

# Assignment 7

## Computer Networks

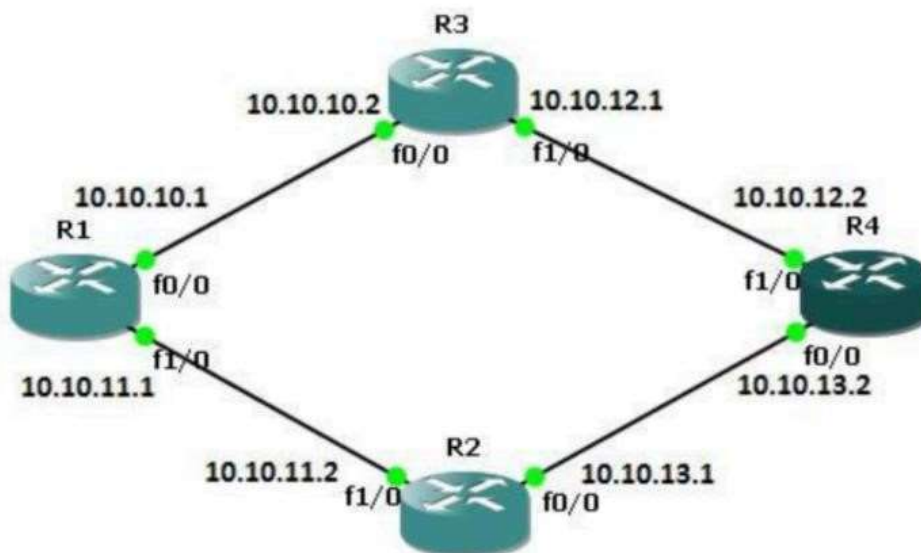
Name : SOURABH PATEL

Admission No : UI9CS082

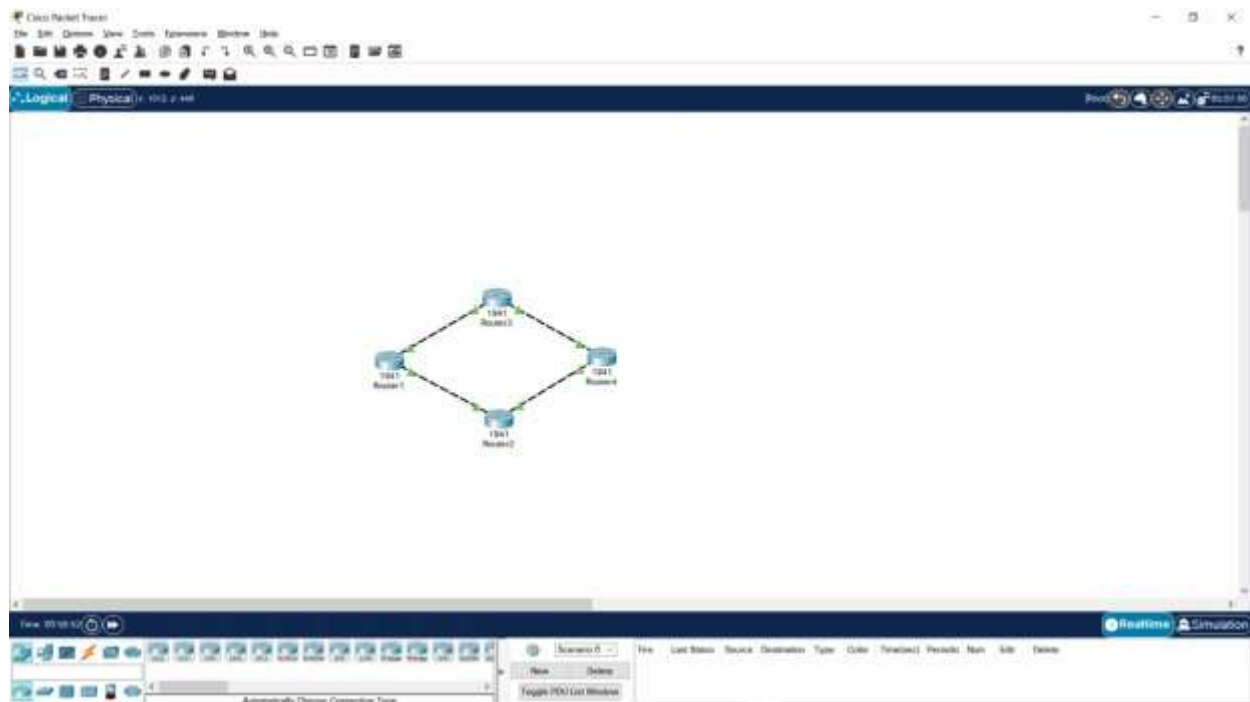
---

Create the below network, which follows static routing. Create the same network in two different ways,

- 1) configuring IP address from GUI
- 2) Command line.



