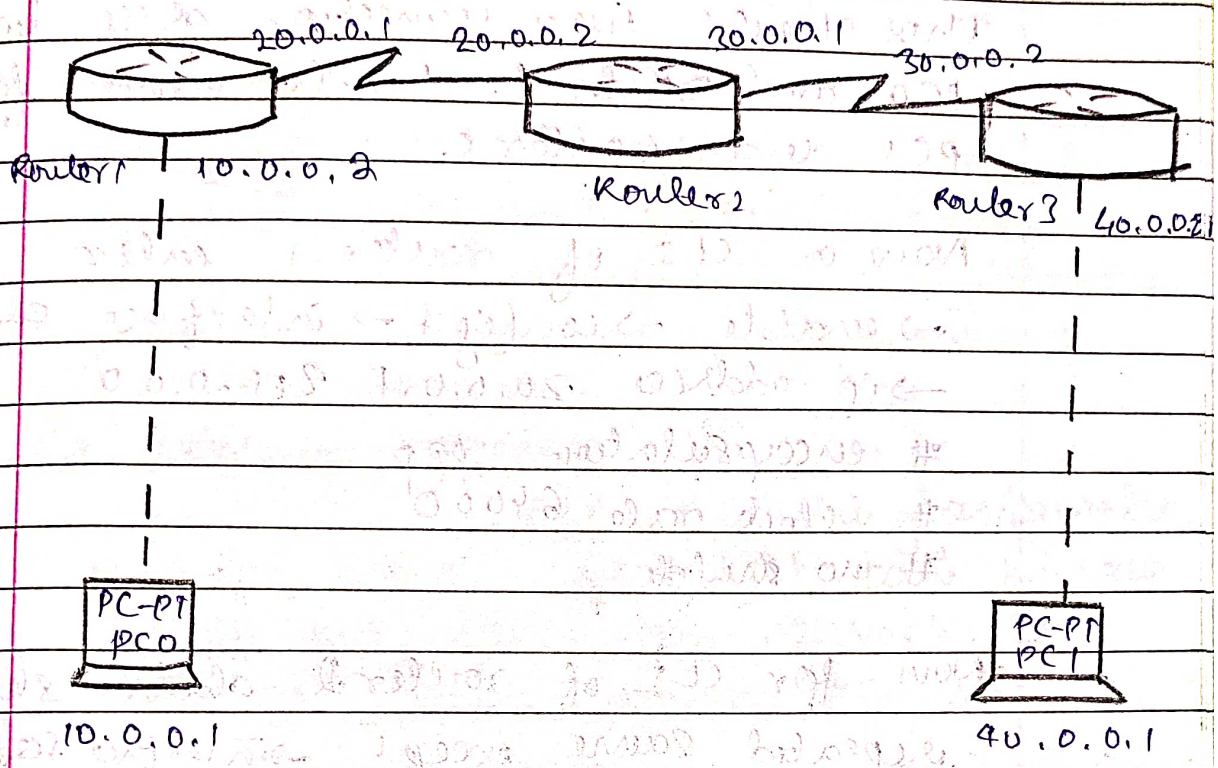
LAB-5

Thursday
Date: 08/12/2022
Page

AIM: Configuring ~~RIP~~ RIP routing Protocol in Routers.

TOPOLOGY:



PROCEDURE:

→ 3 routers and 2 PCs are placed in the workstation

→ The PC 0 is connected to Router 1 and PC1 is connected to Router 3 through copper cross-over wire.

→ 3 routers are connected to each other through Serial DCE

→ Set IP address, Subnet mask and gateway from config tab for each PC

→ The Serial DCE must have clock symbol

→ Go to CLI of Router-1 and enter commands

→ enable → config t → interface fastethernet 0/0
→ ip address 10.0.0.2 255.0.0.0
→ no shut
This should turn connection green between PC0 and router 0. Do the same for PC1 and router 5.

Now in CLI of router 1 enter
→ enable → config t → interface serial 2/0
→ ip address 20.0.0.1 255.0.0.0
encapsulation ppp
clock rate 64000
no shut

→ Now for CLI of router 2 above steps repeated same except → interface serial 3/0
→ ip address 30.0.0.1 255.0.0.0

→ Same procedure repeated for router 3.
→ enable → config t
→ interface serial 3/0
→ ip address 40.0.0.2 255.0.0.0
→ encapsulation ppp
→ clock rate 64000
→ no shut

→ Once all the green signals are visible follow the commands below for the router
→ router rip
→ network 10.0.0.0 } known networks
→ network 20.0.0.0 } are written here

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⇒ exit

* Repeat above commands for router 1 and router 2 with respective network addresses.

