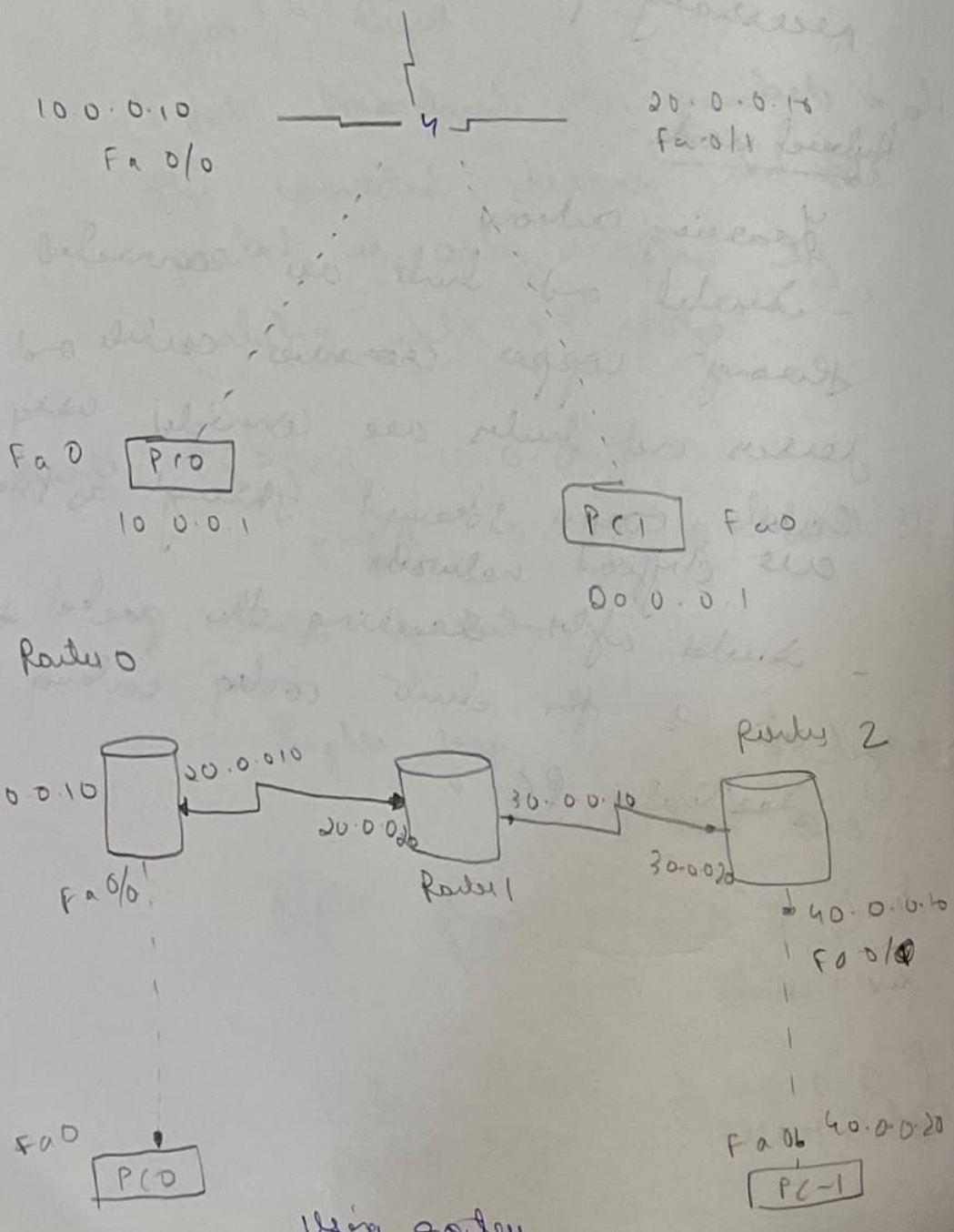
Lab Work - 2.

Aim: Configure IP address to Routers in packet tracer to explore the following messages: Ping response, destination unreachable, request timed out, reply.

Topology

→ Using single router two PC's



Using routers

Procedure:-

→ Using single router two PC's

i) Place a generic router and add two generic PC's in your workspace.

ii) configure the IP address of each PC and in the configuration tab, under setting set gateway for both PCs to the router.

iii) Click on the generic router and go to the CLI tab and enter the following command to set up connection between PC's and generic router through gateway 10.0.0.10

→ enable

config t

(config)# interface fast ethernet 0/0

(config-if)# ip address 10.0.0.10 255.0.0.0

no shut

end

similarly set up connection between PC1 and the router gateway 20.0.0.10

Once we enter no shut both turn the amber light between the PC and router green indicating that the two devices are ready to use.

Simulation mode: Add a simple PDU by selecting the PC's and clicking on add

copies from right panel.

Real time mode : Select the PC you want to send the packet from which is PC0 and go the command prompt from desktop tab. Specify destination address & response is sent from destination PC to source PC

Using three routers and two PC's

i) Place 3 generic routers and two generic PC's in workspace.

ii) connect routers and PC using copper crossover wire.

iii) Click on each PC and configure the IP address and gateway of PCs

For connecting two routers

Click on Router 0 go to CLI and write the following command.

→ en
→ enable
→ config t
→ interface serial 2/0
→ ip address 20.0.0.10 255.0.0.0
→ no shut
→ exit.

and a Router 1 and go to CLI and write the following command.

→ enable
→ config t
→ interface serial 2/0
→ ip address 20.0.0.20 255.0.0.0
→ no shut.

After this the red light between router turn green.

For connecting two devices (Router and PC)

i) Our IP address is configured.

Open CLI of Router 0 and write the following commands.

→ enable
→ config t
→ interface fastethernet 0/0
→ ip address 10.0.0.10 255.0.0.0
→ no shut.

The red light turn green means that the router is ready for communication.

Testing router 0 & network 30/40

→ enable
→ config t
→ interface ~~fastethernet~~ to serial 2/0 40.0.0.10

→ ip route 30.0.0.0 255.0.0.0 20.0.0.2
→ end.
→ show ip route.

Similarly do this for both the routers

Simulation mode: Add a simple PDU by selecting two PCs and clicking on auto capture/play.

Routers: Select the PC PC0 and go to command prompt and ping the router 0 and repeat it for router 1 and router 2 finally ping PC1

Observation

→ 1 Router:
When PC0 pings PC1 for the first time we get request timed out
Now if we ping PC1 we get 4 packets without any packet loss.

→ 3 Routers:
Before doing the network we get the result as destination host unreachable
After doing the router we get clear statistics as the result.

Results:

Using single router

Ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data

Request timed out.

Reply from 20.0.0.1 bytes: 32 time<1ms

Reply from 20.0.0.1 bytes: 32 time<1ms(2)

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Ping Statistics for 20.0.0.1

packets = 4 received = 4 lost = 0

Using three routers two PC's

1) Ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data

Reply from 10.0.0.10 bytes=32 time=0ms

Reply from 10.0.0.10 bytes=32 time=0ms

::

ping statistics for 40.0.0.1

Packet sent=4 received=4

lost=0.