IP configuring using **GUI**:



## Configuring **router 1**:

Router1

Physical Config CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

ISP

**SWITCHING**

VLAN Database

**INTERFACE**

GigabitEthernet0/0

GigabitEthernet0/1

Port Status: ☒ On

Bandwidth: ☐ 1000 Mbps ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☐ Full Duplex ☒ Auto

MAC Address: 0006.9783.7401

IP Configuration

IPv4 Address: 10.10.10.1

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#
```

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Router1

Physical Config CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

ISP

**SWITCHING**

VLAN Database

**INTERFACE**

GigabitEthernet0/0

GigabitEthernet0/1

Port Status: ☒ On

Bandwidth: ☐ 1000 Mbps ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☐ Full Duplex ☒ Auto

MAC Address: 0006.9783.7402

IP Configuration

IPv4 Address: 10.10.11.1

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
```

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## Configuring router 2:

**Router2**

Physical **Config** CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

GigabitEthernet0/0

GigabitEthernet0/1

**GigabitEthernet0/0**

Port Status: ☒ On

Bandwidth: 1000 Mbps 100 Mbps 10 Mbps ☒ Auto

Duplex: ☒ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 00D1.4254.9001

IP Configuration

IPv4 Address: 10.10.10.1

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```
Router>enable
Router#
Router>configure terminal
Enter configuration commands, one per line. End with CTRL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
```

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**Router2**

Physical **Config** CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

GigabitEthernet0/0

GigabitEthernet0/1

**GigabitEthernet0/1**

Port Status: ☒ On

Bandwidth: 1000 Mbps 100 Mbps 10 Mbps ☒ Auto

Duplex: ☒ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 00D1.4254.9002

IP Configuration

IPv4 Address: 10.10.10.2

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```
Router>configure terminal
Enter configuration commands, one per line. End with CTRL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
```

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## Configuring router 3:

**Router3**

Physical **Config** CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

GigabitEthernet0/0

GigabitEthernet0/1

**GigabitEthernet0/0**

Port Status: ☒ On

Bandwidth: 1000 Mbps 100 Mbps 10 Mbps ☒ Auto

Duplex: ☒ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 000C.CF7E.4501

IP Configuration

IPv4 Address: 10.10.10.1

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```
Router>enable
Router#
Router>configure terminal
Enter configuration commands, one per line. End with CTRL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
```

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**Router3**

Physical **Config** CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

GigabitEthernet0/0

GigabitEthernet0/1

**GigabitEthernet0/1**

Port Status: ☒ On

Bandwidth: 1000 Mbps 100 Mbps 10 Mbps ☒ Auto

Duplex: ☒ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 000C.CF7E.4502

IP Configuration

IPv4 Address: 10.10.10.1

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```
Router>enable
Router#
Router>configure terminal
Enter configuration commands, one per line. End with CTRL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
```

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## Configuring **router 4**:

The image displays two screenshots of the Cisco Packet Tracer configuration interface for Router4. The left screenshot shows the configuration for GigabitEthernet0/0, and the right screenshot shows the configuration for GigabitEthernet0/1. Both interfaces are configured with IP address 10.10.12.2 and subnet mask 255.255.255.0.

