

## COMPUTER NETWORKS LAB EXAM 2

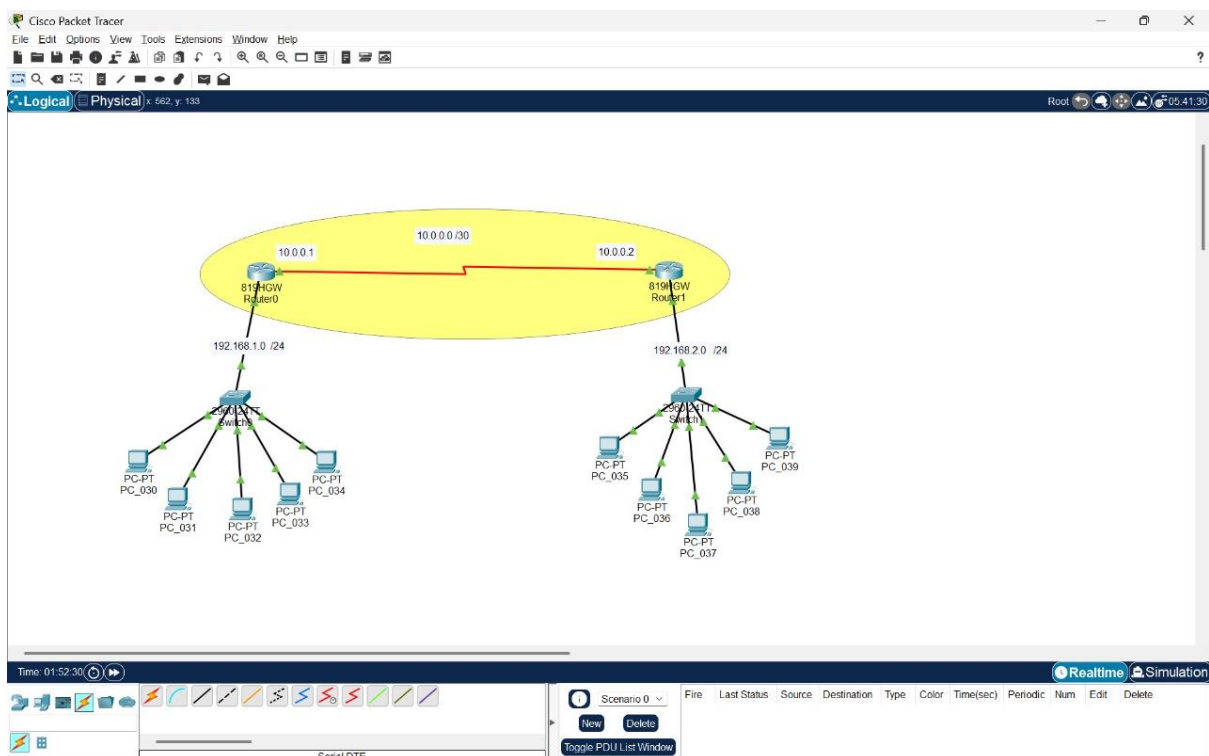
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### OBJECTIVE:

Set up and configure a network topology using RIP and OSPF routing protocols in Cisco Packet Tracer. Customize the network by assigning each computer a name and an IP address using the last three digits of your roll number.

### STEPS TAKEN:

#### STEP 1:



- Link the two routers with a Serial DCE-DTE cable.
- Connect the GigabitEthernet ports of R1 and R2 Routers to the Switch (SW0/SW1) ports with a straight-through cable.
- Connect PC\_030 to PC\_034 to SW1, PC\_035 to PC\_039 to SW2 with a straight cable.

#### STEP 2:

After typing the below commands on the Router, the connection is successful indicated by the green triangles on the cables below.

Click on the R1 Router you made in the setup, and open the settings. After that, go to the CLI tab. Use the commands below to give IP addresses to R1's GigabitEthernet and Serial ports.

Router0

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]:

Press RETURN to get started!

Router>

Router>enable

Router#conf t

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

Router(config)#int g0

Router(config-if)#ip address 192.168.1.1 255.255.255.0

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0, changed state to up

Router(config-if)#exit

Router(config)#int s0

Router(config-if)#ip address 10.0.0.1 255.255.255.252

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface Serial0, changed state to down

Router(config-if)#exit

Router(config)#

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Router1

Press RETURN to get started!

Router>

Router>enable

Router#conf t

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

Router(config)#int g0

Router(config-if)#ip address 192.168.2.1 255.255.255.0

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0, changed state to up

Router(config-if)#exit

Router(config)#int se0

Router(config-if)#ip address 10.0.0.2 255.255.255.252

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface Serial0, changed state to up

Router(config-if)#exit

Router(config)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0, changed state to up

