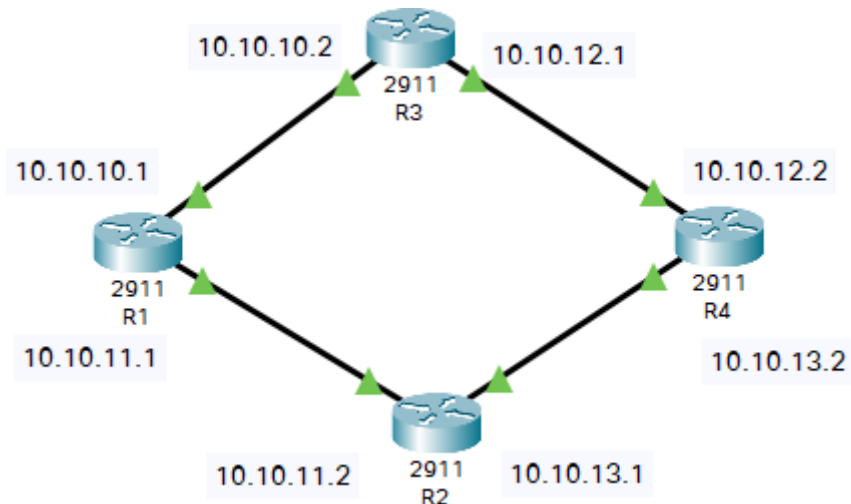


Name : Brijesh Rameshbhai Rohit

Admission number : U19CS009

CN-ASSIGNMENT-07

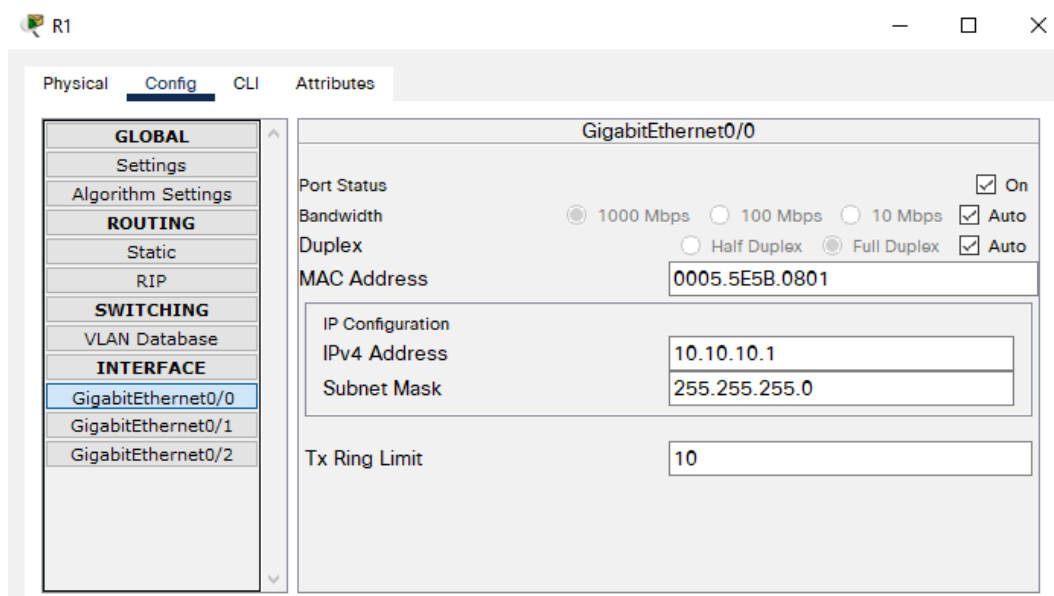
1) Create the below network, which follows static routing.



Create the same network in two different ways,

1)Configuring IP address

from GUI Router 1:



R1

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

GigabitEthernet0/1

Port Status ☒ On

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

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0005.5E5B.0802

IP Configuration

IPv4 Address 10.10.11.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Static Routing:

R1

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

Static Routes

Network 10.10.13.0

Mask 255.255.255.0

Next Hop 10.10.11.2

Add

Network Address

10.10.12.0/24 via 10.10.10.2

10.10.13.0/24 via 10.10.11.2

Remove

Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
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)#
```

R1

Physical Config **CLI** Attributes

IOS Command Line Interface

```

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
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)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show 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 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
S       10.10.12.0/24 [1/0] via 10.10.10.2
S       10.10.13.0/24 [1/0] via 10.10.11.2