**Router4 Configuration (Left Screenshot):**

- Interface: GigabitEthernet0/0
- Port Status: On
- Bandwidth: 1000 Mbps
- Duplex: Half Duplex
- MAC Address: 0030.A336.A001
- IP Configuration: IPv4 Address: 10.10.12.2, Subnet Mask: 255.255.255.0
- Tx Ring Limit: 10

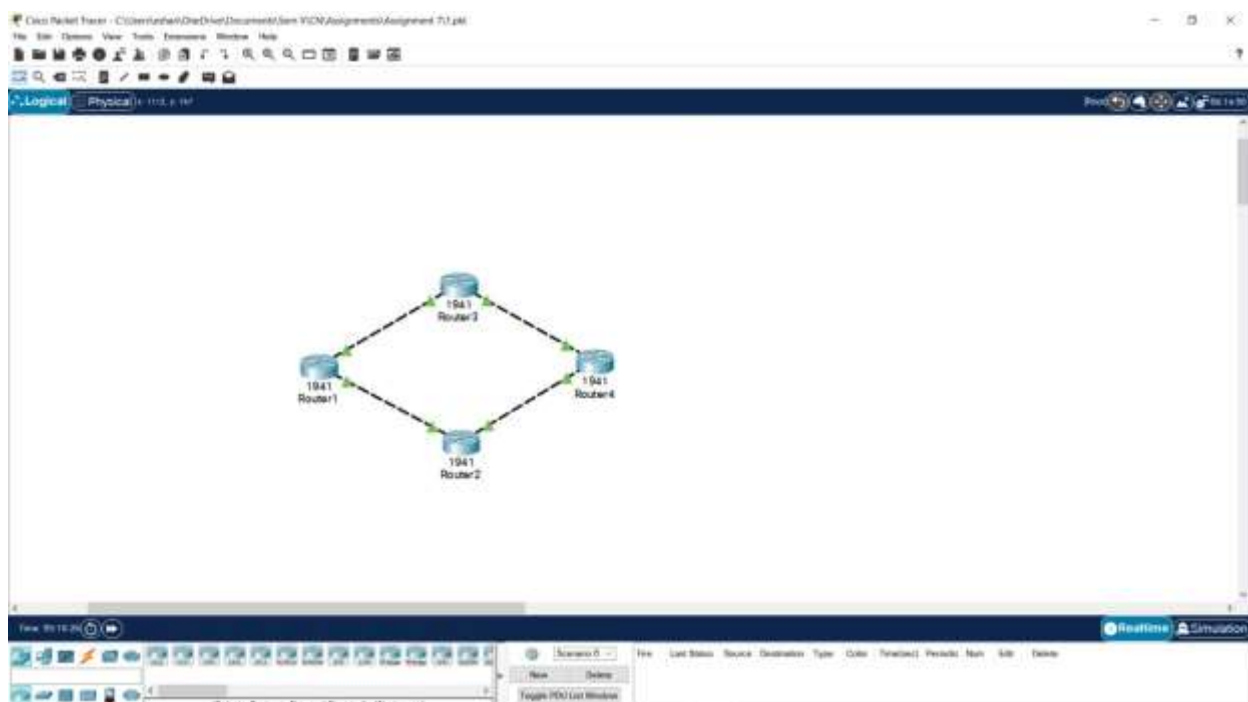
**Router4 Configuration (Right Screenshot):**