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PC\_030

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.30

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::202:17FF:FE4C:EC37

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

### STEP 3:

Setting up RIP Protocol on Router 0

Enabling RIP Configuration

Router0

```
%LINK-5-CHANGED: Interface Serial0, changed state to down
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface Serial0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0, changed state to up

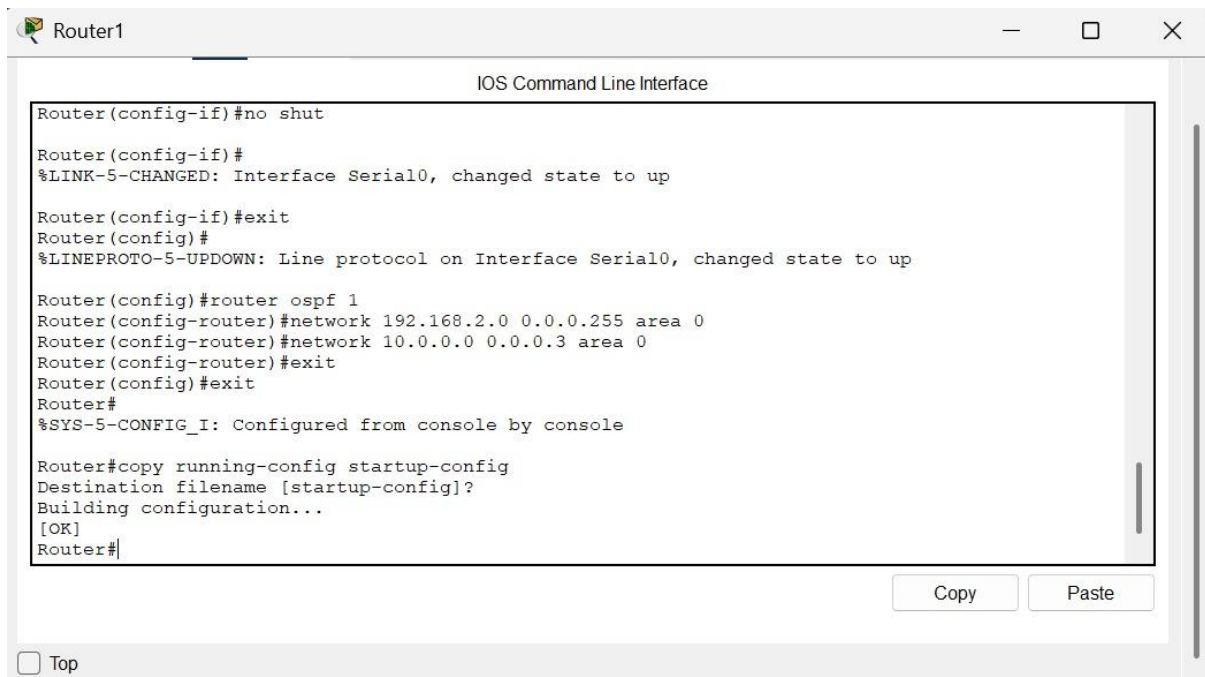
Router(config)#router rip
Router(config-router)#version 1
Router(config-router)#network 192.168.1.0
Router(config-router)#network 10.0.0.0
Router(config-router)#no auto-summary
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

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## OSPF on Router 1



```
Router1
IOS Command Line Interface

Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0, changed state to up
Router(config-if)#exit
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0, changed state to up

Router(config)#router ospf 1
Router(config-router)#network 192.168.2.0 0.0.0.255 area 0
Router(config-router)#network 10.0.0.0 0.0.0.3 area 0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

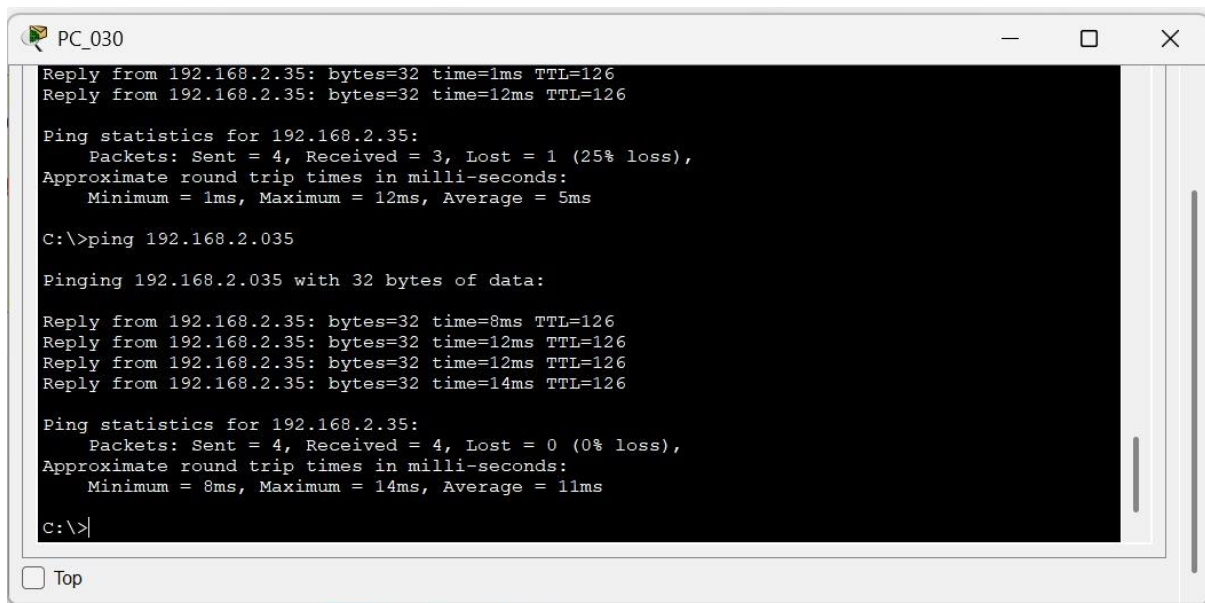
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

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### STEP 4:

Pinging to check the connectivity



```
PC_030

Reply from 192.168.2.35: bytes=32 time=1ms TTL=126
Reply from 192.168.2.35: bytes=32 time=12ms TTL=126

Ping statistics for 192.168.2.35:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 12ms, Average = 5ms

C:\>ping 192.168.2.035

Pinging 192.168.2.035 with 32 bytes of data:

Reply from 192.168.2.35: bytes=32 time=8ms TTL=126
Reply from 192.168.2.35: bytes=32 time=12ms TTL=126
Reply from 192.168.2.35: bytes=32 time=12ms TTL=126
Reply from 192.168.2.35: bytes=32 time=14ms TTL=126

Ping statistics for 192.168.2.35:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 14ms, Average = 11ms

C:\>
```

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