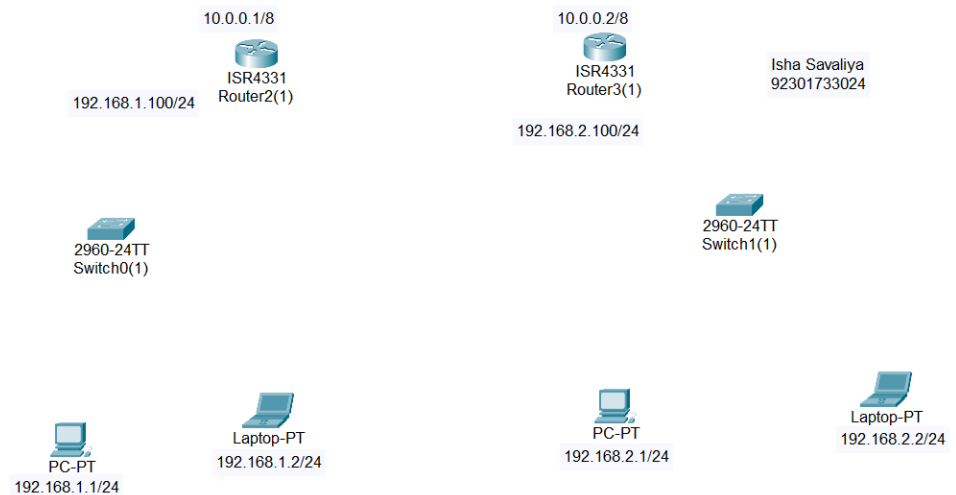
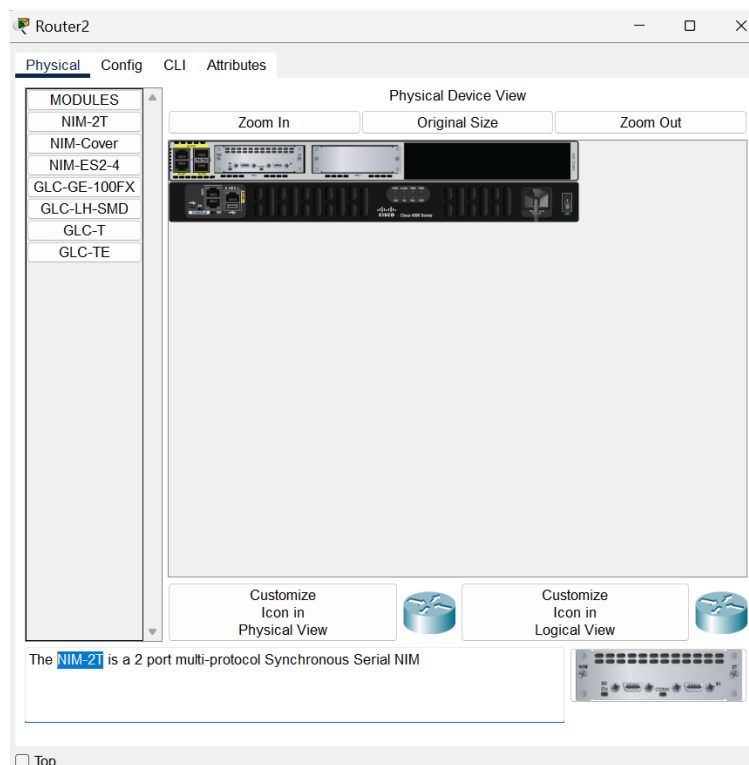

 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Perform static routing protocol and analyze the results.	
Experiment No: 05	Date: 24-08-2025	Enrolment No: 92301733024

Step-1: Open Cisco Packet Tracer and take two routers, two switches, and four PCs.