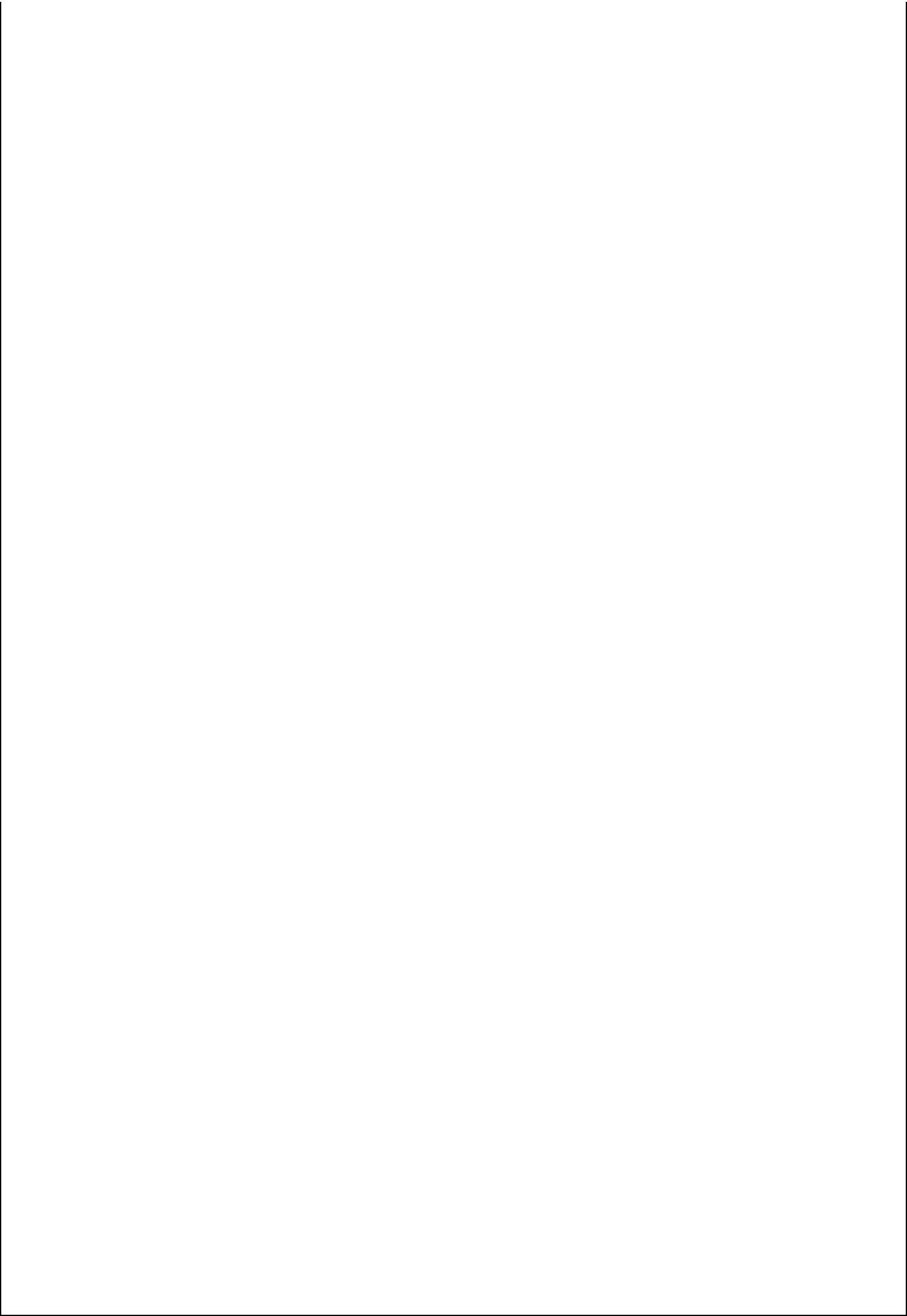
- Interface: GigabitEthernet0/1
- Port Status: On
- Bandwidth: 1000 Mbps
- Duplex: Half Duplex
- MAC Address: 0030.A336.A002
- IP Configuration: IPv4 Address: 10.10.12.2, Subnet Mask: 255.255.255.0
- Tx Ring Limit: 10

**Equivalent IOS Commands:**

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CTRL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
```

## IP configuring using **Command line**:





## Configuring router 1:

```
Router1
Physical Config CLI Attributes
IOS Command Line Interface

Router>sho ip route
Codes: L - local, C - connected, S - static, 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

