16 Routing Fundamentals - Answer Key

In this lab you will configure and verify connected, local, static, summary and default routes. You will also examine the effect of longest prefix match routing.

All routers and switches are unconfigured at the start of the lab. The PCs have been configured with their network settings.

Connected and Local Routes

1) Say no when asked if you would like to enter the initial configuration dialog on each router.

```
Would you like to enter the initial configuration dialog?
[yes/no]: no
```

2) Configure hostnames on the routers according to the Lab Topology diagram.

On R1:

```
Router(config)# hostname R1
```

Repeat to configure the correct hostname on the other routers.

3) Configure IP addresses on R1 according to the Lab Topology diagram

```
R1(config)#int f0/0
R1(config-if)#ip address 10.0.0.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#int f0/1
R1(config-if)#ip address 10.0.1.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#int f1/0
R1(config-if)#ip address 10.0.2.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#int f1/1
R1(config-if)#ip address 10.0.3.1 255.255.255.0
R1(config-if)#no shut
```

4) Verify routes have been automatically added for the connected and local networks (note that local routes only appear from IOS 15)

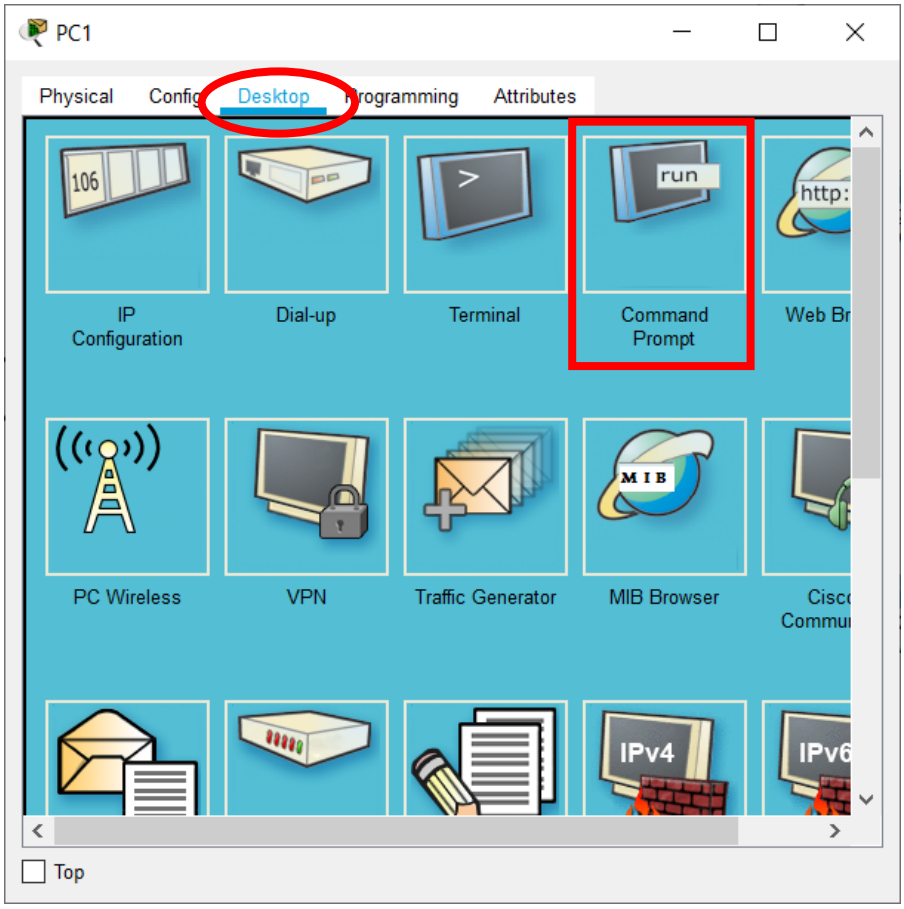
```
Router#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile,
B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - 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, 4 subnets, 2 masks
C 10.0.1.0/24 is directly connected, FastEthernet0/1
L 10.0.1.1/32 is directly connected, FastEthernet0/1
C 10.0.2.0/24 is directly connected, FastEthernet1/0
L 10.0.2.1/32 is directly connected, FastEthernet1/0
```

5) Do you see routes for all networks that R1 is directly connected to? Why or why not?

