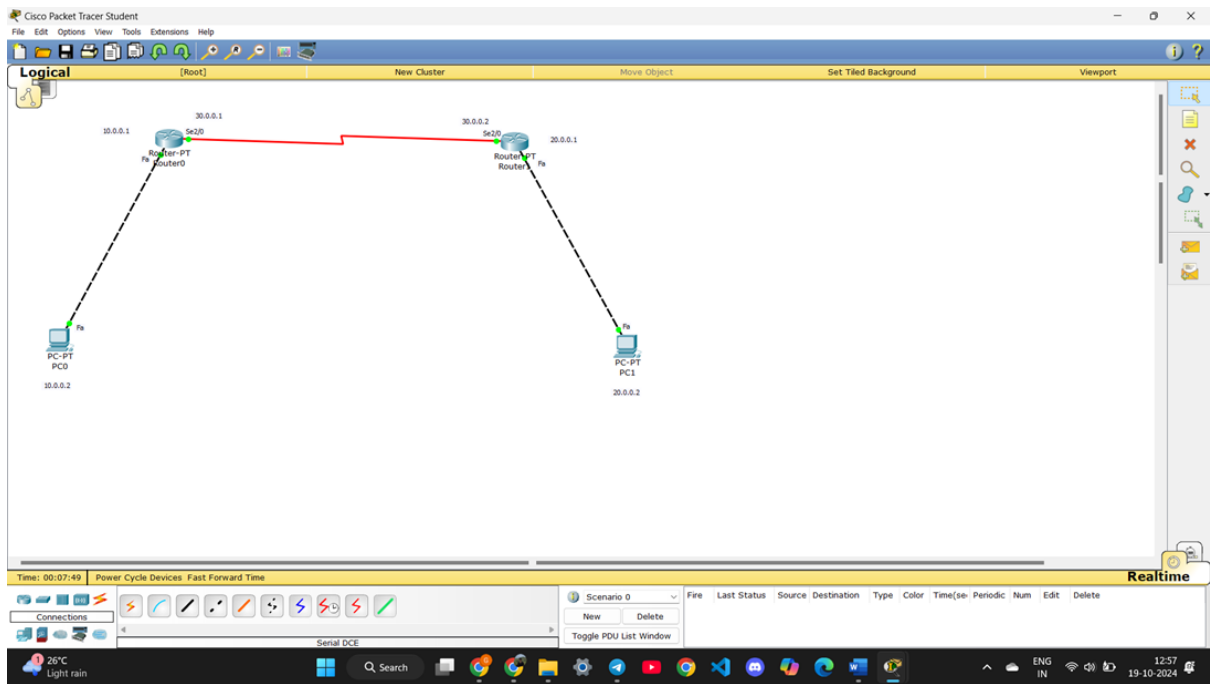
PC > ping 30.0.0.2

Pinging 30.0.0.2 with 32 bytes of data:

Reply from 30.0.0.2 : bytes = 32 time = 1ms TTL = 254
 ——— 4 times total

Ping statistics for 30.0.0.2 :

Packets : Sent = 4, Received = 4, Lost = 0 (0% loss)





Router0



Physical

Config

CLI

IOS Command Line Interface

```
Router>enable
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up

Router(config-if)#exit
Router(config)#interface serial 2/0
Router(config-if)#ip address 30.0.0.1 255.0.0.0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to up
|
```

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