Router#

```

Ctrl+F6 to exit CLI focus

Copy Paste

Router 2:

R2

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings

ROUTING

- Static
- RIP

SWITCHING

- VLAN Database

INTERFACE

- GigabitEthernet0/0**
- GigabitEthernet0/1
- GigabitEthernet0/2

GigabitEthernet0/0

Port Status ☒ On

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

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0030.F2BC.D101

IP Configuration

IPv4 Address 10.10.13.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

R2

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

GigabitEthernet0/1

Port Status ☒ On

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

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0030.F2BC.D102

IP Configuration

IPv4 Address 10.10.11.2

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Static Routing:

R2

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

Static Routes

Network 10.10.10.0

Mask 255.255.255.0

Next Hop 10.10.11.1

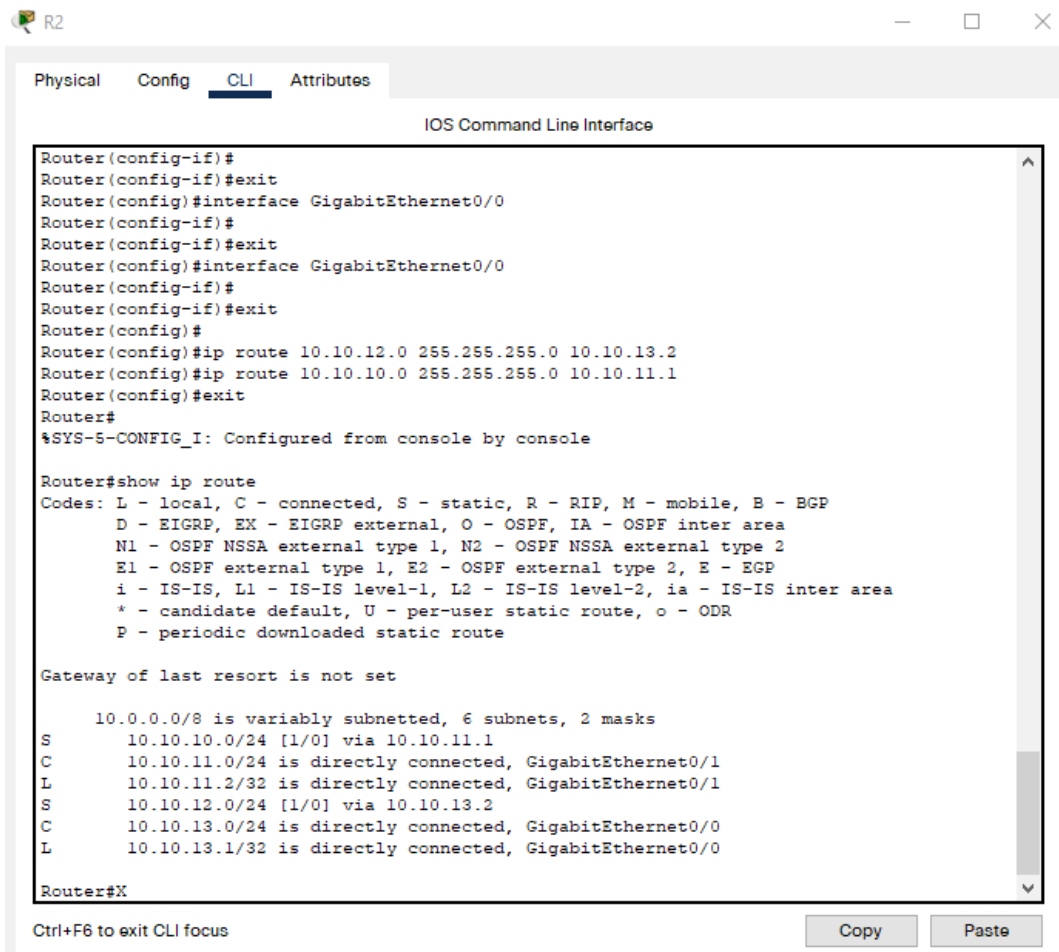
Add

Network Address

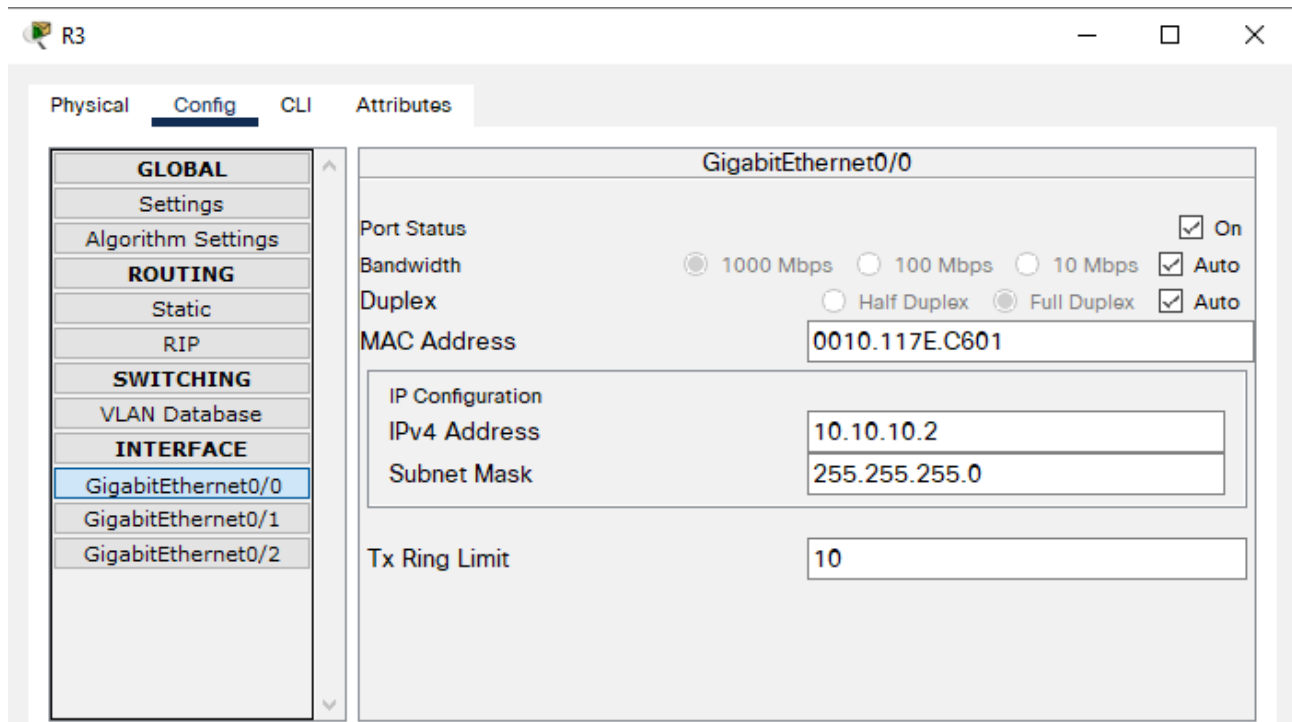
10.10.12.0/24 via 10.10.13.2

10.10.10.0/24 via 10.10.11.1

Remove



Router 3:



Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

GigabitEthernet0/1

Port Status ☒ On

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

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0010.117E.C602

IP Configuration

IPv4 Address 10.10.12.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Static Routing:

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

Static Routes

Network 10.10.11.0

Mask 255.255.255.0

Next Hop 10.10.10.1