You cannot see routes for the links connected to R2 and R5 (10.0.0.0/24 and 10.0.3.0/24). The interfaces on R2 and R5 are shutdown by default so the links are down. Both sides of the link must be up for it to be live. A router will not insert routes in its routing table which use links which are down.

You can see routes for the links which are connected to the switches SW1 and SW2 (10.0.1.0/24 and 10.0.2.0/24). Switch ports are not shutdown by default so those links are up.

6) Should you be able to ping from PC1 to PC2? Verify this.
(Click on PC1 then 'Desktop' and 'Command Prompt' to access its command line interface.)



Ping from PC1 to PC2 should be successful as both PCs are in networks which R1 is directly connected to.

```
C:\>ping 10.0.2.10

Pinging 10.0.2.10 with 32 bytes of data:

Reply from 10.0.2.10: bytes=32 time<1ms TTL=127
Reply from 10.0.2.10: bytes=32 time<1ms TTL=127
Reply from 10.0.2.10: bytes=32 time<1ms TTL=127
Reply from 10.0.2.10: bytes=32 time=1ms TTL=127

Ping statistics for 10.0.2.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
     Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

7) Verify the traffic path from PC1 to PC2. Use the ‘tracert’ command.

The ping went via R1 at 10.0.1.1

```
C:\>tracert 10.0.2.10

Tracing route to 10.0.2.10 over a maximum of 30 hops:

1 0 ms 0 ms 0 ms 10.0.1.1
2 0 ms 0 ms 0 ms 10.0.2.10

     Trace complete.
```

8) Should you be able to ping from PC1 to PC3? Verify this.

Ping from PC1 to PC3 should fail as R1 does not have a route to the 10.1.2.0 network.

```
C:\>ping 10.1.2.10

Pinging 10.1.2.10 with 32 bytes of data:

Reply from 10.0.1.1: Destination host unreachable.
Request timed out.
Reply from 10.0.1.1: Destination host unreachable.
Reply from 10.0.1.1: Destination host unreachable.

Ping statistics for 10.1.2.10:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss)
```

Static Routes

9) Configure IP addresses on R2, R3 and R4 according to the Lab Topology diagram. Do not configure the Internet FastEthernet 1/1 interface on R4. Do not configure R5.

```
R2(config)#int f0/0
R2(config-if)#ip add 10.0.0.2 255.255.255.0
R2(config-if)#no shut
R2(config-if)#int f0/1
R2(config-if)#ip add 10.1.0.2 255.255.255.0
R2(config-if)#no shut

R3(config)#int f0/1
R3(config-if)#ip add 10.1.0.1 255.255.255.0
R3(config-if)#no shut
R3(config-if)#int f0/0
R3(config-if)#ip add 10.1.1.2 255.255.255.0
R3(config-if)#no shut

R4(config)#int f0/0
R4(config-if)#ip add 10.1.1.1 255.255.255.0
R4(config-if)#no shut
R4(config-if)#int f0/1
R4(config-if)#ip add 10.1.2.1 255.255.255.0
R4(config-if)#no shut
R4(config-if)#int f1/0
R4(config-if)#ip add 10.1.3.1 255.255.255.0
R4(config-if)#no shut
```

10) Verify PC3 can ping its default gateway at 10.1.2.1

```
C:\>ping 10.1.2.1

Pinging 10.1.2.1 with 32 bytes of data:

Reply from 10.1.2.1: bytes=32 time<1ms TTL=255
Reply from 10.1.2.1: bytes=32 time<1ms TTL=255
Reply from 10.1.2.1: bytes=32 time<1ms TTL=255
Reply from 10.1.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 10.1.2.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