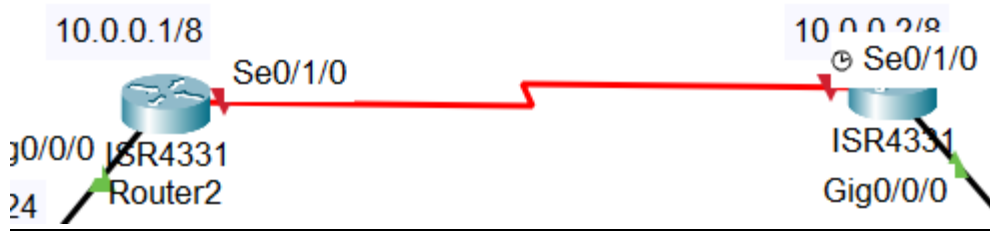


Step-2: For the serial port, turn off the router, drag and drop the NIM-2T module, and then turn the router back on.

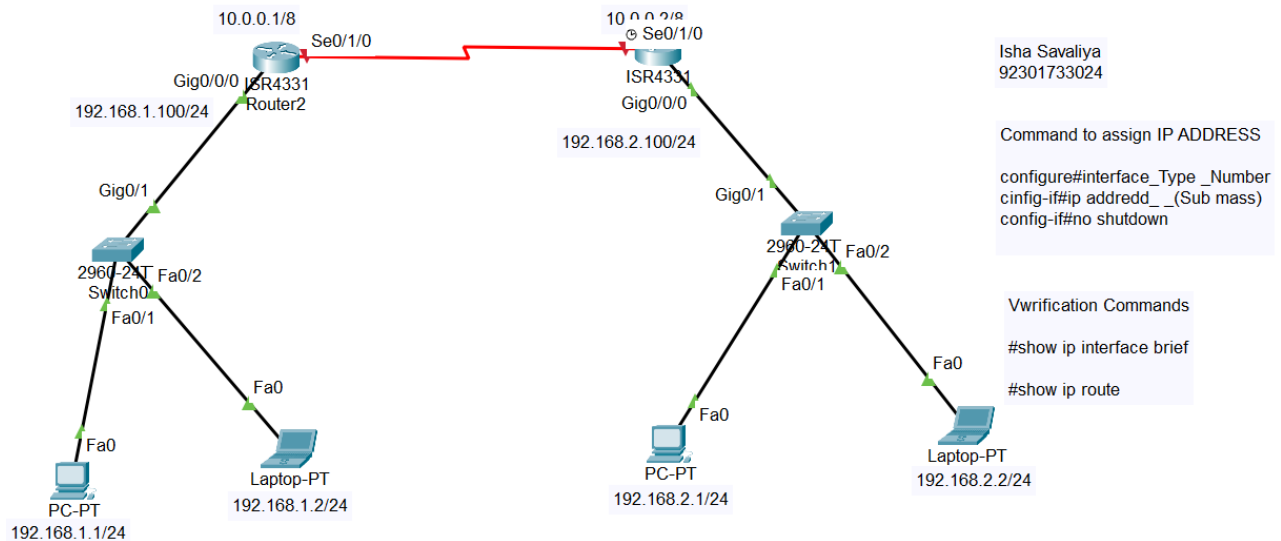



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Step-3: Connect the two routers using a Serial DTE cable.



Step-4: Connect the switches with the routers using Copper Straight-Through cables in the GigabitEthernet ports. Also, connect the PCs with the switches using Copper Straight-Through cables.



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Step-5:- Assign IP addresses and subnet masks to all PCs.

