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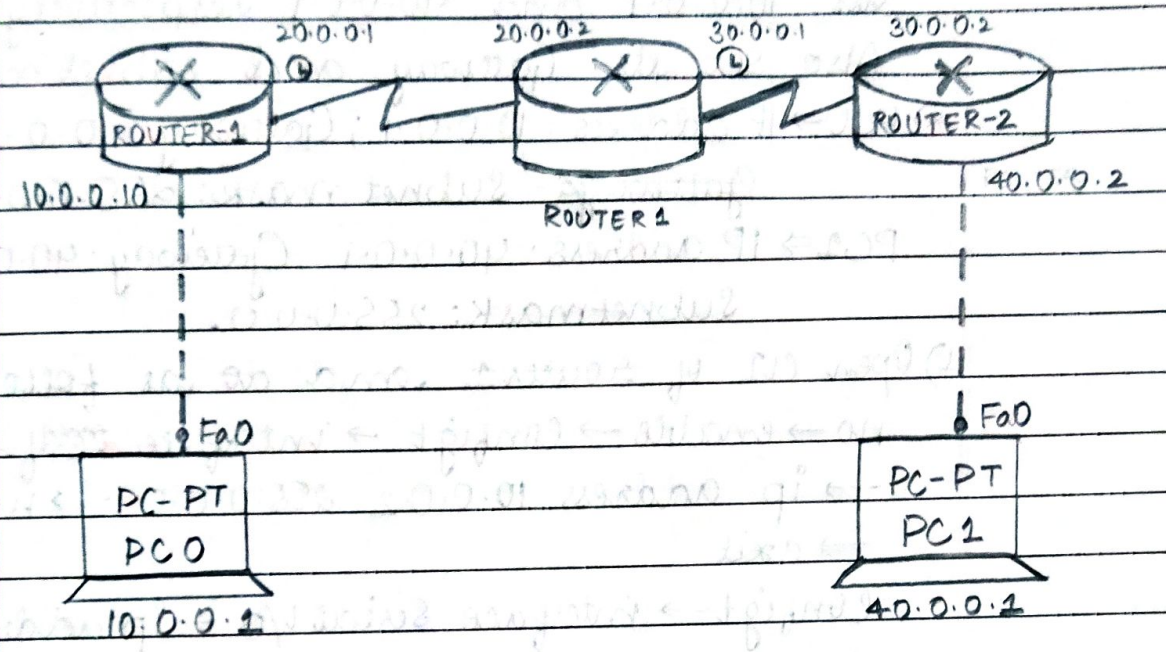
LAB-5

AIM:- Configuring RIP routing protocol in Route

TOPOLOGY:-



SERIAL DCE.

We can enable clocking on the DCE side to bring up the line protocol. You can tell which end of the connection is the DCE Size by the small "clock" icon next to the port.

RIP:- It is a protocol that routers can use to exchange network topology information. RIP uses a distance vector algorithm to decide which path to put a packet on to get to its destination.

PROCEDURE :-

*) Place two PCs and 3 routers in the workspace.

*) For both the PCs sets its IP address as 10.0.0.1 and 40.0.0.1 respectively. Also set its Gateway and subnet mask.

*) PC0 ⇒ IP address : 10.0.0.1 ; Gateway : 10.0.0.2
~~Gateway~~ - Subnet mask: 255.0.0.0

PC1 ⇒ IP address : 40.0.0.1 Gateway : 40.0.0.2
Subnetmask: 255.0.0.0.

*) Open CLI of router1 and do as follows:-
no → enable → Configt → interface ~~test~~ fastethernet → ip address 10.0.0.2 255.0.0.0 → no Shut → exit
Configt → interface Serial 0/0 → ip address 20.0.0.1 255.0.0.0 → encapsulation PPP → clock rate 64000 → no Shut.

*) Open CLI of router2 and do as follow.
no → enable → configt → interface Serial 2/0 → ip address 20.0.0.2 → encapsulation PPP → noshut exit → exit
Configt → interface serial 3/0 → ip address 30.0.0.1 255.0.0.0 → encapsulation PPP clockrate 64000 → no Shut.

Now the connection between Router 1 and Router2.

*) Open CLI of router3 and do as follows:-
enable → configt → interface fastethernet 0/0 ip address 40.0.0.2 255.0.0.0 → no Shut. exit → exit → configt
Interface Serial 2/0 → ip address 30.0.0.2 255.0.0.0 → encapsulation ppp → no Shut.