11) Configure static routes on R1, R2, R3 and R4 to allow connectivity between all their subnets. Use /24 prefixes for each network.

```
R1(config)#ip route 10.1.0.0 255.255.255.0 10.0.0.2
R1(config)#ip route 10.1.1.0 255.255.255.0 10.0.0.2
R1(config)#ip route 10.1.2.0 255.255.255.0 10.0.0.2
R1(config)#ip route 10.1.3.0 255.255.255.0 10.0.0.2

R2(config)#ip route 10.0.1.0 255.255.255.0 10.0.0.1
R2(config)#ip route 10.0.2.0 255.255.255.0 10.0.0.1
R2(config)#ip route 10.0.3.0 255.255.255.0 10.0.0.1
R2(config)#ip route 10.1.1.0 255.255.255.0 10.1.0.1
R2(config)#ip route 10.1.2.0 255.255.255.0 10.1.0.1
R2(config)#ip route 10.1.3.0 255.255.255.0 10.1.0.1

R3(config)#ip route 10.0.0.0 255.255.255.0 10.1.0.2
R3(config)#ip route 10.0.1.0 255.255.255.0 10.1.0.2
R3(config)#ip route 10.0.2.0 255.255.255.0 10.1.0.2
R3(config)#ip route 10.0.3.0 255.255.255.0 10.1.0.2
R3(config)#ip route 10.1.2.0 255.255.255.0 10.1.1.1
R3(config)#ip route 10.1.3.0 255.255.255.0 10.1.1.1

R4(config)#ip route 10.1.0.0 255.255.255.0 10.1.1.2
R4(config)#ip route 10.0.0.0 255.255.255.0 10.1.1.2
R4(config)#ip route 10.0.1.0 255.255.255.0 10.1.1.2
R4(config)#ip route 10.0.2.0 255.255.255.0 10.1.1.2
R4(config)#ip route 10.0.3.0 255.255.255.0 10.1.1.2
```

12) Verify connectivity between PC1, PC2 and PC3.

Ping PC2 and PC3 from PC1.

```
C:\>ping 10.0.2.10

Pinging 10.0.2.10 with 32 bytes of data:

Reply from 10.0.2.10: bytes=32 time=1ms TTL=127
Reply from 10.0.2.10: bytes=32 time=1ms TTL=127
Reply from 10.0.2.10: bytes=32 time<1ms TTL=127
Reply from 10.0.2.10: bytes=32 time=1ms TTL=127

Ping statistics for 10.0.2.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
C:\>ping 10.1.2.10

Pinging 10.1.2.10 with 32 bytes of data:

Reply from 10.1.2.10: bytes=32 time<1ms TTL=124
Reply from 10.1.2.10: bytes=32 time=1ms TTL=124
Reply from 10.1.2.10: bytes=32 time<1ms TTL=124
Reply from 10.1.2.10: bytes=32 time<1ms TTL=124

Ping statistics for 10.1.2.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Ping PC3 from PC2.

```
C:\>ping 10.1.2.10

Pinging 10.1.2.10 with 32 bytes of data:

Reply from 10.1.2.10: bytes=32 time<1ms TTL=124
Reply from 10.1.2.10: bytes=32 time<1ms TTL=124
Reply from 10.1.2.10: bytes=32 time<1ms TTL=124
Reply from 10.1.2.10: bytes=32 time=3ms TTL=124

Ping statistics for 10.1.2.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 3ms, Average = 0ms
```

Ping verifies two way reachability so we have now verified full connectivity.

13) Verify the path traffic takes from PC1 to PC3.

