22-6-13

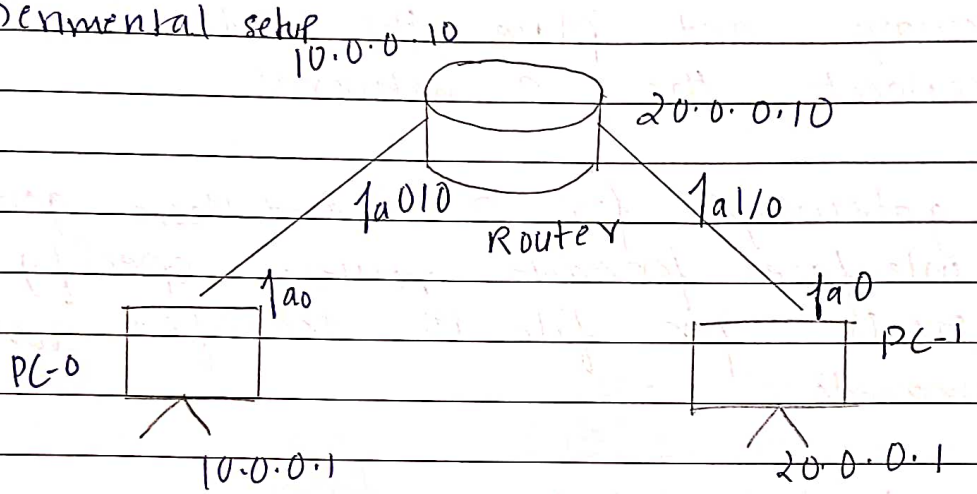
Experiment - 7

Aim:

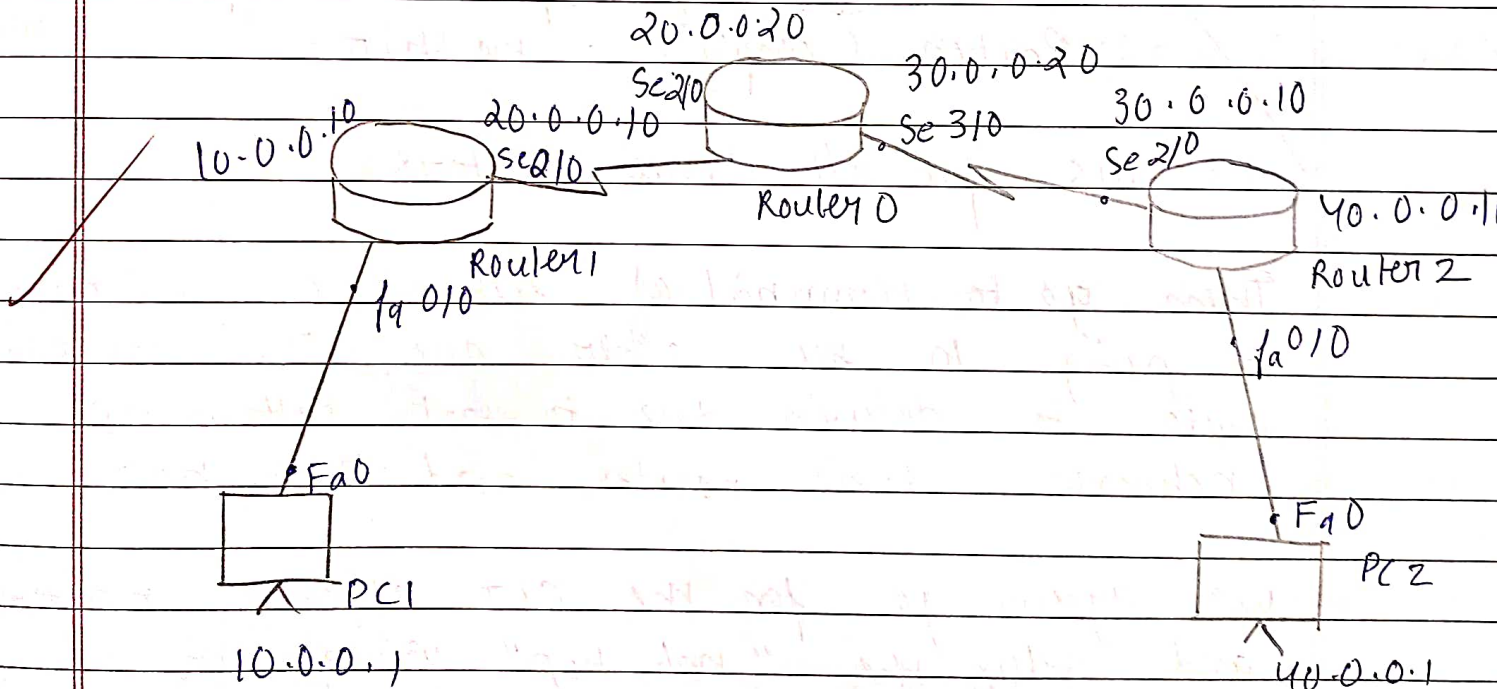
Configure IP Address to routers in packet tracer Explore the following messages: ping responses destination unreachable, request timed out, reply

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 the CLI interface for each router specify the IP route for file to transfer using the commands

Router> enable
Router > # ~~en~~ 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 "nat-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 40.0.01 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

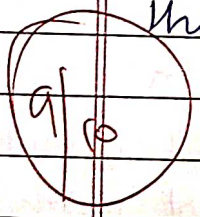
Ping statistics
Packets sent = 4; Received = 1, loss = 1 (25% loss)

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



Show ip route

28/6/23