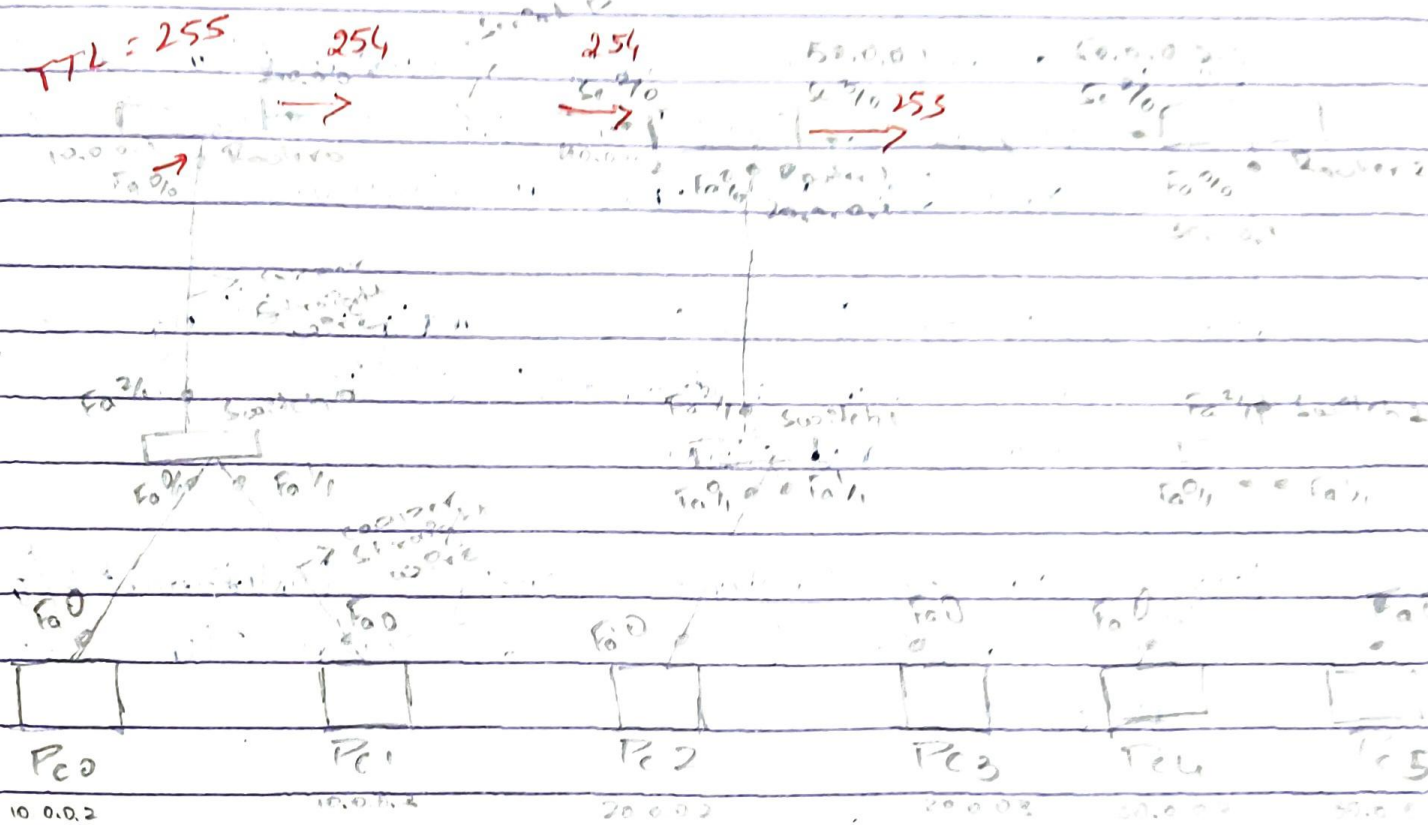


Experiment - 6

Objective :- Configure routing information Protocol in Routers

Topology :-



Procedure :-

Step 1 :- Place 3 Routers, 3 switches & 6 PC's and connect them. Router to switch using copper straight wire and switch to PC's using copper straight wire & Router to Router using Serial DCE wire

Step 2 :- Set C0 to Router0 config -> FastEthernet 0/0 set IP address as 10.0.0.1 & config -> Serial 2/0 set IP address as 10.0.0.1

Step 3:- Go to PC0 & PC1 config → setting & set gateway as 10.0.0.1 & go to fastethernet 0 set IP address as 10.0.0.2 & 10.0.0.3 respectively

Step 4:- Go to Router 1 config → Fastethernet 0/0 set IP address 20.0.0.1 & Serial 2/0 set IP address as 40.0.0.2
Serial 3/0 IP address as 50.0.0.1

Step 5:- Go to PC2 & PC3 config → setting set gateway as 20.0.0.1 & in fastethernet 0 set IP address as 20.0.0.2 & 20.0.0.3 respectively

Step 6:- Go to Router 2 config → Fastethernet 0/0 set IP address as 30.0.0.1 & Serial 2/0 set IP address as 50.0.0.2

Step 7:- Go to PC4 & PC5 config → setting set gateway as 30.0.0.1 & in fastethernet 0 set IP address as 30.0.0.2 & 30.0.0.3 respectively

Step 8:- In ~~Both~~ Router & PC's [End Devices] ^{set} ~~make~~ the Port Status to 'On' in fastethernet 0/0, Serial 2/0 & Serial 3/0

Step 1:- In Router0 CLI →

Router>enable

config terminal

router rip

network 10.0.0.0

network 40.0.0.0

exit

exit

show IP route

Step 2:- In Router1 CLI →

>enable

config terminal

router rip

network 40.0.0.0

network 50.0.0.0

network 20.0.0.0

exit

exit

show IP route

Step 3:- In Router2 CLI →

>enable

config terminal

router rip

network 50.0.0.0

network 30.0.0.0

exit

exit

show IP route.

Observation

→ All connections are successfully

Ping from 10.0.0.2 to 30.0.0.2

Pinging 30.0.0.2 with 32 bytes of data

Request timed out

Reply from 30.0.0.2: bytes=32 time=6ms TTL=125

Reply from 30.0.0.2: bytes=32 time=6ms TTL=125

Reply from 30.0.0.2: bytes=32 time=6ms TTL=125

Ping statistics for 30.0.0.2:

Packet: sent=4, Received=3, lost=1 (25% loss)

> Ping 30.0.0.2

Pinging 30.0.0.2 with 32 bytes of data

Reply from 30.0.0.2: bytes=32 time=8ms TTL=125

Reply from 30.0.0.2: bytes=32 time=7ms TTL=125

Reply from 30.0.0.2: bytes=32 time=7ms TTL=125

Reply from 30.0.0.2: bytes=32 time=7ms TTL=125

Ping statistics for 30.0.0.2:

Packet: sent=4, Received=4, lost=0 (0% loss)

Objective :- Demonstrate TTL / Life of a Packet

Procedure

Step 1 :- Construct the previous topology

Step 2 :- Create a simple PDU Source i.e. PC0 and Destination PC5 & go to simulation mode

Step 3 :- Click Auto capture / Play & select the packet when it reaches router 0, check the value of TTL in Inbound PDU, Outbound PDU

Step 4 :- Continue to press Auto-capture / Play & check the same when packet reaches all routers

Observation

1. Router- Contain information on packet fill level 3

2. TTL value decreases as it passes each router

3. Router 0

Inbound PDU

TTL : 255

Outbound PDU

TTL : 254