```
C:\>tracert 10.1.2.10

Tracing route to 10.1.2.10 over a maximum of 30 hops:

1 0 ms 0 ms 1 ms 10.0.1.1
2 0 ms 1 ms 0 ms 10.0.0.2
3 1 ms 0 ms 0 ms 10.1.0.1
4 1 ms 0 ms 0 ms 10.1.1.1
5 0 ms 0 ms 0 ms 10.1.2.10

Trace complete.
```

The traffic goes via the path R1 > R2 > R3 > R4
Note that IP return traffic (PC3 to PC1 in this case) does not necessarily have to come back along the same path, although it typically will.

Summary Routes

14) Remove all the static routes on R1

```
R1(config)#no ip route 10.1.0.0 255.255.255.0 10.0.0.2
R1(config)#no ip route 10.1.1.0 255.255.255.0 10.0.0.2
R1(config)#no ip route 10.1.2.0 255.255.255.0 10.0.0.2
R1(config)#no ip route 10.1.3.0 255.255.255.0 10.0.0.2
```

15) Verify that PC1 loses connectivity to PC3

C:\>ping 10.1.2.10

```
Pinging 10.1.2.10 with 32 bytes of data:

Reply from 10.0.1.1: Destination host unreachable.
Reply from 10.0.1.1: Destination host unreachable.
Reply from 10.0.1.1: Destination host unreachable.
Reply from 10.0.1.1: Destination host unreachable.

Ping statistics for 10.1.2.10:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss)
```

16) Restore connectivity to all subnets with a single command on R1.

A summary route to 10.1.0.0/16 will add all remote subnets with one command.

```
R1(config)#ip route 10.1.0.0 255.255.0.0 10.0.0.2
```

17) Verify the routing table on R1 does not contain /24 routes to remote subnets.

```
R1#sh 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
       i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
       + - replicated route, % - next hop override
```

```
Gateway of last resort is not set

10.0.0.0/8 is variably subnetted, 7 subnets, 3 masks
C 10.0.0.0/24 is directly connected, FastEthernet0/0
L 10.0.0.1/32 is directly connected, FastEthernet0/0
C 10.0.1.0/24 is directly connected, FastEthernet0/1
L 10.0.1.1/32 is directly connected, FastEthernet0/1
C 10.0.2.0/24 is directly connected, FastEthernet1/0
L 10.0.2.1/32 is directly connected, FastEthernet1/0
S 10.1.0.0/16 [1/0] via 10.0.0.2
```

18) Ensure that connectivity is restored between PC1 and PC3.

```
C:\>ping 10.1.2.10

Pinging 10.1.2.10 with 32 bytes of data:

Reply from 10.1.2.10: bytes=32 time<1ms TTL=124
Reply from 10.1.2.10: bytes=32 time<1ms TTL=124
Reply from 10.1.2.10: bytes=32 time<1ms TTL=124
Reply from 10.1.2.10: bytes=32 time<1ms TTL=124

Ping statistics for 10.1.2.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Longest Prefix Match

19) Configure IP addresses on R5 according to the Lab Topology diagram

```
R5(config)#int f0/0
R5(config-if)#ip add 10.1.3.2 255.255.255.0
R5(config-if)#no shut
R5(config-if)#int f0/1
R5(config-if)#ip add 10.0.3.2 255.255.255.0
R5(config-if)#no shut
```

20) Do not add any additional routes. Does PC1 have reachability to the FastEthernet 0/0 interface on R5? If so, which path will the traffic take?

The summary route on R1 to 10.1.0.0/16 will provide a route to R5 over the path R1 > R2 > R3 > R4 > R5, but R5 does not have a route back to PC1.

A ping from PC1 to 10.1.3.2 on R5 will fail.

```
C:\>ping 10.1.3.2

Pinging 10.1.3.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.1.3.2:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss)
```

Traceroute will show replies from R1 > R2 > R3 > R4 before failing. (You can hit Ctrl-C on the keyboard to break out of the command.)

```
C:\>tracert 10.1.3.2

Tracing route to 10.1.3.2 over a maximum of 30 hops:

1 0 ms 0 ms 1 ms 10.0.1.1
2 0 ms 0 ms 0 ms 10.0.0.2
3 1 ms 0 ms 0 ms 10.1.0.1
4 0 ms 2 ms 0 ms 10.1.1.1
5 * * * Request timed out.
6 *
Control-C
^C
```

21) Ensure reachability over the shortest possible path from R5 to all directly connected networks on R1. Achieve this with a single command.