PC0

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.3

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

Laptop0

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.2

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

PC3

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.2.1

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

Laptop1

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration


☐ DHCP ☒ Static

IPv4 Address 192.168.2.2

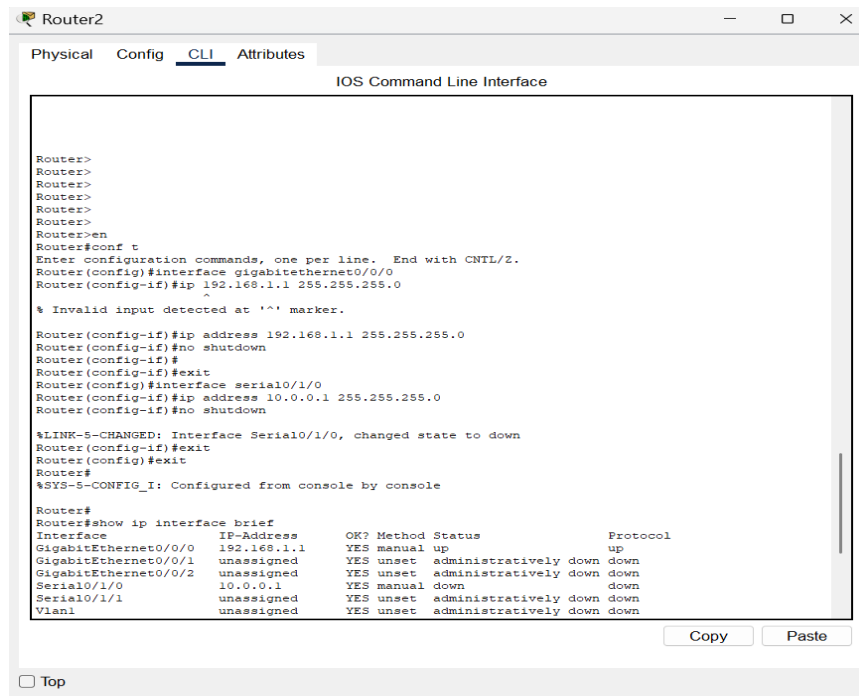
Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

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Step-6: Go to the Router CLI and assign IP addresses to the router interfaces.



Router2

Physical Config **CLI** Attributes

IOS Command Line Interface

```

Router>
Router>
Router>
Router>
Router>
Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface gigabitethernet0/0/0
Router(config-if)#ip 192.168.1.1 255.255.255.0
^
% Invalid input detected at '^' marker.

Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface serial0/1/0
Router(config-if)#ip address 10.0.0.1 255.255.255.0
Router(config-if)#no shutdown

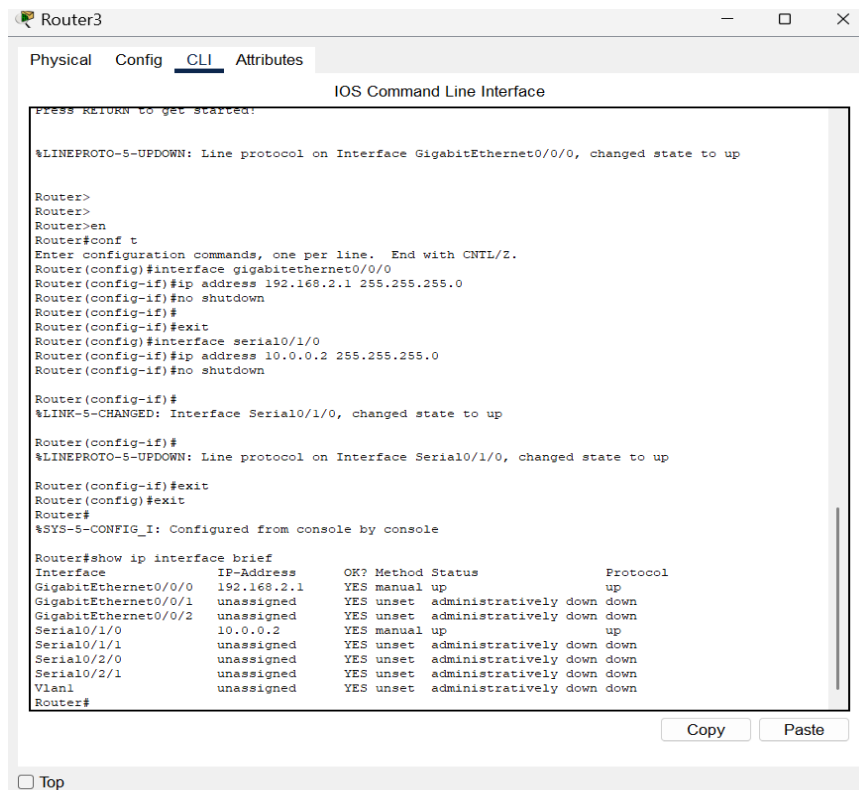
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to down
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
Router#show ip interface brief
Interface      IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0/0  192.168.1.1    YES manual  up          up
GigabitEthernet0/0/1  unassigned      YES unset   administratively down down
GigabitEthernet0/0/2  unassigned      YES unset   administratively down down
Serial0/1/0        10.0.0.1        YES manual  down        down
Serial0/1/1        unassigned      YES unset   administratively down down
Vlan1            unassigned      YES unset   administratively down down

