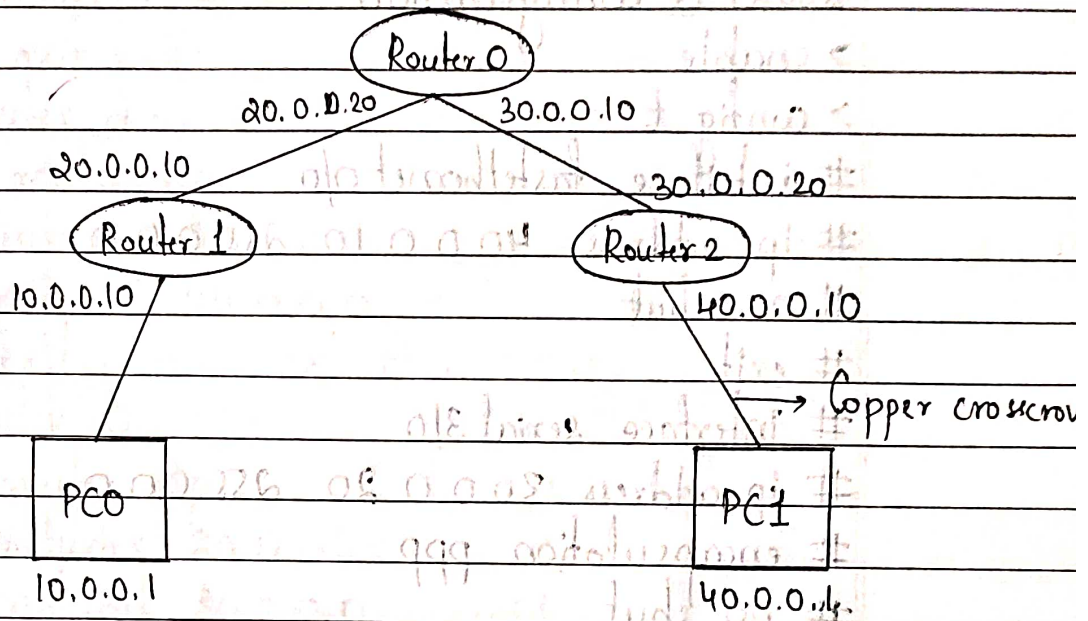


20/7/23

Aim - Configuring RIP routing Protocol in system of 3 Routers.

Topology -



Procedure -

- 1) Select two PCs and 3 routers, connect the PCs to two routers using copper cross over wires and connect the routers to another router with serial DCE with timer.
- 2) Set the IP address of both the PCs as 10.0.0.1 and 40.0.0.1 respectively and their gateways as 10.0.0.10 and 40.0.0.10 respectively.
- 3) Router 1 configuration

```
> enable
> config t
# interface fastethernet 0/0
# ip address 10.0.0.10 255.0.0.0
# no shut
# exit
```

```
# interface serial 2/0
```

```
# ip address 20.0.0.10 255.0.0.0
```

```
# encapsulation ppp
```

```
# clock rate 64000
```

```
# no shut
```

```
# exit
```

Router 2 configuration

```
> enable
```

```
> config t
```

```
# interface fastethernet 0/0
```

```
# ip address 40.0.0.10 255.0.0.0
```

```
# no shut
```

```
# exit
```

```
# interface serial 3/0
```

```
# ip address 30.0.0.20 255.0.0.0
```

```
# encapsulation ppp
```

```
# no shut
```

```
# exit
```

Router 0 configuration

```
> enable
```

```
> config t
```

```
# interface fast serial 2/0
```

```
# ip address 20.0.0.20 255.0.0.0
```

```
# encapsulation ppp
```

```
# no shut
```

```
# exit
```

```
# interface serial 3/0
```

```
# ip address 30.0.0.10 255.0.0.0
```

```
# encapsulation ppp
```

```
# clockrate 64000
```

```
# no shut
```

```
# exit
```


4) Now, network router configuration for Routing Information Protocol (RIP) is done as follows -

Router 1 -

```
# router rip
# network 10.0.0.0
# network 20.0.0.0
# exit
```

Router 2 -

```
# router rip
# network 30.0.0.0
# network 40.0.0.0
# exit
```

Router 0 -

```
# router rip
# network 20.0.0.0
# network 30.0.0.0
# exit
```

5) After RIP configuration of all routers, we check the routing table of all by giving show ip route command.