Add a summary route on R5 for all the directly connected networks on R1.

```
R5(config)#ip route 10.0.0.0 255.255.0.0 10.0.3.1
```

22) Verify the path traffic takes from PC1 to the FastEthernet 0/0 interface on R5.

```
C:\>tracert 10.1.3.2

Tracing route to 10.1.3.2 over a maximum of 30 hops:

1 0 ms 0 ms 0 ms 10.0.1.1
2 0 ms 0 ms 0 ms 10.0.0.2
3 0 ms 0 ms 0 ms 10.1.0.1
4 0 ms 0 ms 1 ms 10.1.1.1
5 * 0 ms 1 ms 10.1.3.2

Trace complete.
```

Traffic takes the path R1 > R2 > R3 > R4 > R5

23) Verify the path the return traffic takes from R5 to PC1.

```
R5#traceroute 10.0.1.10
Type escape sequence to abort.
Tracing the route to 10.0.1.10

1 10.0.3.1 2 msec 0 msec 0 msec
2 10.0.1.10 1 msec 0 msec 1 msec
```

Traffic takes the path R5 > R1. This shows that routers make independent decisions based on their routing table and it is possible (though not common) for return traffic to take an asynchronous path.

24) Ensure that traffic between PC1 and the FastEthernet 0/0 interface on R5 takes the most direct path in both directions.

A route from R1 to the 10.1.3.0/24 network on R5 will achieve this.

```
R1(config)#ip route 10.1.3.0 255.255.255.0 10.0.3.2
```

Traffic to 10.1.3.0/24 will now match two routes in the routing table.

```
S        10.1.0.0/16 [1/0] via 10.0.0.2
S        10.1.3.0/24 [1/0] via 10.0.3.2
```

The new route has a longer prefix match so will be preferred.

25) Verify that traffic between PC1 and the FastEthernet 0/0 interface on R5 takes the most direct path in both directions.

On PC1:

```
C:\>ping 10.1.3.2

Pinging 10.1.3.2 with 32 bytes of data:

Reply from 10.1.3.2: bytes=32 time=10ms TTL=254
Reply from 10.1.3.2: bytes=32 time=1ms TTL=254
Reply from 10.1.3.2: bytes=32 time<1ms TTL=254
Reply from 10.1.3.2: bytes=32 time<1ms TTL=254

Ping statistics for 10.1.3.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 10ms, Average = 2ms

C:\>tracert 10.1.3.2

Tracing route to 10.1.3.2 over a maximum of 30 hops:

1 2 ms 0 ms 0 ms 10.0.1.1
2 0 ms 0 ms 0 ms 10.1.3.2

Trace complete.
```

On R5:

```
R5#traceroute 10.0.1.10
Type escape sequence to abort.
Tracing the route to 10.0.1.10

1 10.0.3.1 0 msec 1 msec 0 msec
2 10.0.1.10 0 msec 0 msec 0 msec
```

Default Route and Load Balancing

26) Configure an IP address on the Internet FastEthernet 1/1 interface on R4 according to the lab topology diagram.

```
R4(config)#int f1/1
R4(config-if)#ip add 203.0.113.1 255.255.255.0
R4(config-if)#no shut
```

27) Ensure that all PCs have a route out to the internet through the Internet Service Provider connection on R4. (Note that the lab does not actually have Internet connectivity.)

```
R1(config)#ip route 0.0.0.0 0.0.0.0 10.0.0.2

R2(config)#ip route 0.0.0.0 0.0.0.0 10.1.0.1

R3(config)#ip route 0.0.0.0 0.0.0.0 10.1.1.1

R4(config)#ip route 0.0.0.0 0.0.0.0 203.0.113.2

R5(config)#ip route 0.0.0.0 0.0.0.0 10.1.3.1
```

