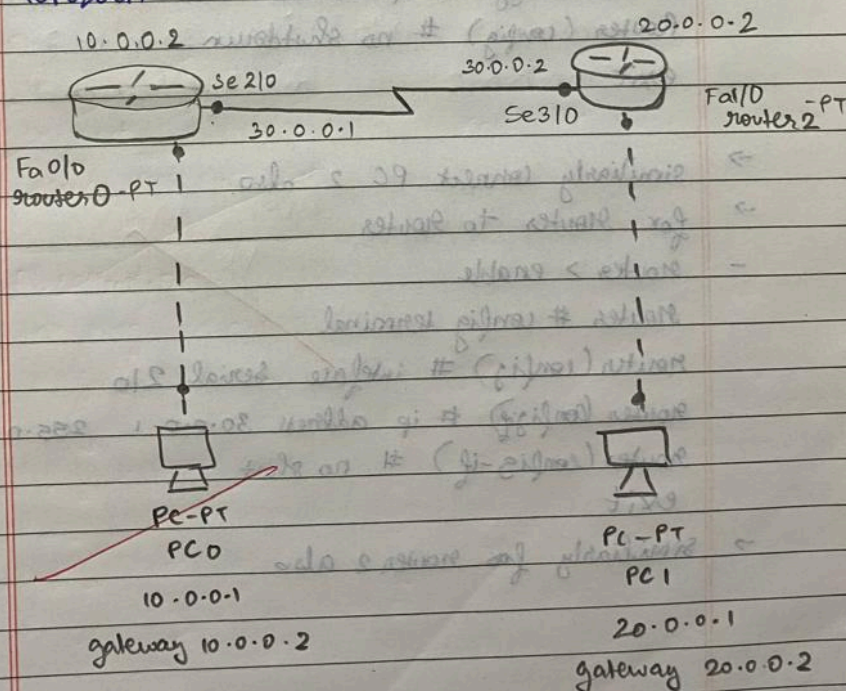# Lab 3 - 16/10/24

LAB - 3

Experiment 2.

Configure IP address to routers in packet tracer.
Explore the following messages : ping responses,
destination unreachable, request timed out, reply.

Aim :

To connect two routers serially & connect end
devices to sep respective routers

TOPOLOGY :

10.0.0.2   20.0.0.2
            Se 2|0   30.0.0.2   Fa1/0 -PT
            30.0.0.1   Se3|0   router2
Fa0|0
router0-PT

PC-PT
PC0

10.0.0.1

gateway 10.0.0.2

PC-PT
PC1

20.0.0.1

gateway 20.0.0.2

PROCEDURE :

→ Add two generic PC's & two generic routers in the workspace

→ Give the pc's a default gateway & IP address.

→ each PC is connected with a copper wire to the respective router.

→ click on the router & go to CLI commands.

Router > enable

Router # config terminal

Router (config) # interface fastethernet 0/0

Router (config) # ip address 10.0.0.2 255.0.0.0

Router (config) # no shutdown

exit

→ similiarly connect PC 2 also

→ for router to router

– router > enable

router # config terminal

router (config) # inteface serial 2/0

router (config) # ip address 30.0.0.1 255.0.0.0

router (config-if) # no shut

exit

→ similiarly for router 2 also

OBSERVATION :

→ On pinging PC1 from PC0 we are unreachable.

→ On pinging router 0 from PC0 message packets are sent.

→ On pinging router 1 from PC0 it is unreachable.

∴ from the end devices we are not able to send or recieve messages packets through the routers.

Experiment 3

2b) Aim :

Configure default route, static route to router.

→ Same as prev.

Procedure :

CLI :

router (config) # ip route 20.0.0.0 25.0.0.0 30.0.0.2

router # show ip route

10.0.0.0/8 is directly connected. fast ethernet o/o

20.0.0.0/8 [1/0] via 30.0.0.2

30.0.0.0/8 is directly connected.