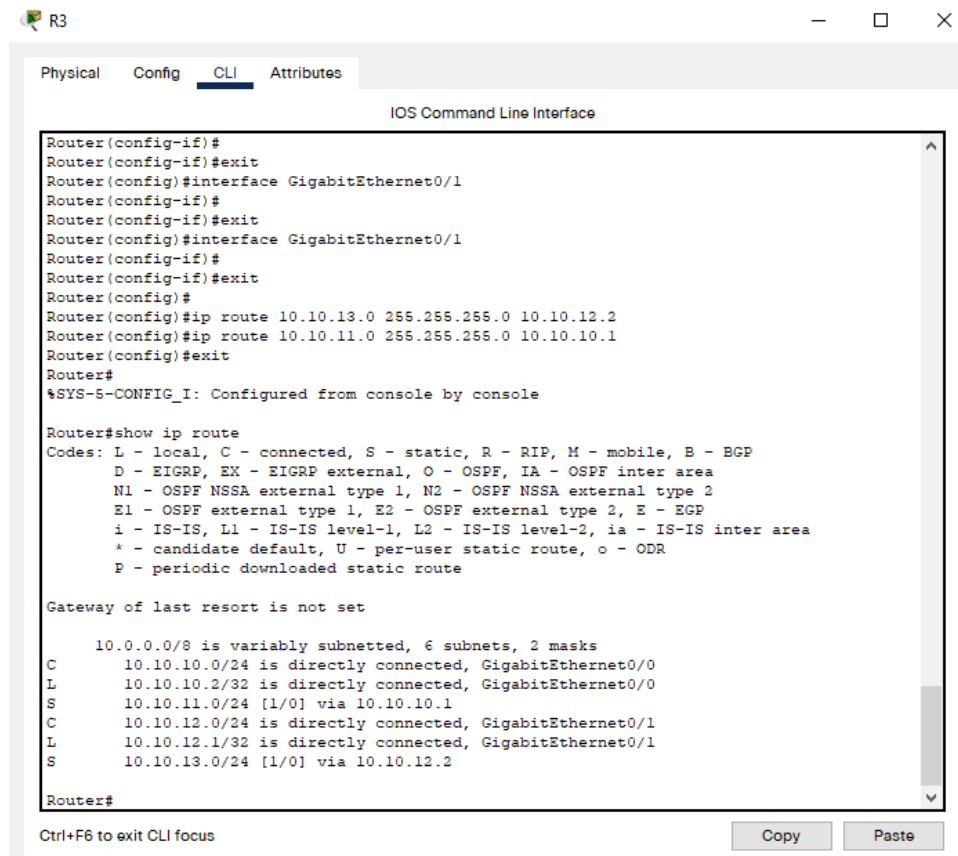
Add

Network Address

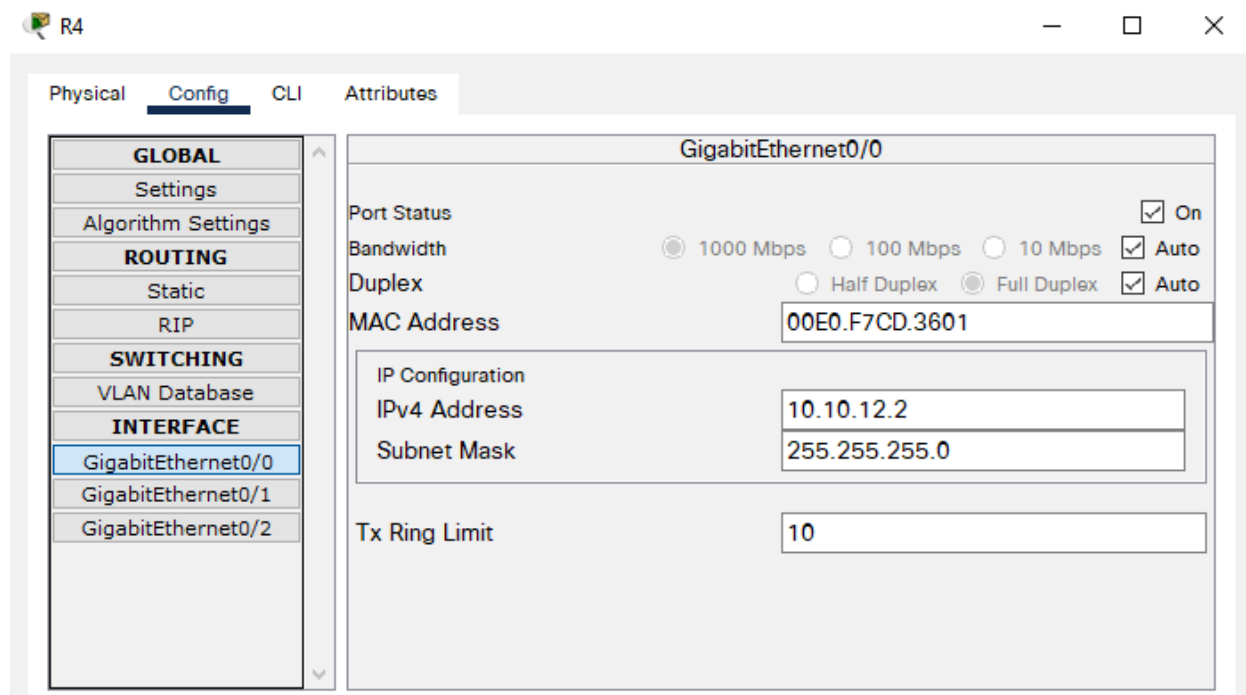
10.10.13.0/24 via 10.10.12.2

10.10.11.0/24 via 10.10.10.1

Remove



Router 4:



R4

Physical

Config

CLI

Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

GigabitEthernet0/1

Port Status

☒ On

Bandwidth

☒ 1000 Mbps☐ 100 Mbps☐ 10 Mbps

Duplex

☐ Half Duplex☒ Full Duplex

MAC Address

00E0.F7CD.3602

IP Configuration

IPv4 Address

10.10.13.2

Subnet Mask

255.255.255.0

Tx Ring Limit

10

Static Routing:

R4

Physical

Config

CLI

Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

Static Routes

Network

10.10.11.0

Mask

255.255.255.0

Next Hop

10.10.13.1

Add

Network Address

10.10.10.0/24 via 10.10.12.1

10.10.11.0/24 via 10.10.13.1

Remove

R4

Physical Config CLI Attributes

IOS Command Line Interface

