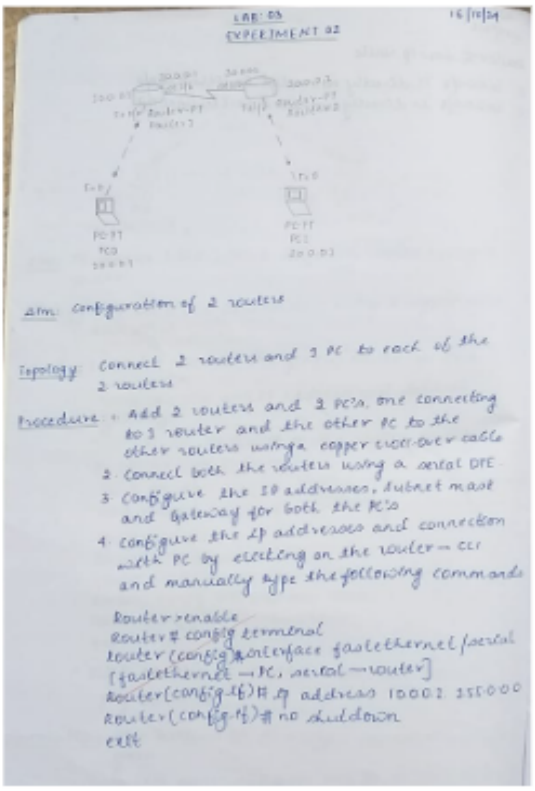
EXPERIMENT-3

Question 3:
Configure default route, static route to the Router

Observation:



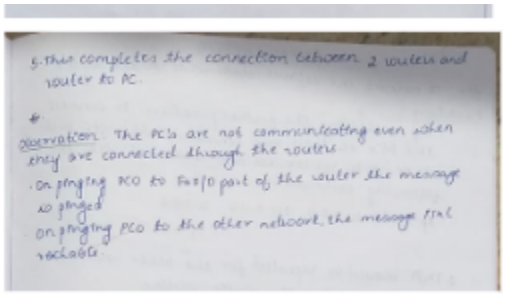
LAB: 05 16/10/24
EXPERIMENT 02

Aim: configuration of 2 routers

Topology: Connect 2 routers and 1 PC to each of the 2 routers

Procedure:
1. Add 2 routers and 2 PC's, one connecting to 1 router and the other PC to the other routers using a copper cross-over cable
2. Connect both the routers using a serial DTE
3. Configure the IP addresses, subnet mask and Gateway for both the PC's
4. Configure the IP addresses and connection with PC by clicking on the router → CLI and manually type the following commands

```
Router>enable
Router# config terminal
Router(config)#interface fastethernet/serial
[fastethernet → PC, serial → router]
Router(config-if)# ip address 10.0.0.2 255.0.0.0
Router(config-if)# no shutdown
exit
```



5. Thus completes the connection between 2 routers and router to PC.

Observation: The PC's are not communicating even when they are connected through the routers
- On pinging PC0 to Fa0/0 port of the router the message is ginged
- On pinging PC0 to the other network, the message final reachable

EXPERIMENT 05(a)

Aim: To connect the default, static route to the router

Procedure:

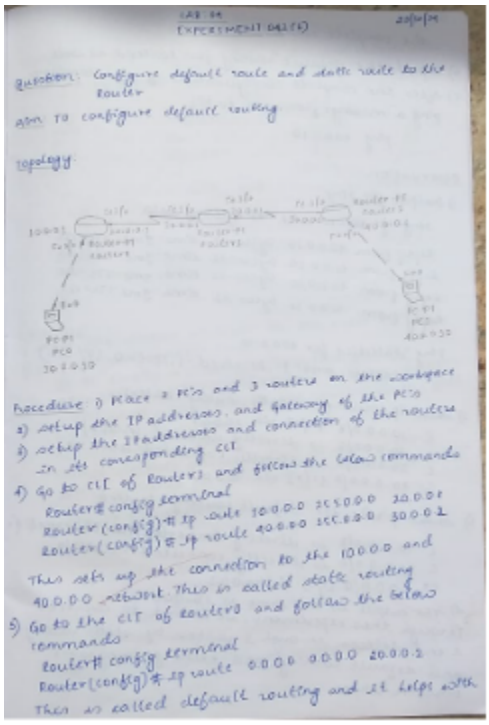
1. By continuing the previous procedure, to connect the PC's so they can communicate with each other. go to router, CLI and continue with the following commands

ip route 20.0.0.0 255.0.0.0 30.0.0.2

2. This should be repeated for the other router, which completes the static routing

Observation: The PC's are now communicated with each other

On pinging



LAB 04

EXPERIMENT 04(b)

