

22-6-13

classmate

Date _____

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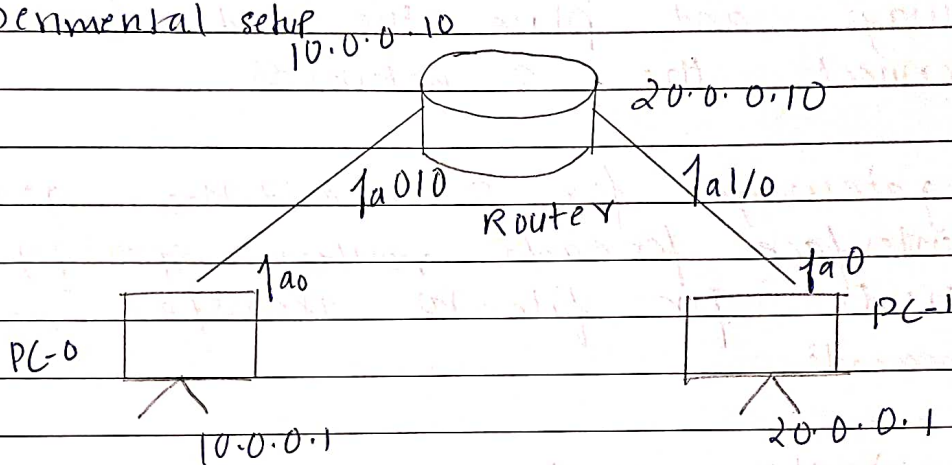
Experiment - 2

Aim:

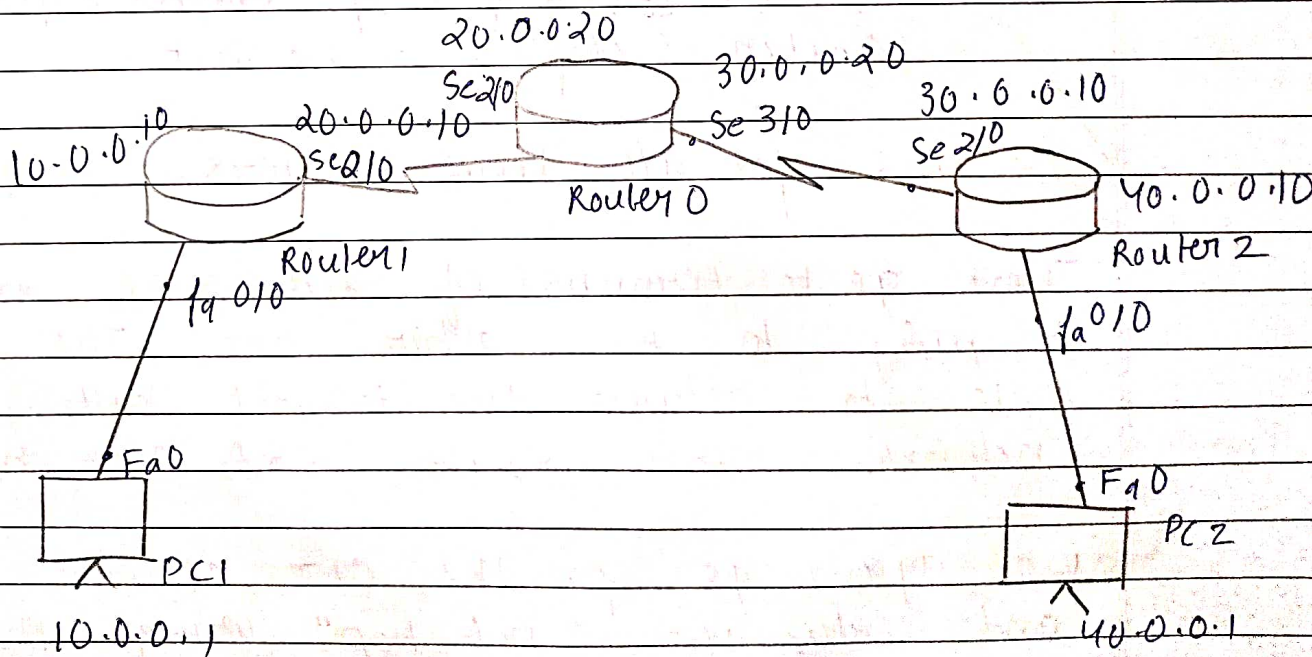
Configure IP Address to routers in packet tracer
Explore the following messages: ping responses
destination unreachable, request timed out, reply