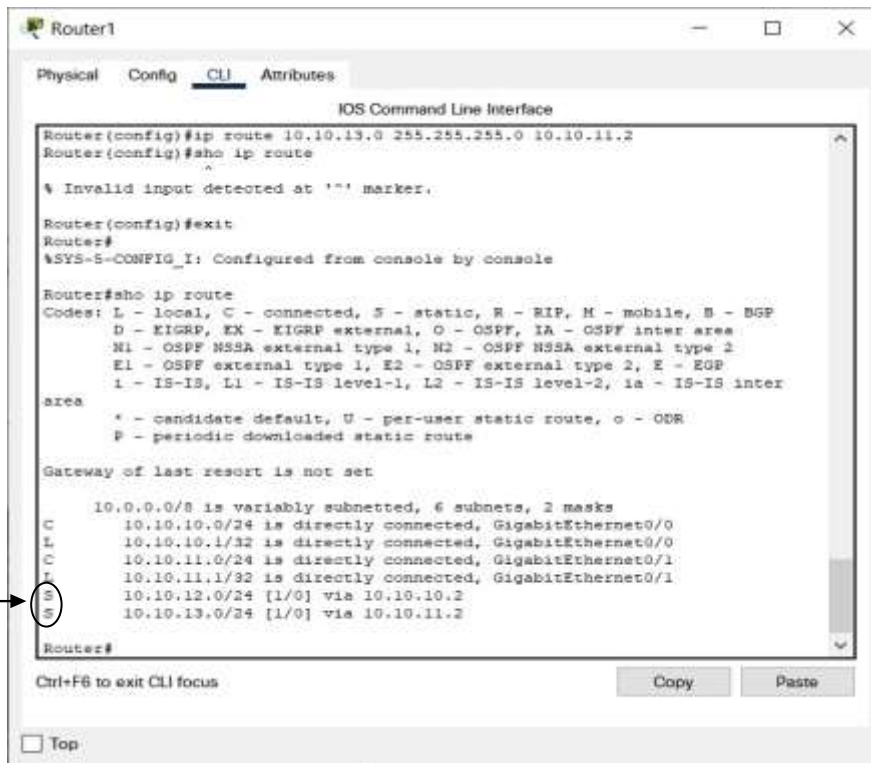
Gateway of last resort is not set

  10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C       10.10.10.0/24 is directly connected, GigabitEthernet0/0
L       10.10.10.1/32 is directly connected, GigabitEthernet0/0
C       10.10.11.0/24 is directly connected, GigabitEthernet0/1
L       10.10.11.1/32 is directly connected, GigabitEthernet0/1

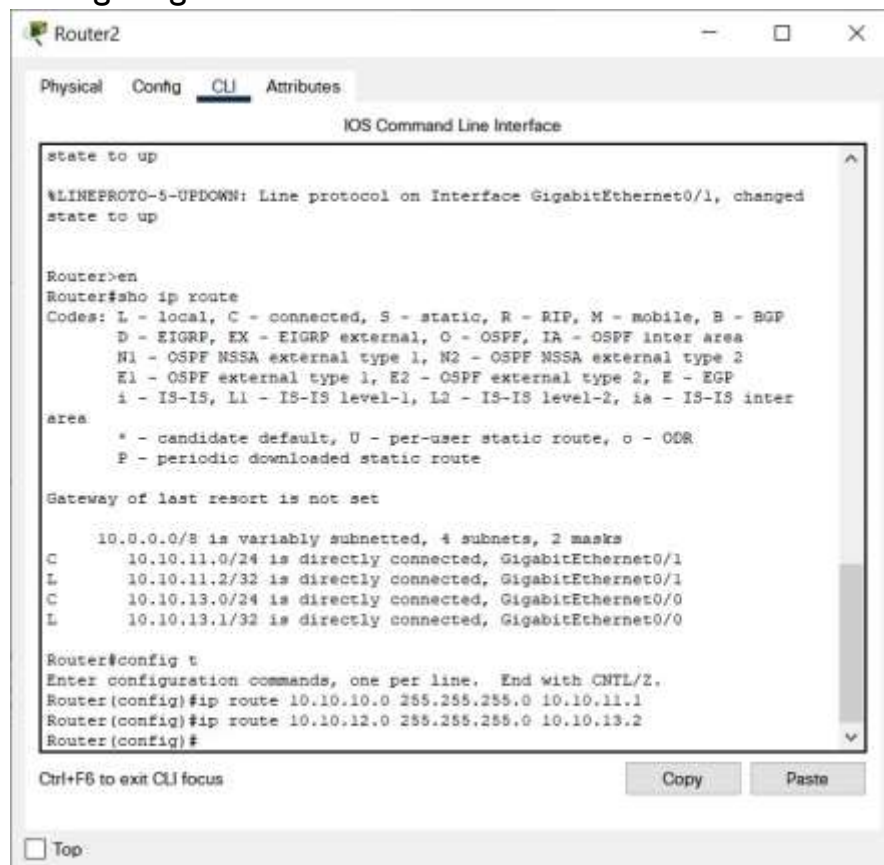
Router>
Router>configure terminal
      ^
% Invalid input detected at '^' marker.