All routers should have a default route to the next hop IP on the path to the Internet.

```
R4#sh 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
       i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 203.0.113.2 to network 0.0.0.0

10.0.0.0/24 is subnetted, 8 subnets
S 10.0.0.0 [1/0] via 10.1.1.2
S 10.0.1.0 [1/0] via 10.1.1.2
S 10.0.2.0 [1/0] via 10.1.1.2
S 10.0.3.0 [1/0] via 10.1.1.2
S 10.1.0.0 [1/0] via 10.1.1.2
C 10.1.1.0 is directly connected, FastEthernet0/0
C 10.1.2.0 is directly connected, FastEthernet0/1
C 10.1.3.0 is directly connected, FastEthernet1/0
```

```
C 203.0.113.0/24 is directly connected, FastEthernet1/1
S* 0.0.0.0/0 [1/0] via 203.0.113.2
```

28) Traffic from PC1 and PC2 going to the internet should be load balanced over R2 and R5.

Add an additional default route on R1 to send Internet traffic via R5.

```
R1(config)#ip route 0.0.0.0 0.0.0.0 10.0.3.2
```

The routing table will show that R1 will load balance traffic over both paths.

```
R1#sh 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
       i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 10.0.0.2 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 10 subnets, 3 masks
C 10.0.0.0/24 is directly connected, FastEthernet0/0
L 10.0.0.1/32 is directly connected, FastEthernet0/0
C 10.0.1.0/24 is directly connected, FastEthernet0/1
L 10.0.1.1/32 is directly connected, FastEthernet0/1
C 10.0.2.0/24 is directly connected, FastEthernet1/0
L 10.0.2.1/32 is directly connected, FastEthernet1/0
C 10.0.3.0/24 is directly connected, FastEthernet1/1
L 10.0.3.1/32 is directly connected, FastEthernet1/1
S 10.1.0.0/16 [1/0] via 10.0.0.2
S 10.1.3.0/24 [1/0] via 10.0.3.2
S* 0.0.0.0/0 [1/0] via 10.0.0.2
             [1/0] via 10.0.3.2
```

Add additional routes on R4 to load balance the return traffic to PC1 and PC2 from the Internet.

```
R4(config)#ip route 10.0.1.0 255.255.255.0 10.1.3.2
R4(config)#ip route 10.0.2.0 255.255.255.0 10.1.3.2
```

R4's routing table should show both paths back to 10.0.1.0/24 and 10.0.2.0/24

```
R4#sh 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
       i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 203.0.113.2 to network 0.0.0.0

      10.0.0.0/8 is variably subnetted, 11 subnets, 2 masks
S        10.0.0.0/24 [1/0] via 10.1.1.2
S        10.0.1.0/24 [1/0] via 10.1.3.2
                     [1/0] via 10.1.1.2
S        10.0.2.0/24 [1/0] via 10.1.3.2
                     [1/0] via 10.1.1.2
S        10.0.3.0/24 [1/0] via 10.1.1.2
S        10.1.0.0/24 [1/0] via 10.1.1.2
C        10.1.1.0/24 is directly connected, FastEthernet0/0
L        10.1.1.1/32 is directly connected, FastEthernet0/0
C        10.1.2.0/24 is directly connected, FastEthernet0/1
L        10.1.2.1/32 is directly connected, FastEthernet0/1
C        10.1.3.0/24 is directly connected, FastEthernet1/0
L        10.1.3.1/32 is directly connected, FastEthernet1/0
      203.0.113.0/24 is variably subnetted, 2 subnets, 2 masks
C        203.0.113.0/24 is directly connected, FastEthernet1/1
L        203.0.113.1/32 is directly connected, FastEthernet1/1
S*    0.0.0.0/0 [1/0] via 203.0.113.2
```