```
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#
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#show 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

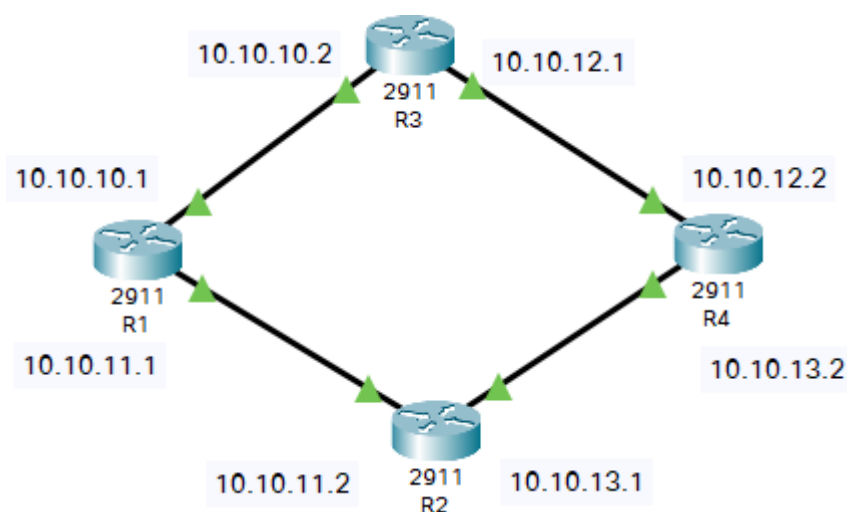
Gateway of last resort is not set

 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, GigabitEthernet0/0
L    10.10.12.2/32 is directly connected, GigabitEthernet0/0
C    10.10.13.0/24 is directly connected, GigabitEthernet0/1
L    10.10.13.2/32 is directly connected, GigabitEthernet0/1
Router#
```

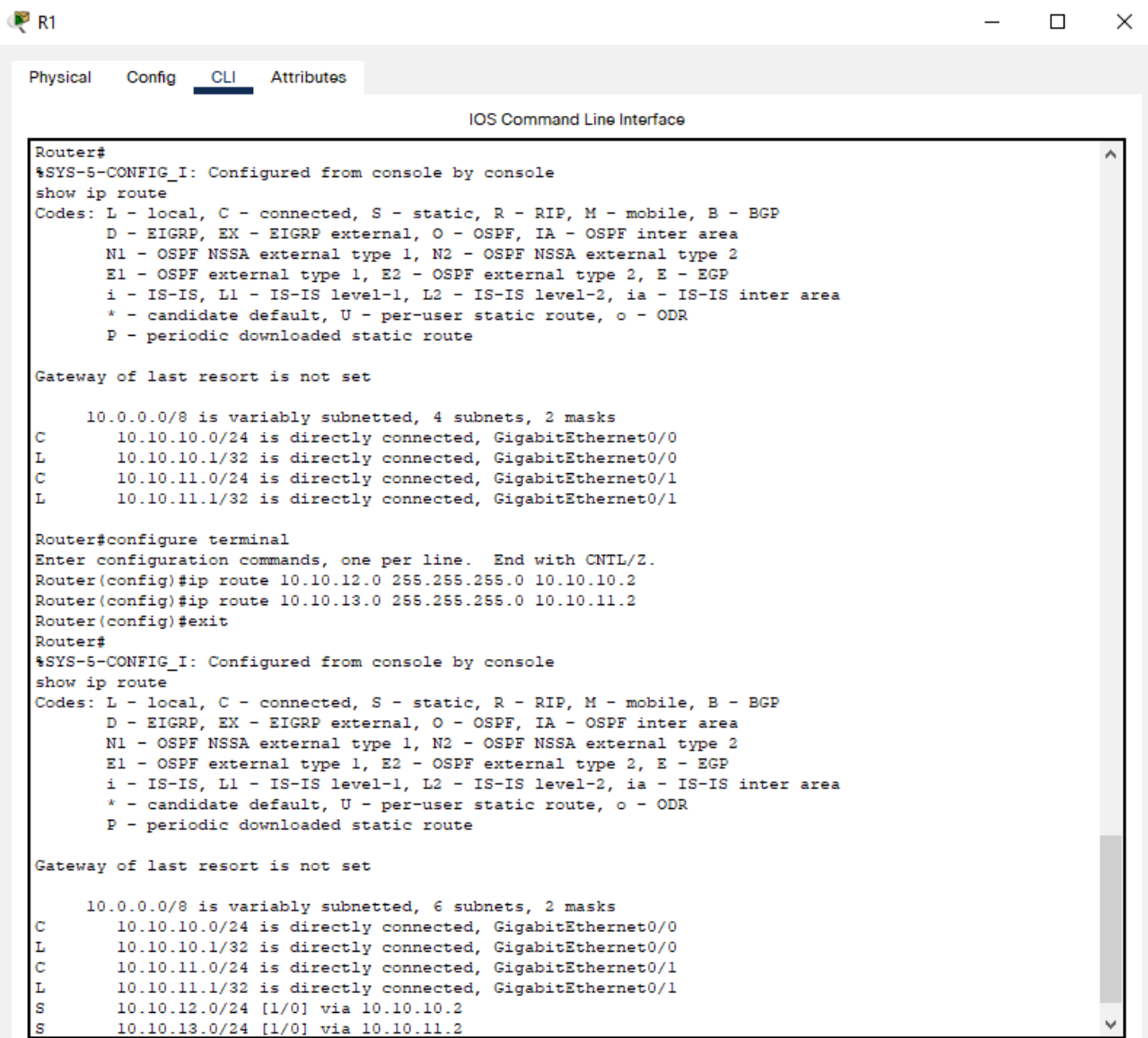
Ctrl+F6 to exit CLI focus

Copy Paste

2) Command line.



Router 1:



```
Router#
%SYS-5-CONFIG_I: Configured from console by console
show 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#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)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show 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 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
S       10.10.12.0/24 [1/0] via 10.10.10.2
S       10.10.13.0/24 [1/0] via 10.10.11.2
```

Router 2:

 R2

PhysicalConfigCLIAttributes

IOS Command Line Interface

```
Router#
%SYS-5-CONFIG_I: Configured from console by console
show 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       10.10.11.0/24 is directly connected, GigabitEthernet0/1
L       10.10.11.2/32 is directly connected, GigabitEthernet0/1
C       10.10.13.0/24 is directly connected, GigabitEthernet0/0
L       10.10.13.1/32 is directly connected, GigabitEthernet0/0

Router#configure terminal
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
show 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 10.10.11.1
C       10.10.11.0/24 is directly connected, GigabitEthernet0/1