Question: Configure default route and static route to the Router

Aim: To configure default routing

Topology:

Procedure: 1) Place 2 PC's and 3 routers on the workspace

2) setup the IP addresses and Gateway of the PC's

3) setup the IP addresses and connection of the routers in its corresponding CLI

4) Go to CLI of Router1 and follow the below commands

Router# config terminal

Router(config)# ip route 10.0.0.0 255.0.0.0 20.0.0.1

Router(config)# ip route 40.0.0.0 255.0.0.0 30.0.0.2

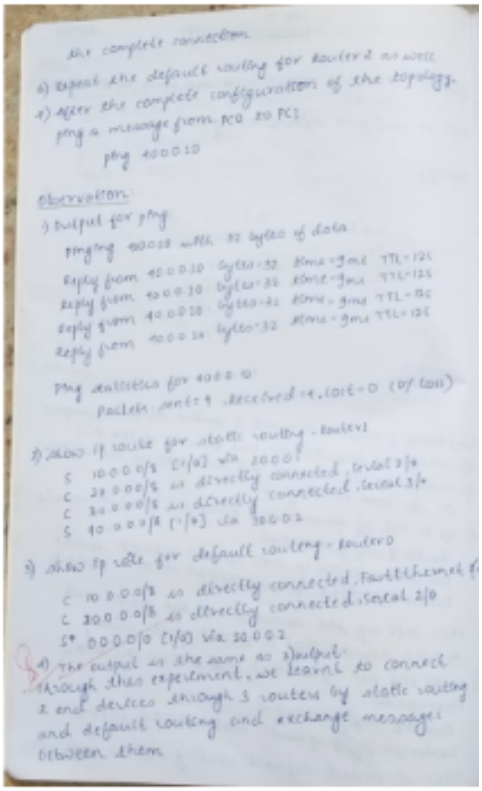
This sets up the connection to the 10.0.0.0 and 40.0.0.0 network. This is called static routing

5) Go to the CLI of routers and follow the below commands

Router# config terminal

Router(config)# ip route 0.0.0.0 0.0.0.0 20.0.0.2

This is called default routing and it helps with



the complete connection

6) Repeat the default routing for router1 as well

7) After the complete configuration of the topology ping a message from PC0 to PC1

ping 40.0.0.10

Observation:

1) output for ping

pinging 40.0.0.10 with 32 bytes of data:

Reply from 40.0.0.10: bytes=32 time=9ms TTL=125
Reply from 40.0.0.10: bytes=32 time=9ms TTL=125
Reply from 40.0.0.10: bytes=32 time=9ms TTL=125
Reply from 40.0.0.10: bytes=32 time=9ms TTL=125

Ping statistics for 40.0.0.10:
Packets: sent=4, Received=4, Lost=0 (0% loss)

2) show ip route for static routing - router1

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

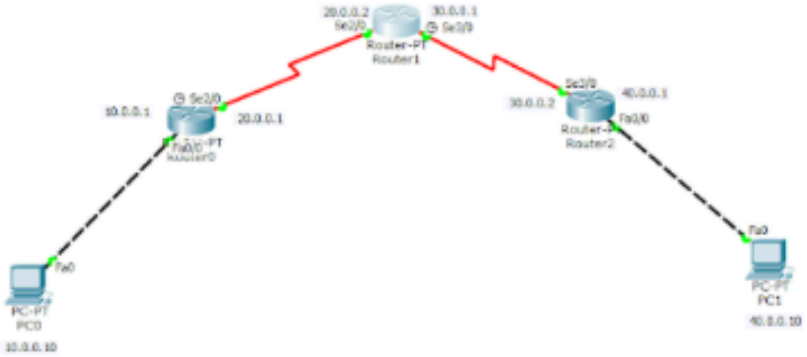
3) show ip route for default routing - router0

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

4) The output is the same as 2) output

Through this experiment, we learnt to connect 2 end devices through 3 routers by static routing and default routing and exchange messages between them

Screenshot of the topology:



Screenshot of the output:

```
S    10.0.0.0/8 [1/0] via 20.0.0.1
C    20.0.0.0/8 is directly connected, Serial2/0
C    30.0.0.0/8 is directly connected, Serial3/0
S    40.0.0.0/8 [1/0] via 30.0.0.2
```

```
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 20.0.0.2
```

```
PC>ping 40.0.0.10

Pinging 40.0.0.10 with 32 bytes of data:

Reply from 40.0.0.10: bytes=32 time=9ms TTL=126
Reply from 40.0.0.10: bytes=32 time=9ms TTL=126
Reply from 40.0.0.10: bytes=32 time=6ms TTL=126
Reply from 40.0.0.10: bytes=32 time=11ms TTL=126

Ping statistics for 40.0.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```