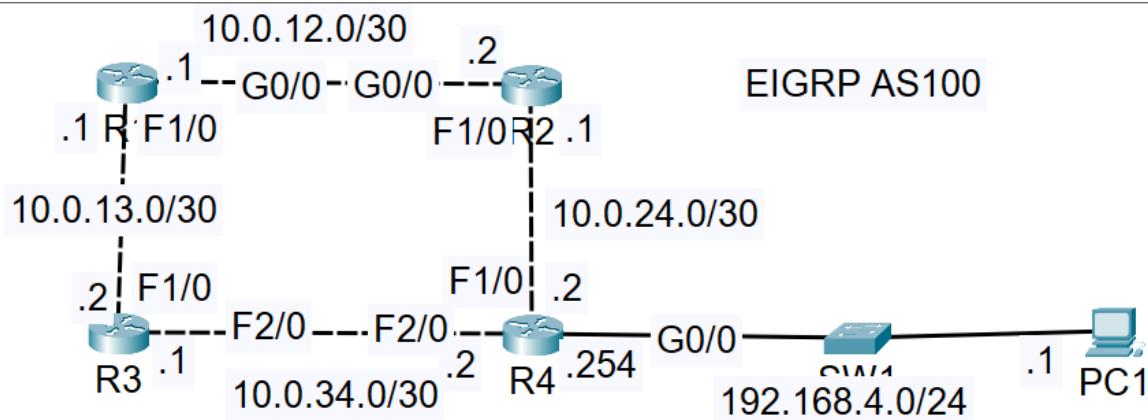


Network Topology:



R4 CLI:

R4

Physical | Config | **CLI** | Attributes

IOS Command Line Interface

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R4
R4(config)#int g0/0
R4(config-if)#ip address 192.168.4.254 255.255.255.0
R4(config-if)#no shutdown

R4(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

R4(config-if)#int f1/0
R4(config-if)#ip address 10.0.24.2 255.255.255.252
R4(config-if)#no shutdown

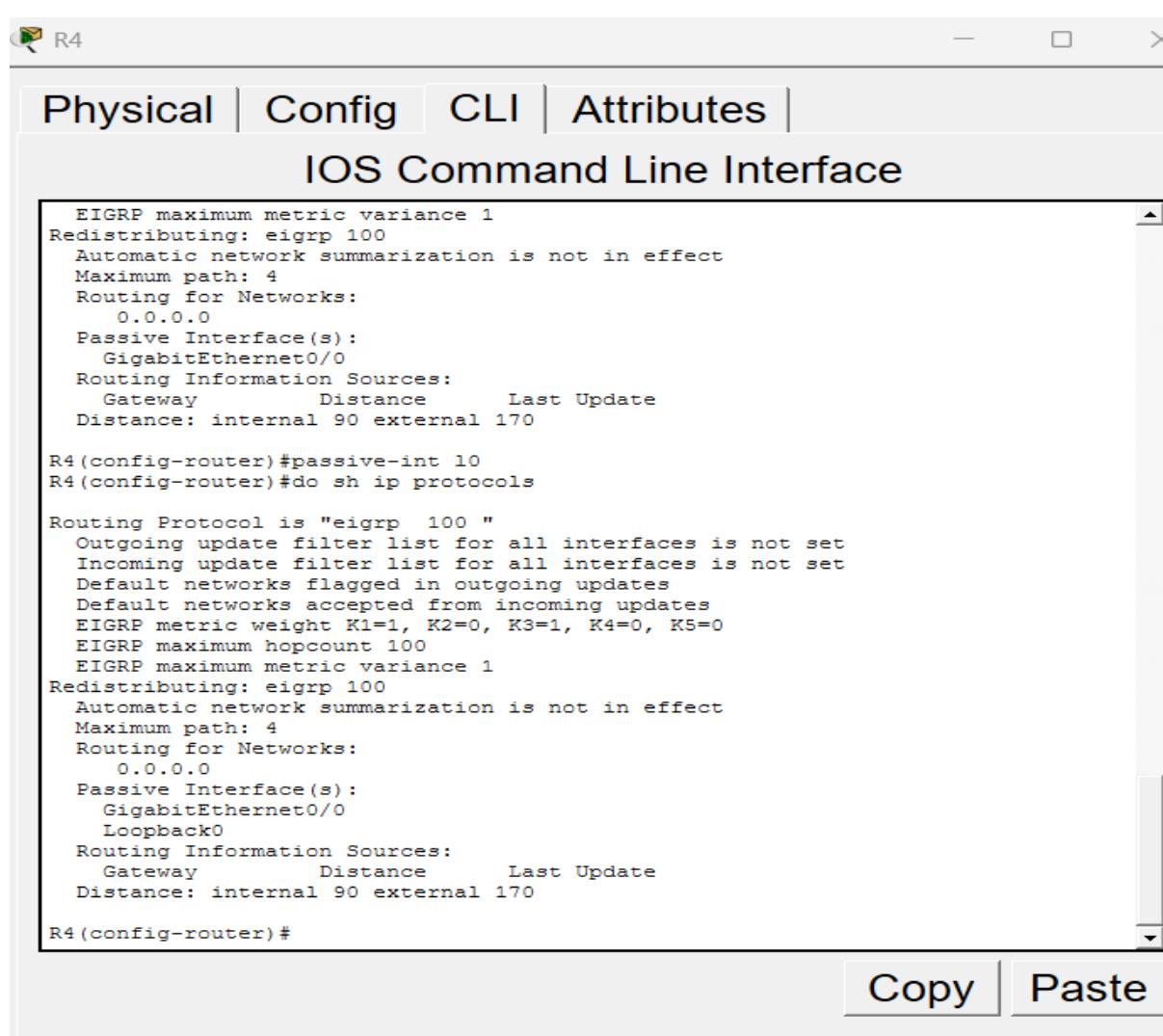
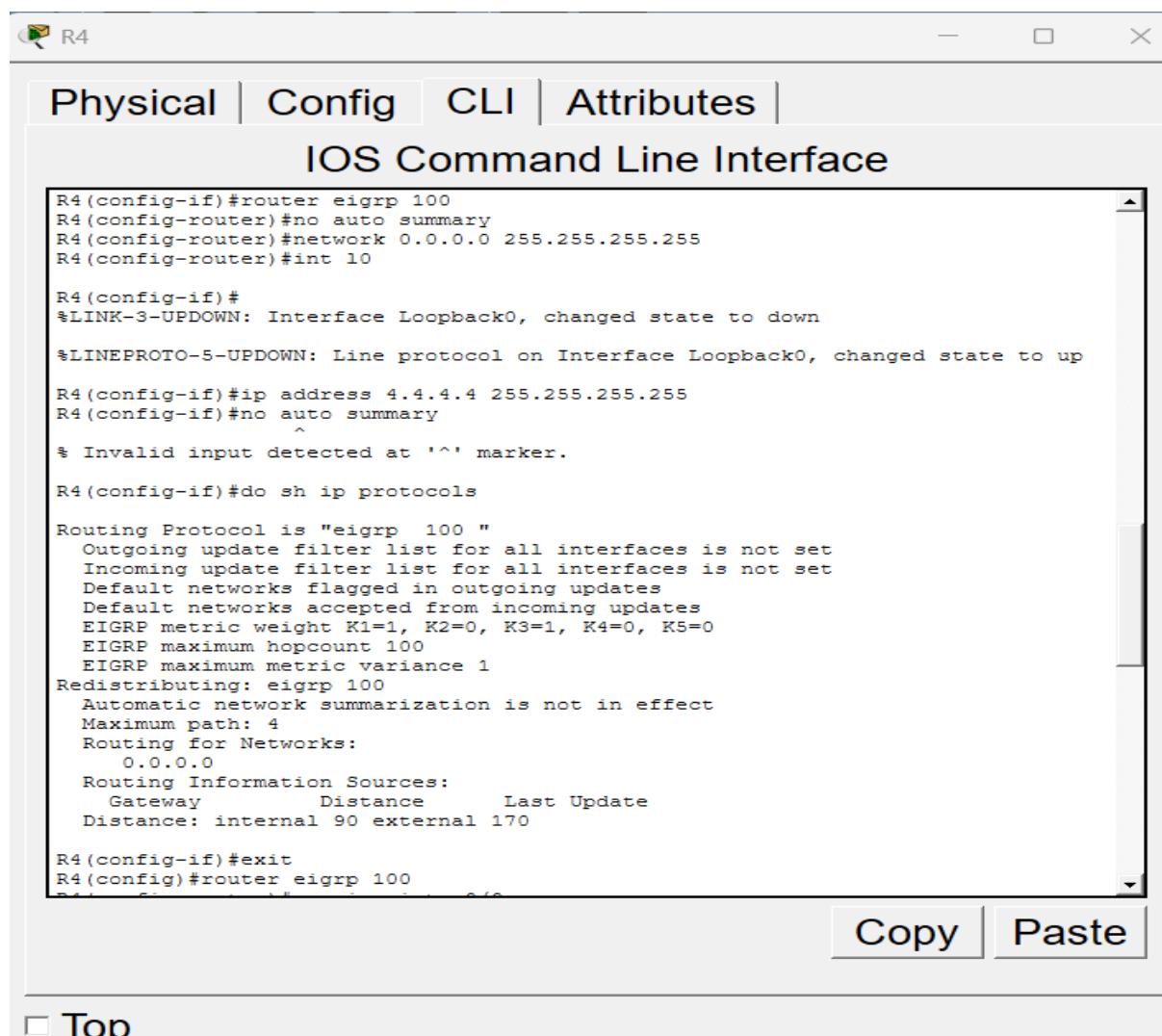
R4(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

R4(config-if)#int f2/0
R4(config-if)#ip address 10.0.34.2 255.255.255.252
R4(config-if)#no shutdown

R4(config-if)#
%LINK-5-CHANGED: Interface FastEthernet2/0, changed state to up

R4(config-if)#do sh ip int br
Interface          IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0  192.168.4.254  YES manual up        up
FastEthernet1/0    10.0.24.2     YES manual up        down
FastEthernet2/0    10.0.34.2     YES manual up        down
R4(config-if)#router eigrp 100
R4(config-router)#no auto summary
R4(config-router)#network 0 0 0 0 255 255 255 255
```

[Top](#)



R2 CLI:

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int g0/0
Router(config-if)#ip address 10.0.12.2 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

Router(config-if)#int f1/0
Router(config-if)#ip address 10.0.24.1 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Router(config-if)#int 10

Router(config-if)#
%LINK-3-UPDOWN: Interface Loopback0, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

Router(config-if)#ip address 2.2.2.2 255.255.255.255
Router(config-if)#do sh ip int br
Interface          IP-Address      OK? Method Status          Protocol
GigabitEthernet0/0  10.0.12.2       YES manual up           up
FastEthernet1/0     10.0.24.1       YES manual up           up
FastEthernet2/0     unassigned      YES unset administratively down down
Loopback0          2.2.2.2         YES manual up           up
```

```
Loopback0          2.2.2.2        YES manual up           up
Router(config-if)#router eigrp 100
Router(config-router)#network 10.0.12.0 0.0.0.3
Router(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 10.0.12.1 (GigabitEthernet0/0) is up: new adjacency

Router(config-router)#network 10.0.34.0 0.0.0.3
Router(config-router)#no network 10.0.34.0 0.0.0.3
Router(config-router)#network 10.0.24.0 0.0.0.3
Router(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 10.0.24.2 (FastEthernet1/0) is up: new adjacency

Router(config-router)#network 2.2.2.2 0.0.0.0
Router(config-router)#no auto summary
Router(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 10.0.12.1 (GigabitEthernet0/0) resync: summary configured

%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 10.0.24.2 (FastEthernet1/0) resync: summary configured

Router(config-router)#do sh ip protocols

Routing Protocol is "eigrp 100 "
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
Redistributing: eigrp 100
  Automatic network summarization is not in effect
  Maximum path: 4
  Routing for Networks:
    10.0.12.0/30
    10.0.24.0/30
```

Physical | Config | CLI | Attributes |

IOS Command Line Interface

```
Routing for Networks:
  10.0.12.0/30
  10.0.24.0/30
  2.2.2.2/32
Routing Information Sources:
  Gateway      Distance      Last Update
  10.0.12.1      90          2945340
  10.0.24.2      90          2991268
  Distance: internal 90 external 170

Router(config-router)#passive-int 10
Router(config-router)#do sh ip protocols

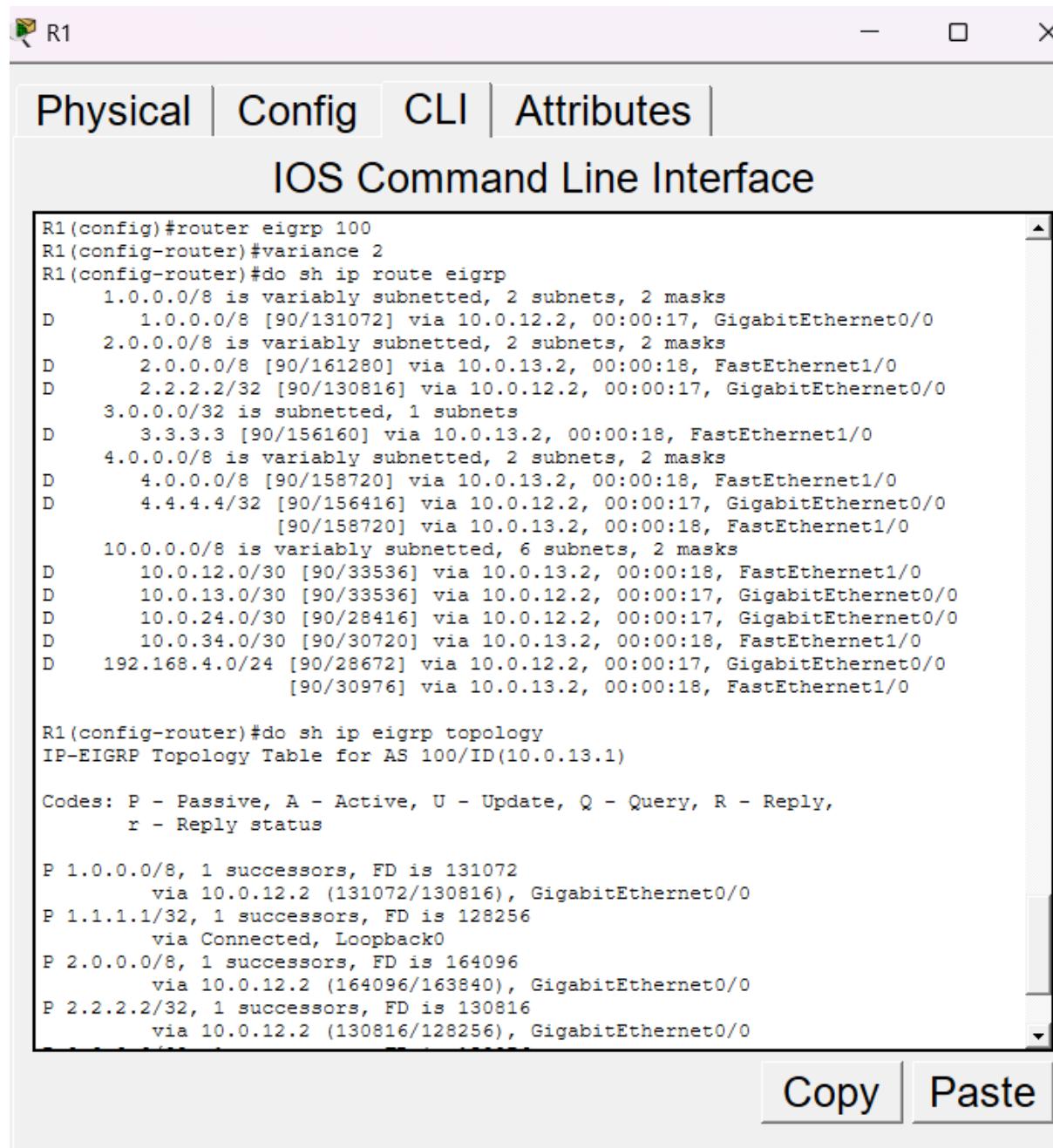
  Routing Protocol is "eigrp 100 "
    Outgoing update filter list for all interfaces is not set
    Incoming update filter list for all interfaces is not set
    Default networks flagged in outgoing updates
    Default networks accepted from incoming updates
    EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
    EIGRP maximum hopcount 100
    EIGRP maximum metric variance 1
  Redistributing: eigrp 100
    Automatic network summarization is not in effect
    Maximum path: 4
  Routing for Networks:
    10.0.12.0/30
    10.0.24.0/30
    2.2.2.2/32
  Passive Interface(s):
    Loopback0
  Routing Information Sources:
    Gateway      Distance      Last Update
    10.0.12.1      90          2945340
    10.0.24.2      90          2991268
--More--
```

Same configurations for R1 & R3

Configure R1 to perform unequal-cost load-balancing when sending network traffic to 192.168.4.0/24

For this, in the R1 CLI:

(config-router)#variance 2



The image shows a screenshot of the Cisco IOS Command Line Interface (CLI) running on a device named R1. The window title is "IOS Command Line Interface". At the top, there are tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" being the active tab. Below the tabs, the title "IOS Command Line Interface" is displayed again. The main area contains the following command-line session:

```
R1(config)#router eigrp 100
R1(config-router)#variance 2
R1(config-router)#do sh ip route eigrp
  1.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
D      1.0.0.0/8 [90/131072] via 10.0.12.2, 00:00:17, GigabitEthernet0/0
  2.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
D      2.0.0.0/8 [90/161280] via 10.0.13.2, 00:00:18, FastEthernet1/0
D      2.2.2.2/32 [90/130816] via 10.0.12.2, 00:00:17, GigabitEthernet0/0
  3.0.0.0/32 is subnetted, 1 subnets
D      3.3.3.3 [90/156160] via 10.0.13.2, 00:00:18, FastEthernet1/0
  4.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
D      4.0.0.0/8 [90/158720] via 10.0.13.2, 00:00:18, FastEthernet1/0
D      4.4.4.4/32 [90/156416] via 10.0.12.2, 00:00:17, GigabitEthernet0/0
      [90/158720] via 10.0.13.2, 00:00:18, FastEthernet1/0
  10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D      10.0.12.0/30 [90/33536] via 10.0.13.2, 00:00:18, FastEthernet1/0
D      10.0.13.0/30 [90/33536] via 10.0.12.2, 00:00:17, GigabitEthernet0/0
D      10.0.24.0/30 [90/28416] via 10.0.12.2, 00:00:17, GigabitEthernet0/0
D      10.0.34.0/30 [90/30720] via 10.0.13.2, 00:00:18, FastEthernet1/0
D      192.168.4.0/24 [90/28672] via 10.0.12.2, 00:00:17, GigabitEthernet0/0
      [90/30976] via 10.0.13.2, 00:00:18, FastEthernet1/0

R1(config-router)#do sh ip eigrp topology
IP-EIGRP Topology Table for AS 100/ID(10.0.13.1)

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - Reply status

P 1.0.0.0/8, 1 successors, FD is 131072
      via 10.0.12.2 (131072/130816), GigabitEthernet0/0
P 1.1.1.1/32, 1 successors, FD is 128256
      via Connected, Loopback0
P 2.0.0.0/8, 1 successors, FD is 164096
      via 10.0.12.2 (164096/163840), GigabitEthernet0/0
P 2.2.2.2/32, 1 successors, FD is 130816
      via 10.0.12.2 (130816/128256), GigabitEthernet0/0
```

At the bottom right of the CLI window, there are "Copy" and "Paste" buttons.