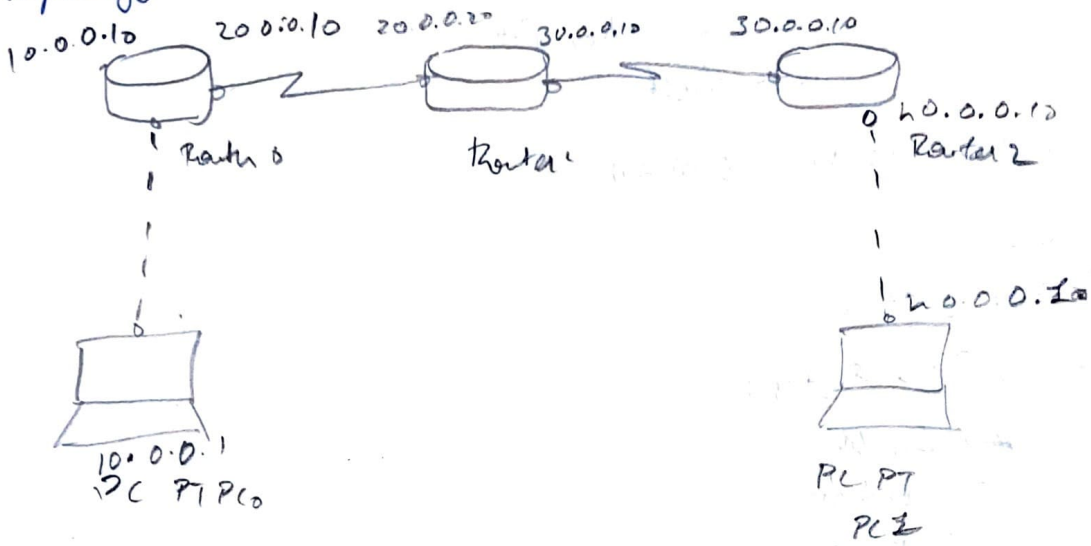
5/12/22 Expt 5

Routing Information Protocol

Aim: Configuring RIP routing protocol

Topology:



Procedure:
- place 3 generic routers & 2 generic PC's
- Connect routers to PC with copper crossover
- Connect routers with serial DCE with clock symbol
- place notes near the devices
- set IP address for PC's & their subnet mask & default gateway
- CLI of router 0 -> enable
  -> config t
  -> interface fastethernet 0/0
  -> ip address 10.0.0.10 255.0.0.0
  -> no shut
- Connection should turn green
- repeat for PC1 & router 2
- open CLI of router 0
  -> enable
  -> config t
  -> interface serial 2/0
  -> ip address 20.0.0.10 255.0.0.0
  -> encapsulation PPP
  -> clock rate 64000
  -> no shut

follow

* open CLI for router 1
  -> enable
  -> config t
  -> interface serial 2/0
  -> ip address 20.0.0.20 255.0.0.0
  -> encapsulation PPP
  -> no shut

* Connection turns green

-> exit
-> show ip route

* open CLI of router 1
  -> enable
  -> config t
  -> interface serial 3/0
  -> ip address 30.0.0.10 255.0.0.0
  -> encapsulation PPP
  -> clock rate 64000
  -> no shut
  -> exit

* open cli of router 2
  -> enable
  -> config t
  -> interface serial 2/0
  -> ip address 30.0.0.20 255.00.0
  -> en capsulation PPP
  -> no shut

* open CLI of router 1
  -> exit
  Config t router RIP
  Config t router # network 10.0.0.0
  Config - router # network 20.0.0.0
  Config - router # exit

-> show ip route

* Similarly repeat for router1 & router2 with network 20,30 & 30,40

Sim mode: Add simple PDU by selecting PC's & click auto capture

Real time mode: Select PC0 go to command prompt & select dest^n address [ping 10.0.0.10] then other addresses. finally ping PC2

Result: PC > ping 10.0.0.10

Pinging 10.0.0.10 with 32 bytes of data

Reply from 10.0.0.10: bytes=32 time=0ms TTL=255

PC > Ping 20.0.0.10

Pinging 20.0.0.10 with 32 bytes of data:

Reply from 20.0.0.10: bytes=32 time=0ms TTL=255

PC > Ping 30.0.0.1

Pinging 30.0.0.1 with 32 bytes of data:

Reply from 30.0.0.1 bytes=32 time=2ms TTL=125

Learnings : RIP is a protocol that routers can use to exchange network topology information. It is used in small to medium sized networks. A router sends the contents of its routing table to each adjacent routers every 30s.