L       10.10.11.2/32 is directly connected, GigabitEthernet0/1
S       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
```

Ctrl+F6 to exit CLI focus

CopyPaste

☐ Top

Router 3:

R3

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router#
%SYS-5-CONFIG_I: Configured from console by console
show 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       10.10.10.2/32 is directly connected, GigabitEthernet0/0
C       10.10.12.0/24 is directly connected, GigabitEthernet0/1
L       10.10.12.1/32 is directly connected, GigabitEthernet0/1

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 10.10.11.0 255.255.255.0 10.10.10.1
Router(config)#ip route 10.10.13.0 255.255.255.0 10.10.12.2
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show 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 is directly connected, GigabitEthernet0/0
L       10.10.10.2/32 is directly connected, GigabitEthernet0/0
S       10.10.11.0/24 [1/0] via 10.10.10.1
C       10.10.12.0/24 is directly connected, GigabitEthernet0/1
L       10.10.12.1/32 is directly connected, GigabitEthernet0/1
S       10.10.13.0/24 [1/0] via 10.10.12.2
```

Router 4:

 R4

PhysicalConfigCLIAttributes

IOS Command Line Interface

```
Router#
%SYS-5-CONFIG_I: Configured from console by console
show 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       10.10.12.2/32 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#configure terminal
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
show 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       10.10.12.2/32 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
```

Ctrl+F6 to exit CLI focus

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