```

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☐ Top



Router3

Physical Config **CLI** Attributes

IOS Command Line Interface

```

Press RETURN to get started:

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

Router>
Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface gigabitethernet0/0/0
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface serial0/1/0
Router(config-if)#ip address 10.0.0.2 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed state to up


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

Router#
Router#show ip interface brief
Interface      IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0/0  192.168.2.1    YES manual  up          up
GigabitEthernet0/0/1  unassigned      YES unset   administratively down down
GigabitEthernet0/0/2  unassigned      YES unset   administratively down down
Serial0/1/0        10.0.0.2        YES manual  up          up
Serial0/1/1        unassigned      YES unset   administratively down down
Serial0/2/0        unassigned      YES unset   administratively down down
Serial0/2/1        unassigned      YES unset   administratively down down
Vlan1            unassigned      YES unset   administratively down down
Router#

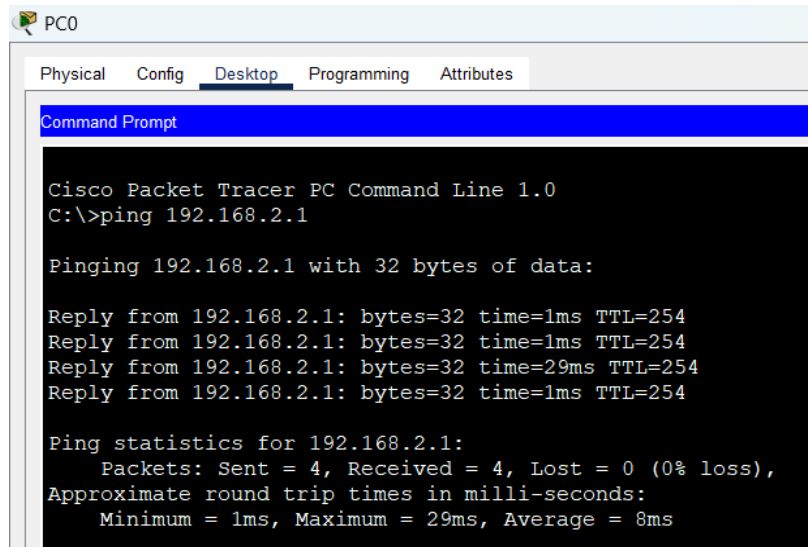
```

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Step -7:- Check the network connectivity.



```

PC0
Physical  Config  Desktop  Programming  Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=1ms TTL=254
Reply from 192.168.2.1: bytes=32 time=1ms TTL=254
Reply from 192.168.2.1: bytes=32 time=29ms TTL=254
Reply from 192.168.2.1: bytes=32 time=1ms TTL=254

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 29ms, Average = 8ms
  
```

Conclusion:

By performing this experiment, we learned how to connect routers, switches, and PCs, assign IP addresses, and verify connectivity using static routing.