Observation:

- In static IP routing we need to teach the routers independently, but we make use of RIP so that routing becomes easy when large number of routers are used

* Routing outcome:

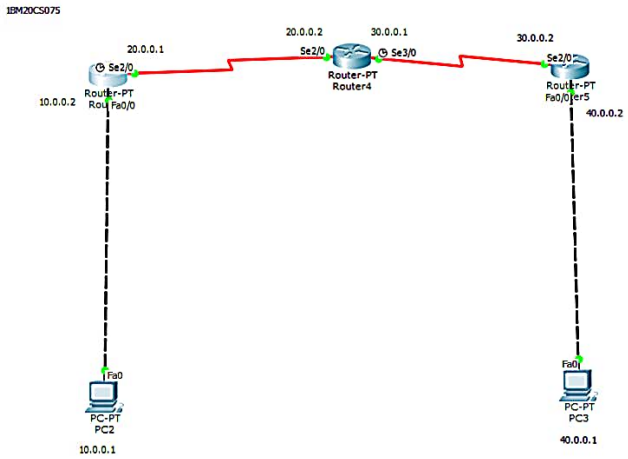
RIP is routing information protocol which find best path between source and destination network. It's a distance vector routing protocol.

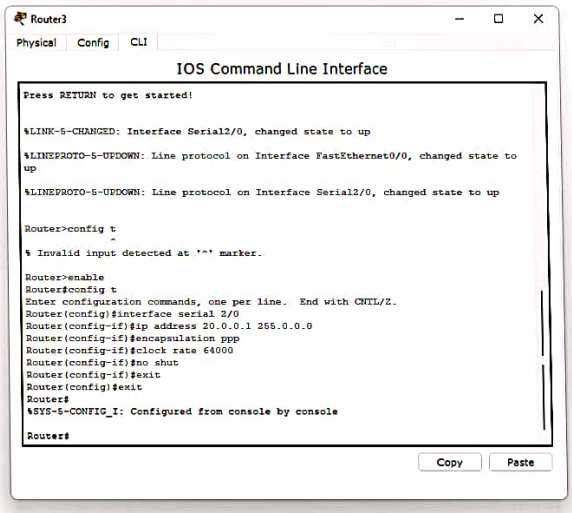
Result:-

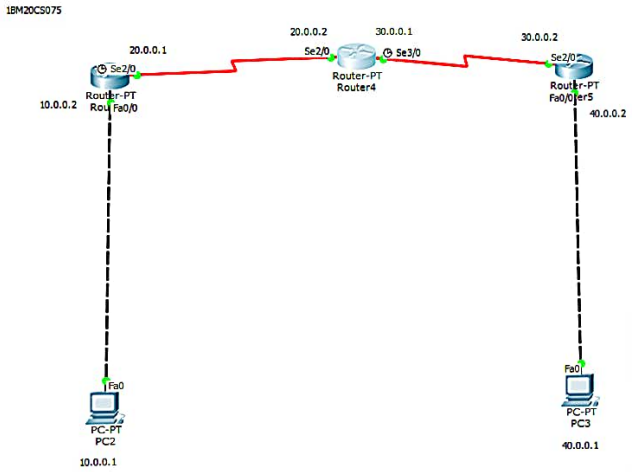
Pinging 40.0.0.1 with 32 bytes of data:

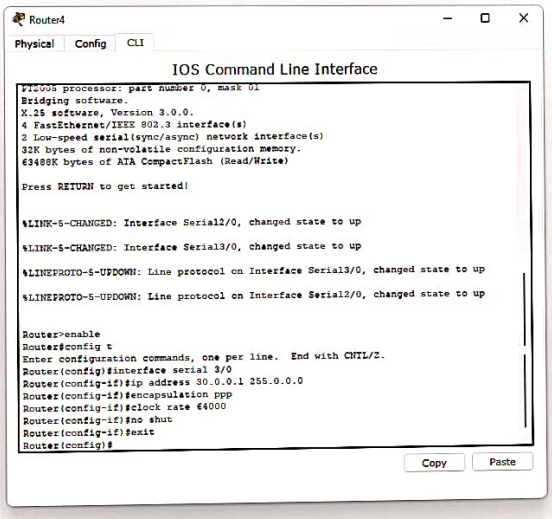
Reply from 40.0.0.1: bytes=32 time=14ms
Reply from 40.0.0.1: bytes=32 time=15ms, TTL=125
Reply from 40.0.0.1: bytes=32 time=0ms TTL=125
Reply from 40.0.0.1: bytes=32 time=16ms TTL=125