Router>en
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 10.10.12.0 255.255.255.0 10.10.10.2
Router(config)#ip route 10.10.13.0 255.255.255.0 10.10.11.2
Router(config)#

Ctrl+F6 to exit CLI focus
```



## Configuring router 8:



```
Router2
Physical Config CLI Attributes
IOS Command Line Interface

Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 10.10.10.0 255.255.255.0 10.10.11.1
Router(config)#ip route 10.10.12.0 255.255.255.0 10.10.13.2
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#sho ip route
Codes: L - local, C - connected, S - static, 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

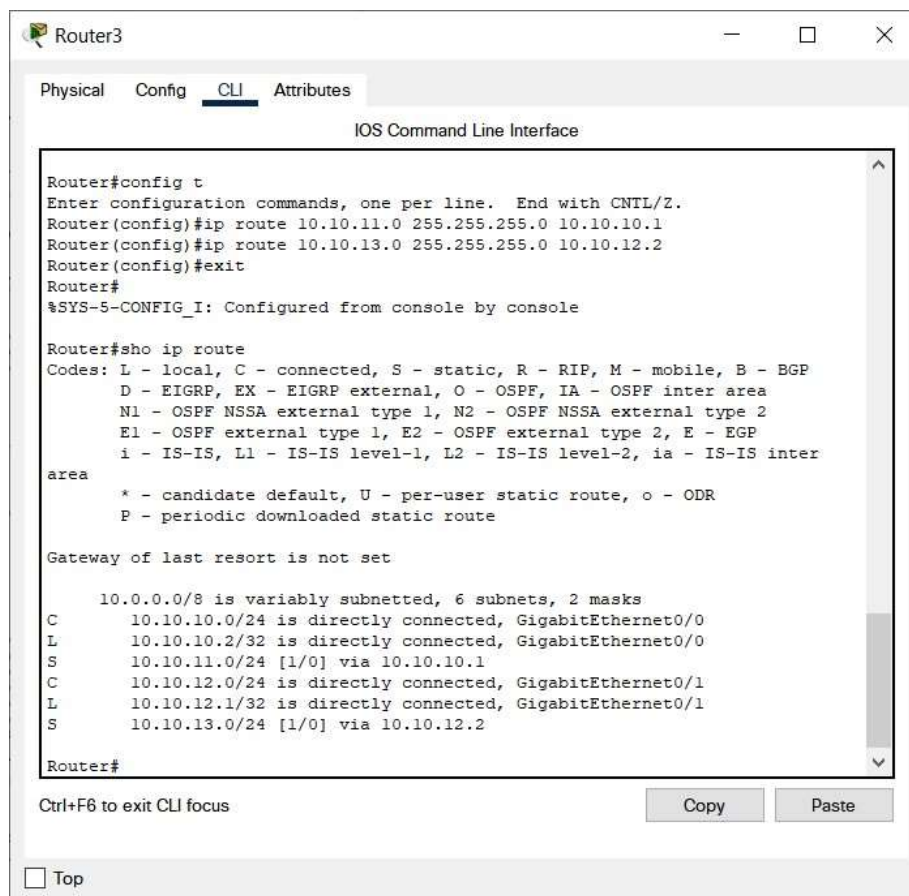
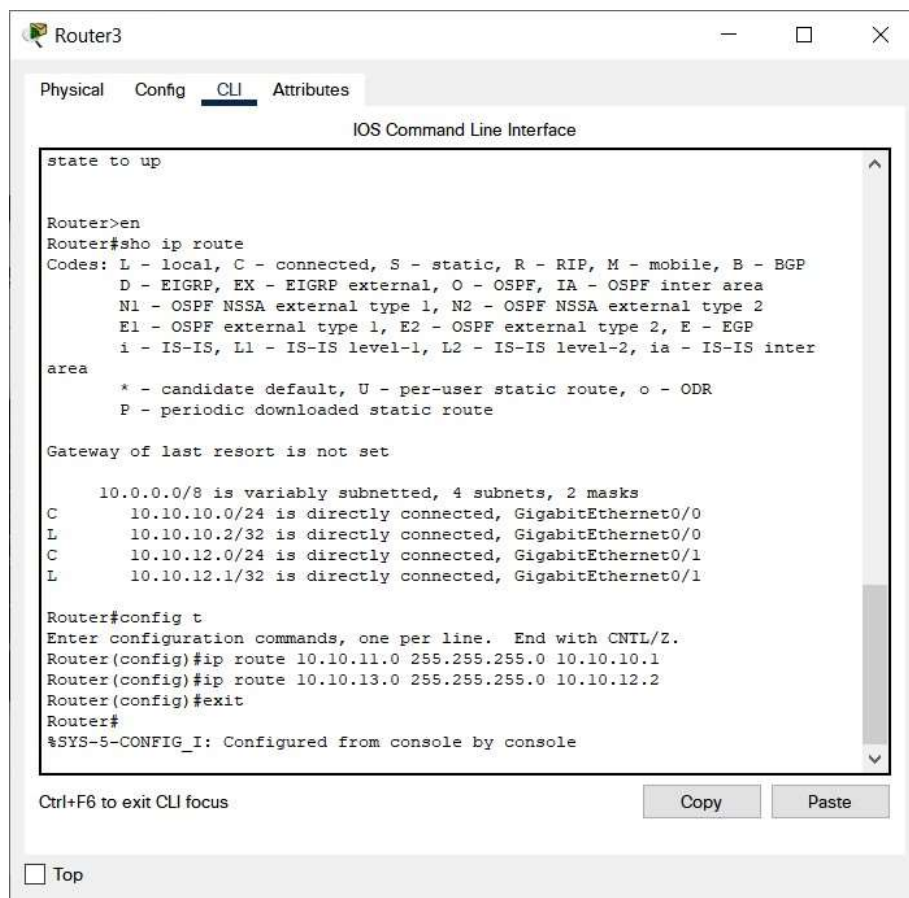
10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
C    10.10.10.0/24 [1/0] via 10.10.11.1
L    10.10.11.0/24 [1/0] via 10.10.11.1
L    10.10.11.2/32 is directly connected, GigabitEthernet0/1
C    10.10.12.0/24 [1/0] via 10.10.13.2
C    10.10.13.0/24 is directly connected, GigabitEthernet0/0
L    10.10.13.1/32 is directly connected, GigabitEthernet0/0