For router 0 -

show ip route

R 10.0.0.0/8 via 20.0.0.10, 00:00:13, Serial2/0
20.0.0.0/8 is variably subnetted, 2 subnets,
2 masks

C 20.0.0.0/8 is directly connected, Serial2/0

C 20.0.0.0/8 is directly connected, Serial2/0

30.0.0.0/8 is variably subnetted, 2 subnets,
2 masks

C 30.0.0.0/8 is directly connected, Serial 3/0
C 30.0.0.0/32 is directly connected, Serial 3/0
R 40.0.0.0/8 via 30.0.0.20, 00:00:12,
serial 3/0

6) Now, ping 10.0.0.1 from the command prompt of 40.0.0.1 and vice versa.

Result -

from 40.0.0.1 > ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Request timed out

Reply from 10.0.0.1: bytes=32 time=12 ms TTL=1

Reply from 10.0.0.1: bytes=32 time=2 ms TTL=1

Reply from 10.0.0.1: bytes=32 time=2 ms TTL=1

Ping statistics for 10.0.0.1:

Packets: Sent=4, Received=3, Lost=0.1

Approximate round trip time in milliseconds:

Minimum=2 ms, Maximum=12 ms, Average=2

from 10.0.0.1 > ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes=32 time=2 ms TTL=121

Reply from 40.0.0.1: bytes=32 time=2 ms TTL=121

Reply from 40.0.0.1: bytes=32 time=2 ms TTL=121

Reply from 40.0.0.1: bytes=32 time=2 ms TTL=121

Minimum = 2 ms, Maximum = 8 ms, Average = 2 ms

1. 3. 2. 4.

(S. 1000)