Now the connections are all established.
*) Now specify the RIP protocol.
*) Now open the CLI of router 1:-
router rip → network 10.0.0.0 → network 20.0.0.0 → exit → exit.
*) Open the CLI of router 2:-
router rip → network 20.0.0.0 → network 30.0.0.0 → exit.
*) Ping PC_1 to PC_2.

OBSERVATION:-

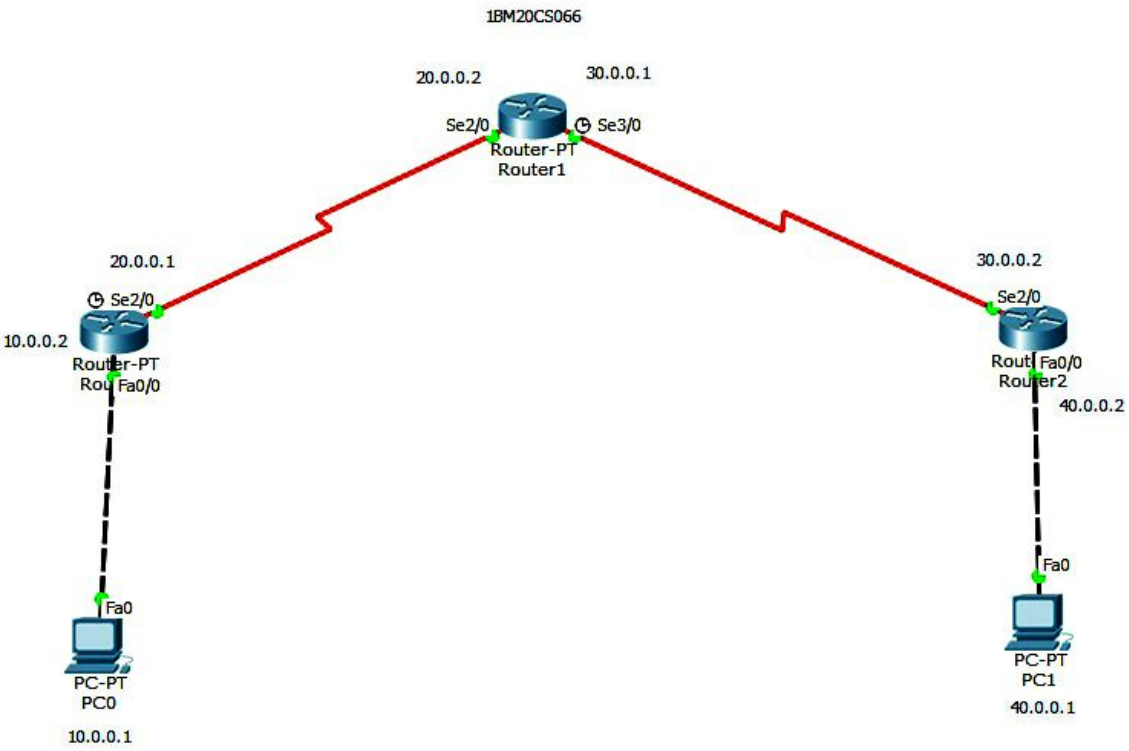
RESULT:-
PC> ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Request timed out
Reply for 40.0.0.1: byte = 32 time = 6ms TTL=125
Reply for 40.0.0.1: byte = 32 time = 9ms TTL = 125
Reply for 40.0.0.1: byte = 32 time = 7ms TTL = 125
ping statics for 40.0.0.0
Packets: sent = 4, received = 3, lost = 1 (25% loss).

