

Lab Manual for Operating System

Lab No. 11

Routing Information Protocol(RIP)



BAHRIA UNIVERSITY KARACHI CAMPUS

Department of Software Engineering

COMPUTER COMMUNICATION & NETWORKING

LAB EXPERIMENT # 11

Dynamic Routing RIP

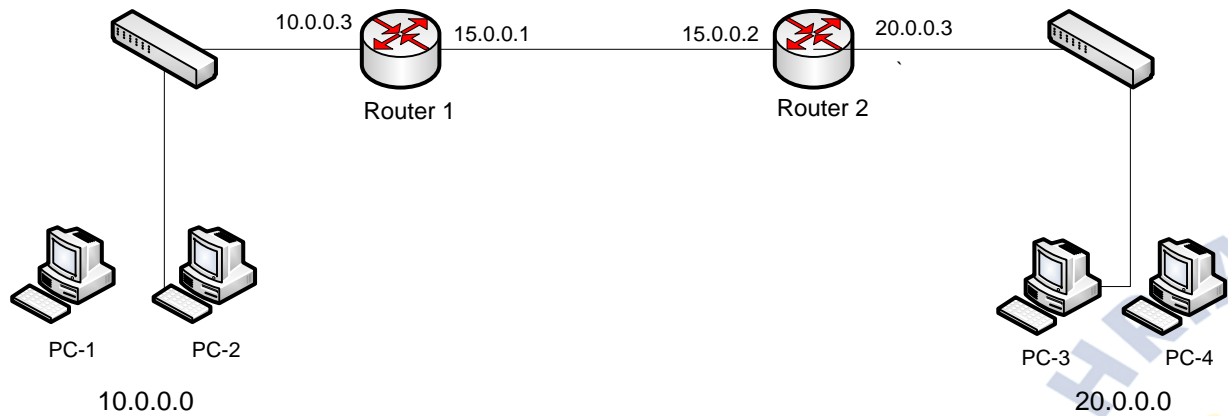
OBJECTIVE: -

- This lab assignment helps in understanding how dynamic route using Routing Information Protocol (RIP) can be configured on routers.

THEORY: -

Routing Information Protocol (RIP) is a true distance-vector routing protocol. RIP sends the complete routing table out to all active interfaces every 30 seconds. RIP only uses hop count to determine the best way to a remote network, but it has a maximum allowable hop count of 15 by default, meaning that 16 is deemed unreachable. RIP works well in small networks, but it's inefficient on large networks with slow WAN links or on networks with many routers installed. It cannot distinguish between high bandwidth link and a lower bandwidth link because delay or bandwidth is not taken under consideration as a metric.

NETWORK TOPOLOGY: -



PROCEDURE AND OBSERVATION: -

Step01: Configuring RIP routing on router 1

```
Router1(config)#interface serial 0/0/0 (Configuring serial 0 port)
Router1(config-if)#ip address 15.0.0.1 255.0.0.0
Router1(config-if)#Clock rate 64000
Router1(config-if)#no shut
Router1(config-if)#exit
```

```
Router1(config)#interface fa 0/0 (Configuring fastethernet 0 port)
Router1(config-if)#ip address 10.0.0.3 255.0.0.0
Router1(config-if)#no shut
Router1(config-if)#exit
```

```
Router1(config)#router rip (Configuring RIP on router 1)
Router1(config)#network 10.0.0.0
Router1(config)#network 15.0.0.0
```

```
Router1# show ip route
```

Step 02: Configuring static routing on router 2

```
Router2(config)#interface serial 0/0/0 (Configuring serial 0 port)
Router2(config-if)#ip address 15.0.0.5 255.0.0.0
Router2(config-if)#Clock rate 64000
Router2(config-if)#no shut
Router2(config-if)#exit
```

```
Router2(config)#interface fa 0/0          (Configuring fastethernet 0
port)
Router2(config-if)#ip address 20.0.0.3 255.0.0.0
Router2(config-if)#no shut
Router2(config-if)#exit
```

```
Router1(config)#router rip              (Configuring RIP on router
2)
Router1(config)#network 20.0.0.0
Router1(config)#network 15.0.0.0
```

```
Router2# show ip route
```