Router#

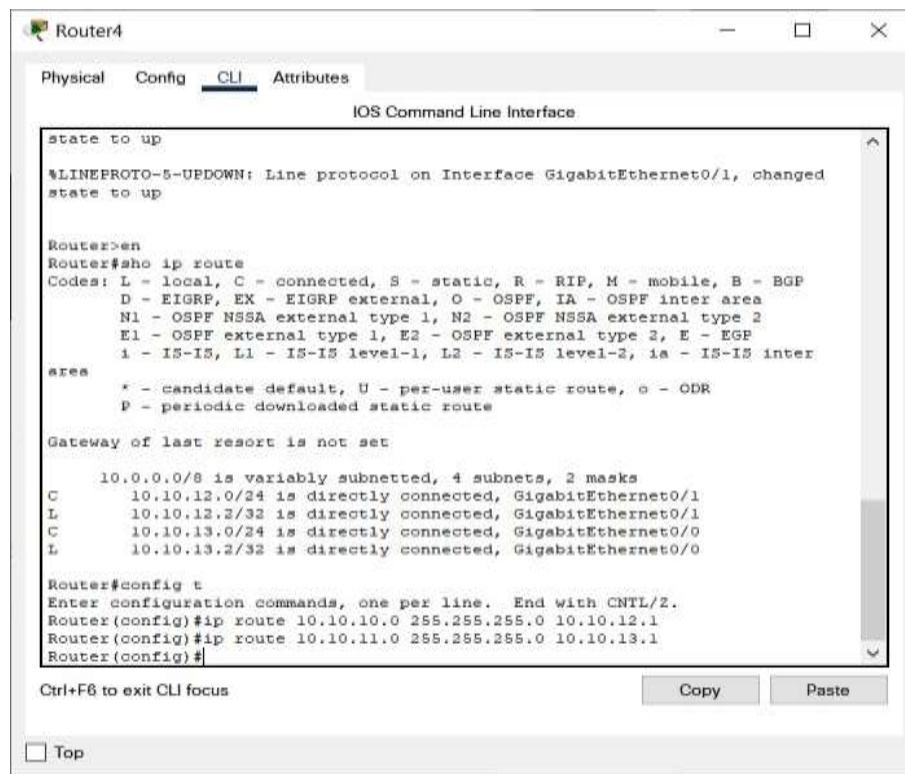
Ctrl+F6 to exit CLI focus
Copy Paste
Top
```

### Configuring router 3:





## Configuring router 4:



The screenshot shows the Router4 CLI window with the 'CLI' tab selected. The window title is 'Router4'. The tabs are 'Physical', 'Config', 'CLI', and 'Attributes'. The main text area displays the following content:

```
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed
state to up

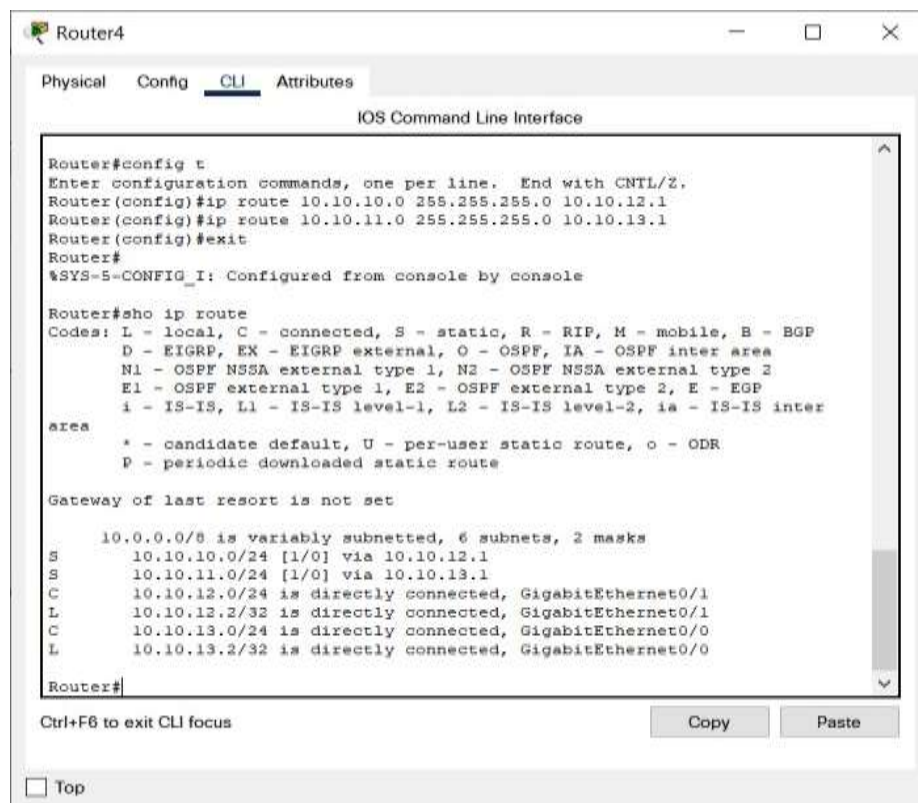
Router>en
Router#sho ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 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

      10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C       10.10.12.0/24 is directly connected, GigabitEthernet0/1
L       10.10.12.3/32 is directly connected, GigabitEthernet0/1
C       10.10.13.0/24 is directly connected, GigabitEthernet0/0
L       10.10.13.2/32 is directly connected, GigabitEthernet0/0

Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 10.10.10.0 255.255.255.0 10.10.12.1
Router(config)#ip route 10.10.11.0 255.255.255.0 10.10.13.1
Router(config)#
```

At the bottom of the window, there is a 'Ctrl+F6 to exit CLI focus' label and two buttons: 'Copy' and 'Paste'. A 'Top' button is also visible at the bottom left.



The screenshot shows the Router4 CLI window with the 'CLI' tab selected. The window title is 'Router4'. The tabs are 'Physical', 'Config', 'CLI', and 'Attributes'. The main text area displays the following content:

```
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 10.10.10.0 255.255.255.0 10.10.12.1
Router(config)#ip route 10.10.11.0 255.255.255.0 10.10.13.1
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#sho ip route
Codes: L - local, C - connected, S - static, 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

      10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
S       10.10.10.0/24 [1/0] via 10.10.12.1
S       10.10.11.0/24 [1/0] via 10.10.13.1
C       10.10.12.0/24 is directly connected, GigabitEthernet0/1
L       10.10.12.3/32 is directly connected, GigabitEthernet0/1
C       10.10.13.0/24 is directly connected, GigabitEthernet0/0
L       10.10.13.2/32 is directly connected, GigabitEthernet0/0

Router#
```

At the bottom of the window, there is a 'Ctrl+F6 to exit CLI focus' label and two buttons: 'Copy' and 'Paste'. A 'Top' button is also visible at the bottom left.