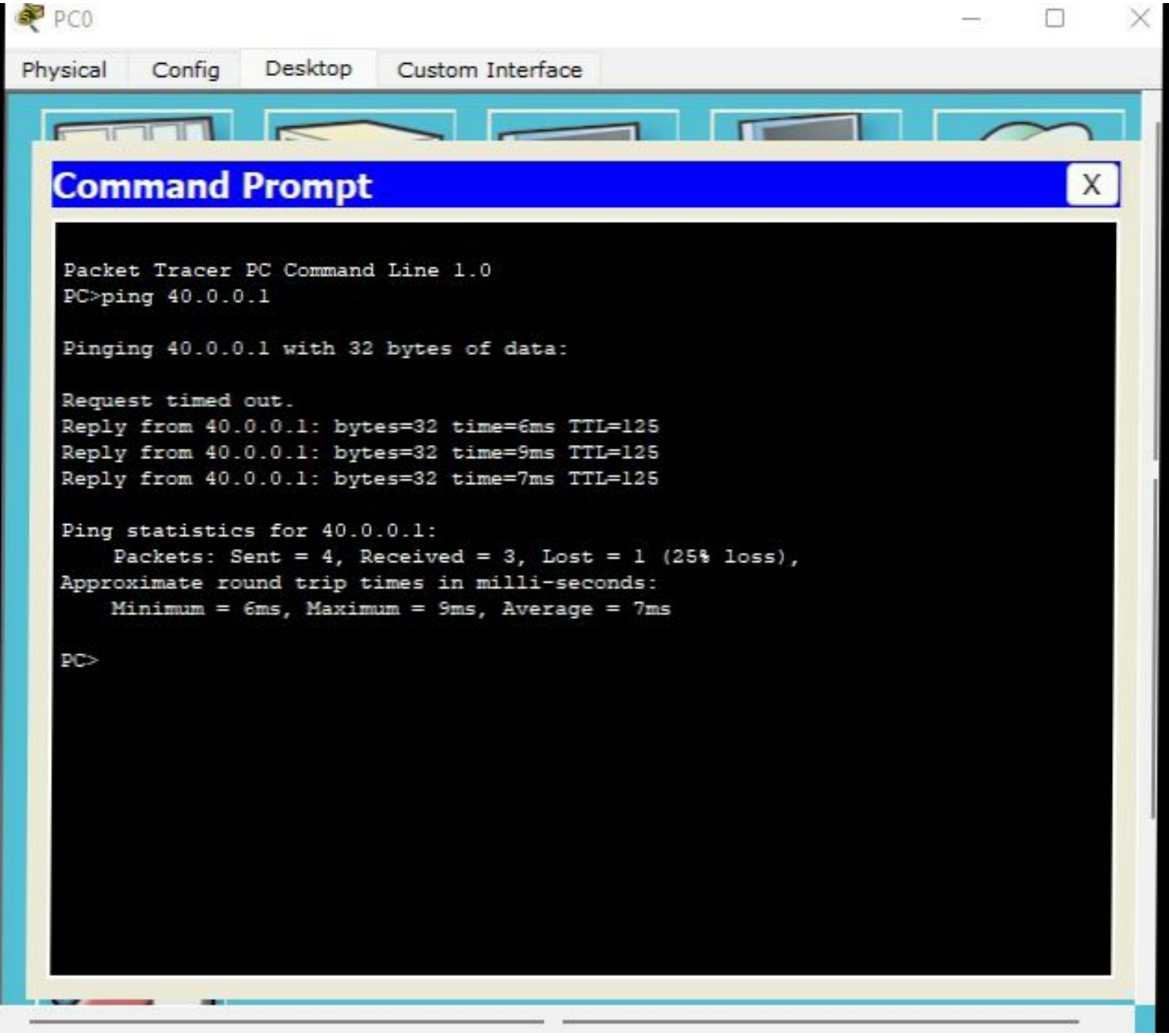
LEARNING:-
When RIP protocol is used we donot have to do static routing for all the routers i.e, we have to teach all the routers by providing with the next hop
In dynamic routing (RIP protocol) we just have to specify the networks known by the router.

```
Continue with configuration dialog? [yes/no]: no


Press RETURN to get started!



Router>enable
Router#interface fastethernet0/0
                 ^
% Invalid input detected at '^' marker.

Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.2 255.0.00.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#configt
Translating "configt"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address

Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface serial2/0
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

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router(config-if)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Continue with configuration dialog? [yes/no]: no


Press RETURN to get started!



Router>enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface serial2/0
Router(config-if)#ip address 20.0.0.2
% Incomplete command.
Router(config-if)#ip address 20.0.0.2 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface serial3/0
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

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 20.0.0.0
Router(config-router)#network 30.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Continue with configuration dialog? [yes/no]: no


Press RETURN to get started!



Router>enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 40.0.0.2 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface serial2/0
Router(config-if)#ip address 30.0.0.2 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#no shut'
                         ^
% Invalid input detected at '^' marker.

Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 30.0.0.0
Router(config-router)#network 40.0.0.0
Router(config-router)#exit
Router(config)#
```


1BM20CS066
20.0.0.2
30.0.0.1
Se2/0
Se3/0
Router-PT
Router1
20.0.0.1
30.0.0.2
Se2/0
Se2/0
10.0.0.2
Router-PT
Fa0/0
Router2
Fa0/0
40.0.0.2
Fa0
Fa0
PC-PT
PC0
PC-PT
PC1
10.0.0.1
40.0.0.1


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 40.0.0.1: bytes=32 time=6ms TTL=125
Reply from 40.0.0.1: bytes=32 time=9ms TTL=125
Reply from 40.0.0.1: bytes=32 time=7ms TTL=125
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 6ms, Maximum = 9ms, Average = 7ms
PC>