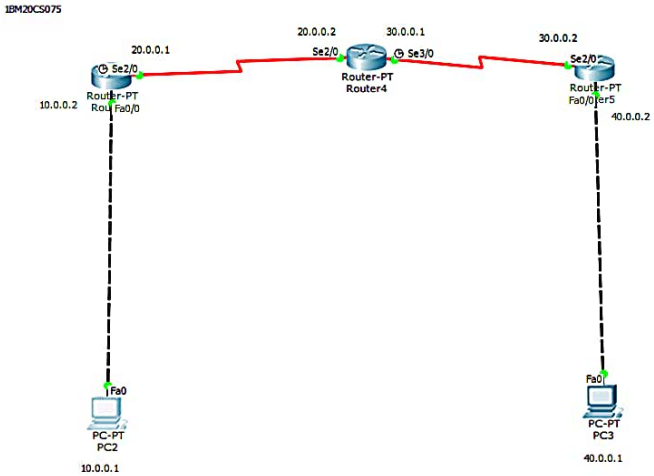
Ping statistics for 40.0.0.1:
Packets: Sent=4, Received=4, Lost=0.

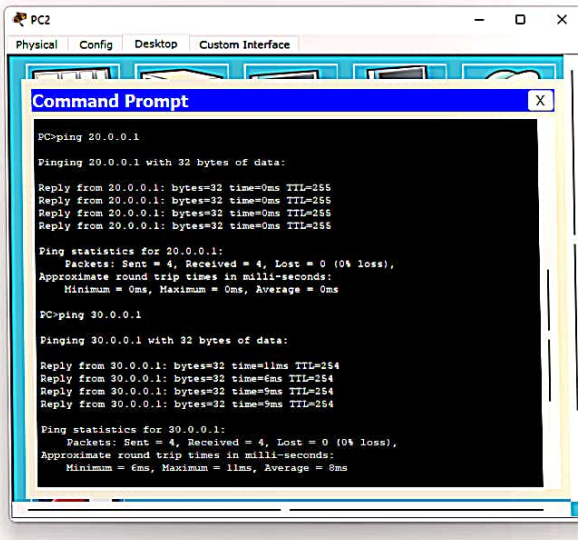

1BM20CS075
20.0.0.1
20.0.0.2
30.0.0.1
30.0.0.2
Se2/0
Se2/0
Se3/0
Se2/0
Router-PT
Router4
Router-PT
Router5
10.0.0.2
Fa0/0
Fa0/0
40.0.0.2
Fa0
Fa0
PC-PT
PC2
PC-PT
PC3
10.0.0.1
40.0.0.1


Router3
Physical
Config
CLI
IOS Command Line Interface
Press RETURN to get started!
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
Router>config t
% Invalid input detected at '^' marker.
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clock rate 64000
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#
Copy
Paste


1BM20CS075
20.0.0.2
30.0.0.1
30.0.0.2
20.0.0.1
Se2/0
Se2/0
Se3/0
Se2/0
Router-PT
Router4
Router-PT
Router5
10.0.0.2
Router-PT
Fa0/0
Fa0/0
40.0.0.2
Fa0
Fa0
PC-PT
PC2
PC-PT
PC3
10.0.0.1
40.0.0.1


Router4
Physical
Config
CLI
IOS Command Line Interface
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)
Press RETURN to get started!
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 3/0
Router(config-if)#ip address 30.0.0.1 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clock rate 64000
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#
Copy
Paste


1BM20CS075
20.0.0.1
20.0.0.2
30.0.0.1
30.0.0.2
Se2/0
Se2/0
Se3/0
Se2/0
Router-PT
Router4
Router-PT
Fa0/0er5
10.0.0.2
Fa0/0
40.0.0.2
Fa0
Fa0
PC-PT
PC2
PC-PT
PC3
10.0.0.1
40.0.0.1


PC2
Physical
Config
Desktop
Custom Interface
Command Prompt
X
PC>ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:
Reply from 20.0.0.1: bytes=32 time=0ms TTL=255
Reply from 20.0.0.1: bytes=32 time=0ms TTL=255
Reply from 20.0.0.1: bytes=32 time=0ms TTL=255
Reply from 20.0.0.1: bytes=32 time=0ms TTL=255
Ping statistics for 20.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
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=11ms TTL=254
Reply from 30.0.0.1: bytes=32 time=6ms TTL=254
Reply from 30.0.0.1: bytes=32 time=9ms TTL=254
Reply from 30.0.0.1: bytes=32 time=9ms TTL=254
Ping statistics for 30.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 6ms, Maximum = 11ms, Average = 8ms


Time: 00:26:38
Power Cycle Devices
Fast Forward Time
Routers
1841
1941
2620XM
2621XM
2811
2901
2911
819
Generic
Generic
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete