```
Router>en
Router#interface loopback0
                ^
% Invalid input detected at '^' marker.

Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname hq
hq(config)#interface loopback0

hq(config-if)#
%LINK-5-CHANGED: Interface Loopback0, changed state to up

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

hq(config-if)#ip address 192.168.4.1 255.255.255.0
hq(config-if)#interface loopback1

hq(config-if)#
%LINK-5-CHANGED: Interface Loopback1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up

hq(config-if)#ip address 192.168.5.1 255.255.255.0
hq(config-if)#interface loopback2

hq(config-if)#
%LINK-5-CHANGED: Interface Loopback2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback2, changed state to up

hq(config-if)#
```

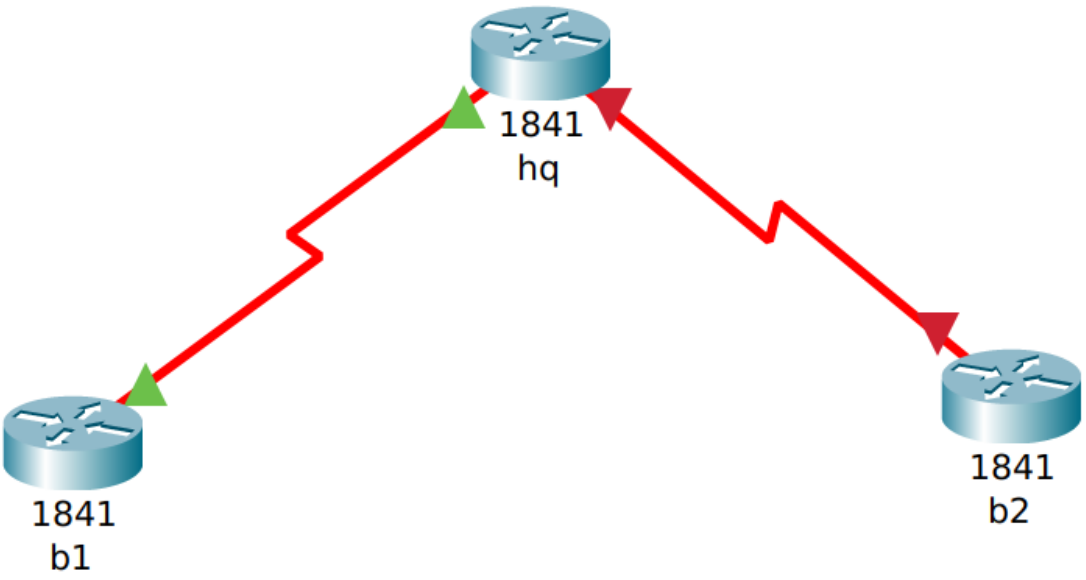
```
hq>en
hq#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
hq(config)#interface serial0/0/0
hq(config-if)#ip address 10.10.10.254 255.255.255.252
hq(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
hq(config-if)#interface serial0/0/1
hq(config-if)#ip address 172.16.100.0 255.255.255.252
Bad mask /30 for address 172.16.100.0
hq(config-if)#ip address 172.16.100.2 255.255.255.252
hq(config-if)# no shut

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

```
hq>en
hq#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
hq(config)#router rip
hq(config-router)#version 2
hq(config-router)#network 192.168.4.0
hq(config-router)#network 192.168.5.0
hq(config-router)#network 192.168.6.0
hq(config-router)#network 10.10.10.252
hq(config-router)#network 172.16.100.2
hq(config-router)#end
```

branch1

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname b1
b1(config)#interface loopback0

b1(config-if)#
%LINK-5-CHANGED: Interface Loopback0, changed state to up

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

b1(config-if)#ip address 192.168.1.0 255.255.255.0
Bad mask /24 for address 192.168.1.0
b1(config-if)#ip address 192.168.1.1 255.255.255.0
b1(config-if)#interface loopback1

b1(config-if)#
%LINK-5-CHANGED: Interface Loopback1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up

b1(config-if)#ip address 192.168.2.1 255.255.255.0
b1(config-if)#interface loopback2

b1(config-if)#
%LINK-5-CHANGED: Interface Loopback2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback2, changed state to up

b1(config-if)#ip address 192.168.3.1 255.255.255.0
b1(config-if)#
```

```
b1(config-if)#ip address 192.168.3.1 255.255.255.0
b1(config-if)#
b1(config-if)#
b1(config-if)#interface serial0/0/0
b1(config-if)#ip address 10.10.10.253 255.255.255.252
b1(config-if)#clock rate 64000
b1(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
b1(config-if)#
```




```
b1(config-if)#do show cdp neighbor
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone
Device ID    Local Intrfce   Holdtme    Capability   Platform    Port ID
hq           Ser 0/0/0        169            R       C1841       Ser 0/0/0
b1(config-if)#
```

```
b1(config)#router rip
b1(config-router)#version 2
b1(config-router)#network 192.168.1.0
b1(config-router)#network 192.168.2.0
b1(config-router)#network 192.168.3.0
```

after ‘show ip route’

```
     10.0.0.0/30 is subnetted, 1 subnets
C       10.10.10.252 is directly connected, Serial0/0/0
C    192.168.1.0/24 is directly connected, Loopback0
C    192.168.2.0/24 is directly connected, Loopback1
C    192.168.3.0/24 is directly connected, Loopback2
```

add a network

```
b1(config)#router rip
b1(config-router)#network 10.10.10.252
b1(config-router)#end
b1#
```

after ‘show ip route’

```
     10.0.0.0/30 is subnetted, 1 subnets
C       10.10.10.252 is directly connected, Serial0/0/0
C    192.168.1.0/24 is directly connected, Loopback0
C    192.168.2.0/24 is directly connected, Loopback1
C    192.168.3.0/24 is directly connected, Loopback2
R    192.168.4.0/24 [120/1] via 10.10.10.254, 00:00:05, Serial0/0/0
R    192.168.5.0/24 [120/1] via 10.10.10.254, 00:00:05, Serial0/0/0
R    192.168.6.0/24 [120/1] via 10.10.10.254, 00:00:05, Serial0/0/0
```

branch2

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname b2
b2(config)#interface loopback0

b2(config-if)#
%LINK-5-CHANGED: Interface Loopback0, changed state to up

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

b2(config-if)#ip address 192.168.7.1 255.255.255.0
b2(config-if)#interface loopback1

b2(config-if)#
%LINK-5-CHANGED: Interface Loopback1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up

b2(config-if)#ip address 192.168
                         ^
% Invalid input detected at '^' marker.

b2(config-if)#ip address 192.168.8.1 255.255.255.0
b2(config-if)#interface loopback2

b2(config-if)#
%LINK-5-CHANGED: Interface Loopback2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback2, changed state to up

b2(config-if)#ip address 192.168.9.1 255.255.255.0
b2(config-if)#
```

```
b2(config-if)#ip address 192.168.9.1 255.255.255.0
b2(config-if)#interface serial0/0/1
b2(config-if)#ip address 172.16.100.1 255.255.255.252
b2(config-if)#clock rate 64000
b2(config-if)#no shut

b2(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up

b2(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1,
changed state to up
```

```
b2(config-if)#router rip
b2(config-router)#version 2
b2(config-router)#network 172.16.100.0
b2(config-router)#
```

after ‘show ip route’

```
b2#show ip route
Codes: C - connected, S - static, I - IGRP, 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

R    10.0.0.0/8 [120/1] via 172.16.100.2, 00:00:25, Serial0/0/1
     172.16.0.0/30 is subnetted, 1 subnets
C       172.16.100.0 is directly connected, Serial0/0/1
R    192.168.1.0/24 [120/2] via 172.16.100.2, 00:00:25, Serial0/0/1
R    192.168.2.0/24 [120/2] via 172.16.100.2, 00:00:25, Serial0/0/1
R    192.168.3.0/24 [120/2] via 172.16.100.2, 00:00:25, Serial0/0/1
R    192.168.4.0/24 [120/1] via 172.16.100.2, 00:00:25, Serial0/0/1
R    192.168.5.0/24 [120/1] via 172.16.100.2, 00:00:25, Serial0/0/1
R    192.168.6.0/24 [120/1] via 172.16.100.2, 00:00:25, Serial0/0/1
C    192.168.7.0/24 is directly connected, Loopback0
C    192.168.8.0/24 is directly connected, Loopback1
C    192.168.9.0/24 is directly connected, Loopback2
```

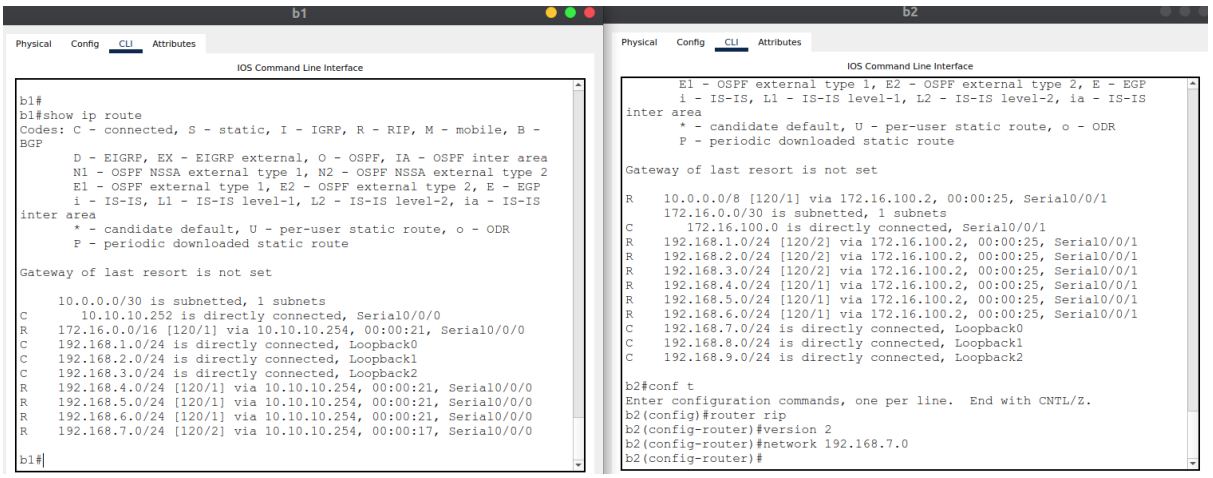
on branch1