1234

127

01 02 03

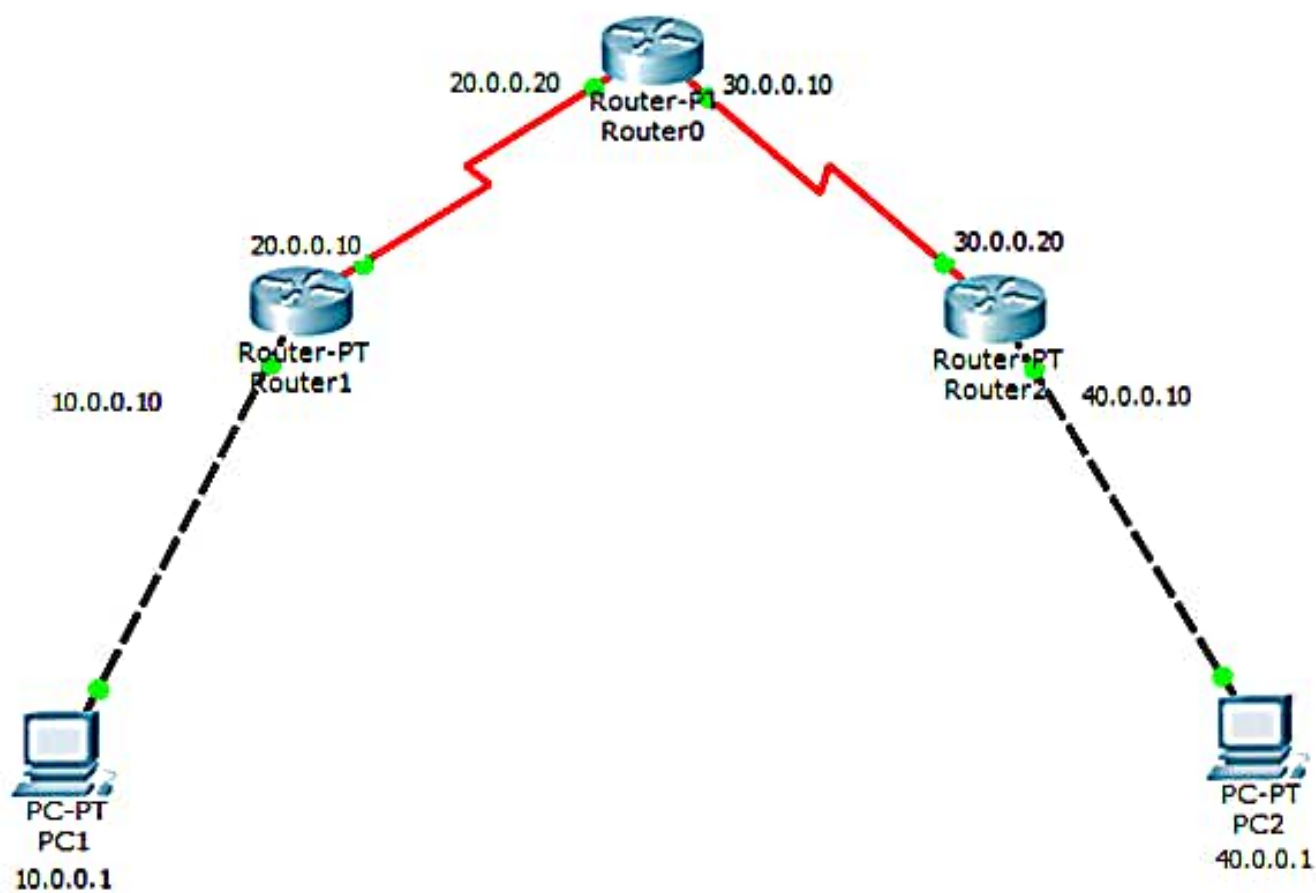
010201

1. The first step is to identify the problem. In this case, the problem is that the company is not meeting its sales targets.

1. The first part of the paper is a general introduction to the topic of the study.

[illegible]

1874





Router1

Physical Config CLI

IOS Command Line Interface

```
% Invalid input detected at '^' marker.

Router(config-if)#interface serial2/0
Router(config-if)#ip address 20.0.0.10 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clockrate 64000
^
% Invalid input detected at '^' marker.

Router(config-if)#clock rate 64000
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

%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 t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#exit
Router(config)#
```

Copy Paste

PC-PT
PC1

Time: 00:20:14 Power Cycle Devices Fast Forward Time



Connections



Serial DCE

Toggle PDU List Window

Realtime

Activate Windows
Go to Settings to activate Windows.

Type here to search



27°C Partly sunny

10:22 AM
7/20/2023

PC-PT
PC1

Router2

Physical Config CLI

IOS Command Line Interface

Press RETURN to get started!

```
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial3/0
Router(config-if)#ip address 30.0.0.20 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
exit
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Router(config)#interface fastethernet0/0
Router(config-if)#ip address 40.0.0.10 255.0.0.0
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
exit
Router(config)#
```

Copy Paste

Time: 00:19:01 Power Cycle Devices Fast Forward Time



Connections

Serial DCE

Toggle PDU List Window

Realtime

Activate Windows
Go to Settings to activate Windows.

Type here to search



27°C Partly sunny

10:20 AM
7/20/2023



Router0

Physical Config CLI

IOS Command Line Interface

```
exit
Router(config)#e
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
exit

% Invalid input detected at '^' marker.

Router(config)#interface serial3/0
Router(config-if)#ip address 30.0.0.10 255.0.0.0
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)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

%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 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)#
```

Copy Paste

PC-PT
PCI

Time: 00:21:01 Power Cycle Devices Fast Forward Time



Connections



Serial DCE

Toggle PDU List Window

Realtime

Activate Windows
Go to Settings to activate Windows.