16/10/24

Logical [Root]

New Cluster Move Object Set Tiled Background Viewport

Router0

Physical | Config | CLI

IOS Command Line Interface

```
Router(config)#interface FastEthernet1/0
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

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

Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
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 not set

C    10.0.0.0/8 is directly connected, FastEthernet0/0
C    30.0.0.0/8 is directly connected, Serial2/0
Router#
```

Copy   Paste

10.0.0.2   30.0.0.1   30.0.0.2   20.0.0.2
Se2/0   Se3/0
Fa0/Router-PT   Router-PT
Router0   Fa1/0Ter2

Fa0   Fa0

PC-PT   PC-PT
PC0   PC1

10.0.0.1   20.0.0.1
gateway 10.0.0.2   gateway 20.0.0.2

Time: 00:38:52 Power Cycle Devices Fast Forward Time   Realtime

Connections   Copper Cross-Over

Scenario 0   Fire Last Status Source Destination Type Color Time (sec) Periodic Num Edit Delete
New   Delete
Toggle PDU List Window

Logical [Root]

New Cluster Move Object Set Tiled Background Viewport

PC0

Physical | Config | Desktop | Custom Interface

Command Prompt

```
Packet Tracer PC Command Line 1.0
PC>ping 30.0.0.1

Pinging 30.0.0.1 with 32 bytes of data:

Reply from 10.0.0.2: Destination host unreachable.
Reply from 10.0.0.2: Destination host unreachable.
Reply from 10.0.0.2: Destination host unreachable.
Reply from 10.0.0.2: Destination host unreachable.

Ping statistics for 30.0.0.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>
```

10.0.0.2   20.0.0.2
Se2/0   Se3/0
Fa0/Router-PT   Router-PT
Router0   Fa1/0Ter2

Fa0   Fa0

PC-PT   PC-PT
PC0   PC1

10.0.0.1   20.0.0.1
gateway 10.0.0.2   gateway 20.0.0.2

Time: 00:23:36 Power Cycle Devices Fast Forward Time   Realtime

Connections   Copper Cross-Over

Scenario 0   Fire Last Status Source Destination Type Color Time (sec) Periodic Num Edit Delete
New   Delete
Toggle PDU List Window

Top screenshot - Command Prompt (PC0):

```
PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=1ms TTL=255
Reply from 10.0.0.2: bytes=32 time=0ms TTL=255
Reply from 10.0.0.2: bytes=32 time=0ms TTL=255
Reply from 10.0.0.2: bytes=32 time=0ms TTL=255

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 30.0.0.1

Pinging 30.0.0.1 with 32 bytes of data:

Reply from 30.0.0.1: bytes=32 time=0ms TTL=255
Reply from 30.0.0.1: bytes=32 time=0ms TTL=255
Reply from 30.0.0.1: bytes=32 time=0ms TTL=255
Reply from 30.0.0.1: bytes=32 time=0ms TTL=255

Ping statistics for 30.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```

Bottom screenshot - Command Prompt (PC0):

```
Reply from 30.0.0.1: bytes=32 time=0ms TTL=255
Reply from 30.0.0.1: bytes=32 time=0ms TTL=255
Reply from 30.0.0.1: bytes=32 time=0ms TTL=255

Ping statistics for 30.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 30.0.0.2

Pinging 30.0.0.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 30.0.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 20.0.0.2

Pinging 20.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: Destination host unreachable.
Reply from 10.0.0.2: Destination host unreachable.
Reply from 10.0.0.2: Destination host unreachable.
Reply from 10.0.0.2: Destination host unreachable.

Ping statistics for 20.0.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>
```

Screenshot 1 — PC0 Command Prompt:

```
Request timed out.
Reply from 20.0.0.1: bytes=32 time=3ms TTL=126
Reply from 20.0.0.1: bytes=32 time=4ms TTL=126
Reply from 20.0.0.1: bytes=32 time=3ms TTL=126

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 4ms, Average = 3ms

PC>ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Reply from 20.0.0.1: bytes=32 time=4ms TTL=126
Reply from 20.0.0.1: bytes=32 time=2ms TTL=126
Reply from 20.0.0.1: bytes=32 time=4ms TTL=126
Reply from 20.0.0.1: bytes=32 time=4ms TTL=126

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 4ms, Average = 3ms

PC>
```

Screenshot 2 — PC1 Command Prompt:

```
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=3ms TTL=126
Reply from 10.0.0.1: bytes=32 time=6ms TTL=126
Reply from 10.0.0.1: bytes=32 time=5ms TTL=126
Reply from 10.0.0.1: bytes=32 time=4ms TTL=126

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 6ms, Average = 4ms

PC>
```