```
b1>en
b1#show ip route
Codes: C - connected, S - static, I - IGRP, 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

     10.0.0.0/30 is subnetted, 1 subnets
C       10.10.10.252 is directly connected, Serial0/0/0
R    172.16.0.0/16 [120/1] via 10.10.10.254, 00:00:09, Serial0/0/0
C    192.168.1.0/24 is directly connected, Loopback0
C    192.168.2.0/24 is directly connected, Loopback1
C    192.168.3.0/24 is directly connected, Loopback2
R    192.168.4.0/24 [120/1] via 10.10.10.254, 00:00:09, Serial0/0/0
R    192.168.5.0/24 [120/1] via 10.10.10.254, 00:00:09, Serial0/0/0
R    192.168.6.0/24 [120/1] via 10.10.10.254, 00:00:09, Serial0/0/0
```

write on b2

```
b2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
b2(config)#router rip
b2(config-router)#version 2
b2(config-router)#network 192.168.7.0
b2(config-router)#
```

and then we can see on branch1:



then on branch2 we write

```
b2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
b2(config)#router rip
b2(config-router)#version 2
b2(config-router)#network 192.168.7.0
b2(config-router)#network 192.168.8.0
```

network 192.168.8.0
and then on branch1 we can see

```
     10.0.0.0/30 is subnetted, 1 subnets
C       10.10.10.252 is directly connected, Serial0/0/0
R    172.16.0.0/16 [120/1] via 10.10.10.254, 00:00:04, Serial0/0/0
C    192.168.1.0/24 is directly connected, Loopback0
C    192.168.2.0/24 is directly connected, Loopback1
C    192.168.3.0/24 is directly connected, Loopback2
R    192.168.4.0/24 [120/1] via 10.10.10.254, 00:00:04, Serial0/0/0
R    192.168.5.0/24 [120/1] via 10.10.10.254, 00:00:04, Serial0/0/0
R    192.168.6.0/24 [120/1] via 10.10.10.254, 00:00:04, Serial0/0/0
R    192.168.7.0/24 [120/2] via 10.10.10.254, 00:00:04, Serial0/0/0
R    192.168.8.0/24 [120/2] via 10.10.10.254, 00:00:04, Serial0/0/0
```

do just the same with 192.168.9.0 and get

IOS Command Line Interface

```
b1#show ip route
Codes: C - connected, S - static, I - IGRP, 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

     10.0.0.0/30 is subnetted, 1 subnets
C       10.10.10.252 is directly connected, Serial0/0/0
R    172.16.0.0/16 [120/1] via 10.10.10.254, 00:00:06, Serial0/0/0
C    192.168.1.0/24 is directly connected, Loopback0
C    192.168.2.0/24 is directly connected, Loopback1
C    192.168.3.0/24 is directly connected, Loopback2
R    192.168.4.0/24 [120/1] via 10.10.10.254, 00:00:06, Serial0/0/0
R    192.168.5.0/24 [120/1] via 10.10.10.254, 00:00:06, Serial0/0/0
R    192.168.6.0/24 [120/1] via 10.10.10.254, 00:00:06, Serial0/0/0
R    192.168.7.0/24 [120/2] via 10.10.10.254, 00:00:06, Serial0/0/0
R    192.168.8.0/24 [120/2] via 10.10.10.254, 00:00:06, Serial0/0/0
R    192.168.9.0/24 [120/2] via 10.10.10.254, 00:00:03, Serial0/0/0
 --More--
```

IOS Command Line Interface

```
R    192.168.5.0/24 [120/1] via 172.16.100.2, 00:00:25,
R    192.168.6.0/24 [120/1] via 172.16.100.2, 00:00:25,
C    192.168.7.0/24 is directly connected, Loopback0
C    192.168.8.0/24 is directly connected, Loopback1
C    192.168.9.0/24 is directly connected, Loopback2

b2#conf t
Enter configuration commands, one per line.  End with CN
b2(config)#router rip
b2(config-router)#version 2
b2(config-router)#network 192.168.7.0
b2(config-router)#network 192.168.8.0
b2(config-router)#
b2#
%SYS-5-CONFIG_I: Configured from console by console

b2#
b2#conf t
Enter configuration commands, one per line.  End with CN
b2(config)#network 192.168.9.0
                  ^
% Invalid input detected at '^' marker.

b2(config)#router rip
b2(config-router)#version 2
b2(config-router)#network 192.168.9.0
b2(config-router)#
```

https://community.cisco.com/t5/switching/why-doesn-t-router-table-rip-show-correct-network-address/td-p/1806092