Type here to search



27°C Partly sunny 10:23 AM 7/20/2023



Router1

Physical Config CLI

IOS Command Line Interface

Enter configuration commands, one per line. End with CNTRL/Z.

```
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.10 255.0.0.0
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
esit
^
% Invalid input detected at '^' marker.

Router(config-if)#interface serial2/0
Router(config-if)#ip address 20.0.0.10 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clockrate 64000
^
% Invalid input detected at '^' marker.

Router(config-if)#clock rate 64000
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

Copy Paste

PC-PT
PCI

Time: 00:14:02 Power Cycle Devices Fast Forward Time



Connections



Serial DCE

Toggle PDU List Window

Type here to search



27°C Partly sunny 10:16 AM 7/20/2023

Realtime

Activate Windows
Go to Settings to activate Windows.

Router1

Physical Config CLI

IOS Command Line Interface

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

Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#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
show ip rout
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    10.0.0.0/8 is directly connected, FastEthernet0/0
C    20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C      20.0.0.0/8 is directly connected, Serial2/0
C      20.0.0.20/32 is directly connected, Serial2/0
R    30.0.0.0/8 [120/1] via 20.0.0.20, 00:00:18, Serial2/0
R    40.0.0.0/8 [120/2] via 20.0.0.20, 00:00:17, Serial2/0
Router#
```

PC-PT
PC1

Time: 00:22:27 Power Cycle Devices Fast Forward Time

Connections

Serial DCE

Toggle PDU List Window

Realtime

Destination Type Color Time(sec) Periodic Num

Activate Windows
Go to Settings to activate Windows.

27°C Partly sunny 10:24 AM 7/20/2023



Router2

Physical Config CLI

IOS Command Line Interface

```
$ Invalid input detected at '^' marker.

Router>enable
Router#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)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

R 10.0.0.0/8 [120/2] via 30.0.0.10, 00:00:19, Serial3/0
R 20.0.0.0/8 [120/1] via 30.0.0.10, 00:00:19, Serial3/0
  30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C   30.0.0.0/8 is directly connected, Serial3/0
C   30.0.0.10/32 is directly connected, Serial3/0
C  40.0.0.0/8 is directly connected, FastEthernet0/0
Router#
```

Copy Paste

PC-PT
PC1

Time: 00:23:13 Power Cycle Devices Fast Forward Time



Type here to search



27°C Partly sunny 10:25 AM 7/20/2023

Realtime

Activate Windows
Go to Settings to activate Windows.



Router0

Physical Config CLI

IOS Command Line Interface

```
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
show ip rout
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
        i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
        * - candidate default, U - per-user static route, o - ODR
        P - periodic downloaded static route

Gateway of last resort is not set

R    10.0.0.0/8 [120/1] via 20.0.0.10, 00:00:13, Serial2/0
     20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C     20.0.0.0/8 is directly connected, Serial2/0
C     20.0.0.10/32 is directly connected, Serial2/0
     30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C     30.0.0.0/8 is directly connected, Serial3/0
C     30.0.0.20/32 is directly connected, Serial3/0
R    40.0.0.0/8 [120/1] via 30.0.0.20, 00:00:12, Serial3/0
Router#
```

Copy Paste

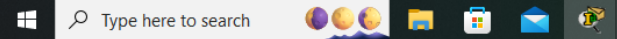
Time: 00:22:55 Power Cycle Devices Fast Forward Time



Connections



Type here to search



Realtime

Activate Windows
Go to Settings to activate Windows.

Destination Type Color Time(sec) Periodic Num

27°C Partly sunny 10:24 AM 7/20/2023

Router2

Physical Config CLI

IOS Command Line Interface

```
Router#
%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 t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 20.0.0.2
Router(config)#no shut

% Invalid input detected at '^' marker.

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show ip rout
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 20.0.0.2 to network 0.0.0.0

C    10.0.0.0/8 is directly connected, FastEthernet0/0
C    20.0.0.0/8 is directly connected, Serial2/0
S*   0.0.0.0/0 [1/0] via 20.0.0.2
Router#
```

Copy Paste

Time: 00:21:55 Power Cycle Devices Fast Forward Time

Connections

Toggle PDU List Window

Automatically Choose Connection Type

Realtime

Destination Type Color Time(sec) Periodic Num

Activate Windows
Go to Settings to activate Windows.

23°C Partly sunny 09:36 13-07-2023



PC1



Physical

Config

Desktop

Custom Interface

Command Prompt

Packet Tracer PC Command Line 1.0

PC>ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes=32 time=8ms TTL=125

Reply from 40.0.0.1: bytes=32 time=2ms TTL=125

Reply from 40.0.0.1: bytes=32 time=2ms TTL=125

Reply from 40.0.0.1: bytes=32 time=2ms TTL=125

Ping statistics for 40.0.0.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 8ms, Average = 3ms

PC>|