Topology:

Experimental setup



3 Router Topology:



Procedure:

Take 2 PC and place them as shown in the topology, 2 different IP address (10.0.0.1 and 40.0.0.1) as they belong to 2 different networks.

Place 2 routers belonging to these 2 networks (10.0.0.10 and 40.0.0.10) being their gateways and place the 3rd router in between to connect the 2 networks.

Set gateways for 2 PCs and then going to CLI interface for each router specify the IP route for file transfer using the commands

```
Router> enable
```

```
Router> # err config terminal
```

```
Router config: interface <port>
```

```
Router config-if: Ip address <ip> <subnet mask>
```

```
Router (config): no shut
```

Do this for all three routers

Then go to terminal of either PC and try to ping to the other one, The message fails to deliver due to not setting up network static routes and next hop.

We again go for the CLI of each router and setup the "next hop" using the commands.

> ip route <network-id> <mask> <next-hop>
 > ip route 40.0.0.0 255.0.0.0 20.0.0.20
 (for router1)

This is done so that router recognizes which pathway to take when packet is received for particular destination.

'Result:

(i) > ping 40.0.0.1

pinging 40.0.0.1 with 32 bytes of data

Reply from 10.0.0.10 : Destination host unreachable

Reply from 10.0.0.10 : Destination host unreachable

Reply from 10.0.0.10 : Destination host unreachable

Reply from 10.0.0.10 : Destination host unreachable

Reply from 10.0.0.10

Ping statistics:

Packets sent = 4 ; Received = 0 ; loss = 4 (100% loss)

(ii) > ping 40.0.0.1

pinging 40.0.0.1 with 32 bytes of data

Request timed out

Reply from 40.0.0.10 bytes = 32 time = 2ms TTL

Reply from 40.0.0.10 bytes = 32 time = 2ms TTL

Reply from 40.0.0.10 bytes = 32 time = 2ms TTL

Ping statistics

Packets sent = 4 ; Received = 1 ; loss = 1 (25% loss)

Observation

The router connects LAN to the Internet. It connects "different networks" with different ids

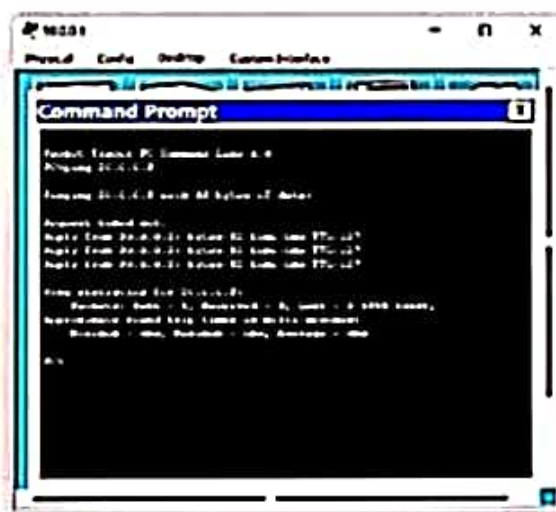
Packets are forwarded to the destination through network hopping

Serial ports are used to connect 2 routers the connecting cables

9/10

Show ip route

28/6/23





```
Router>enable
Router#configure terminal
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.8.8.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip address 10.8.8.2 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#end
```