Step03: Verify the route by pinging from Router 1 to Router 2

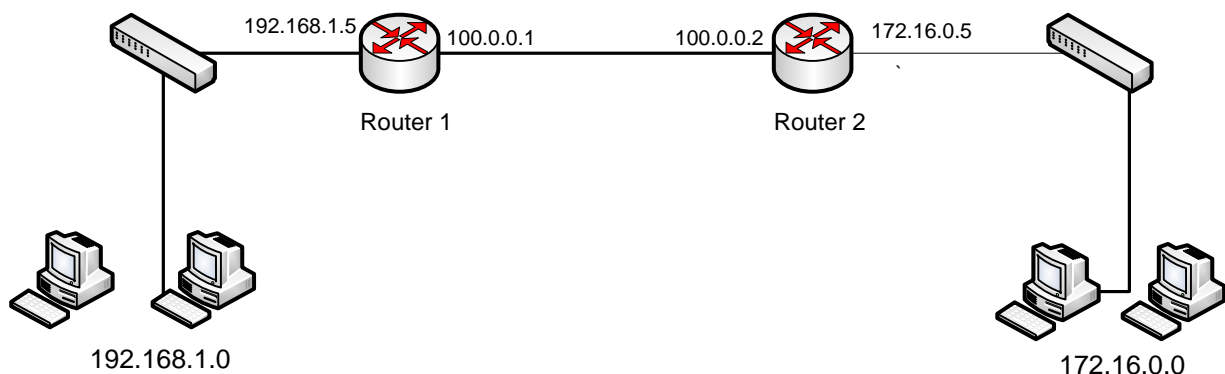
```
Router2# ping 20.0.0.2                  or
Router1# ping 10.0.0.2
```

Step04: Verify the route by pinging from PC 1 to PC3

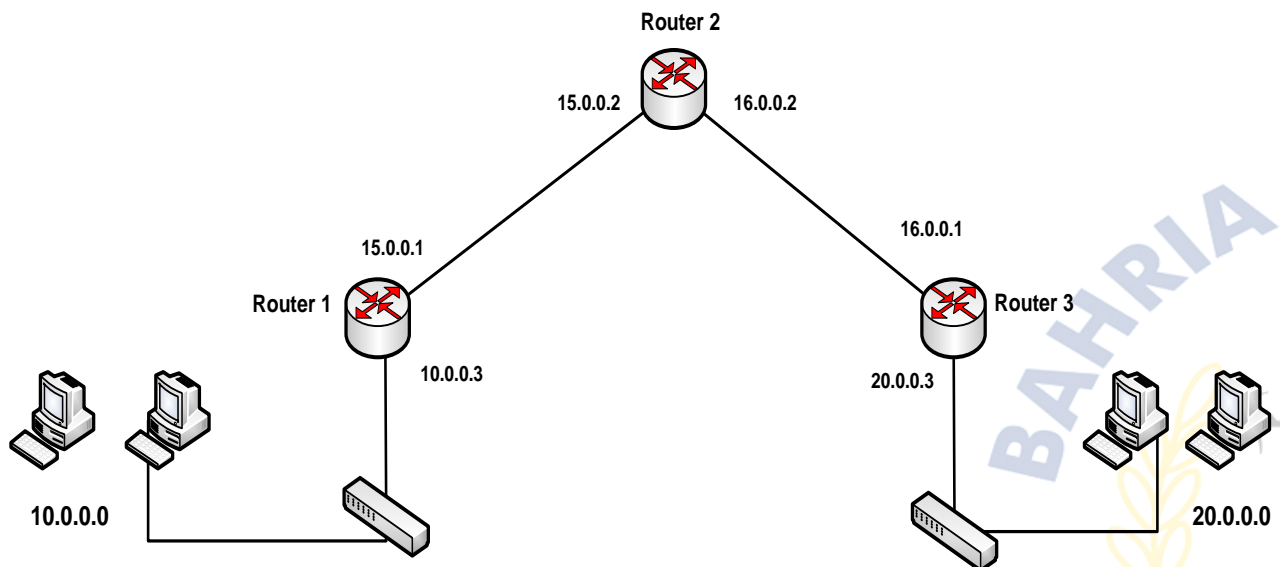
```
C:\> ping 10.0.0.1    (from PC 1)      or
C:\> ping 20.0.0.2    (from PC 3)
```

QUESTIONS: -

1. Configure RIP on the following network and show all necessary configuration steps for each router.



2. Configure RIP on the following network and show all necessary configuration steps for each router.



TIME BOXING:

Activity Name	Activity Time	Total Time
Instruments Allocation + Setting up Lab	10 mints	10 mints
Walk through Theory & Tasks (Lecture)	60 mints	60 mints
Implementation & Practice time	90 mints	80 mints
Evaluation Time	20 mints	20 mints
Total Duration		180 mints

Teacher Signature: _____

Student Registration No: _____