**PC1:**

**C:\>ping 172.31.0.254**

**Pinging 172.31.0.254 with 32 bytes of data:**

**Reply from 172.31.1.1: Destination host unreachable.**

**Reply from 172.31.1.1: Destination host unreachable.**

**Reply from 172.31.1.1: Destination host unreachable.**

**Reply from 172.31.1.1: Destination host unreachable.**

**Ping statistics for 172.31.0.254:**

**Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),**

**C:\>ping 172.31.1.190**

**Pinging 172.31.1.190 with 32 bytes of data:**

**Reply from 172.31.1.1: Destination host unreachable.**

**Reply from 172.31.1.1: Destination host unreachable.**

**Reply from 172.31.1.1: Destination host unreachable.**

**Reply from 172.31.1.1: Destination host unreachable.**

**Router 1 Configuration**

R1>en

R1#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#ip route 172.31.0.0 255.255.255.0 172.31.1.192

R1(config)#ip route 172.31.0.0 255.255.255.0 172.31.1.192

R1(config)#ip route 172.31.0.0 255.255.255.0 172.31.1.193

R1(config)#ip route 172.31.1.128 255.255.255.192 172.31.1.197

R1(config)#ip route 172.31.1.128 255.255.255.192 172.31.1.193

R1(config)#ip route 172.31.1.128 255.255.255.192 172.31.1.193

R1(config)#ip route 172.31.1.196 255.255.255.252 172.31.1.193

**Router 2 Configuration**

R2>en

R2#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R2(config)#ip route 172.31.1.0 255.255.255.128 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

R2(config)#ip route 172.31.1.128 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

R2(config)#exit

R2#

%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

172.31.0.0/16 is variably subnetted, 9 subnets, 5 masks

C 172.31.0.0/24 is directly connected, GigabitEthernet0/0

L 172.31.0.1/32 is directly connected, GigabitEthernet0/0

S 172.31.1.0/25 is directly connected, Serial0/0/0

S 172.31.1.0/26 is directly connected, Serial0/0/1

S 172.31.1.128/26 is directly connected, Serial0/0/1

C 172.31.1.192/30 is directly connected, Serial0/0/0

L 172.31.1.193/32 is directly connected, Serial0/0/0

C 172.31.1.196/30 is directly connected, Serial0/0/1

L 172.31.1.197/32 is directly connected, Serial0/0/1

**Router 3**

R3>en

R3#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R3(config)#ip route 0.0.0.0 0.0.0.0 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

R3(config)#exit

R3#

%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 0.0.0.0 to network 0.0.0.0

172.31.0.0/16 is variably subnetted, 4 subnets, 3 masks

C 172.31.1.128/26 is directly connected, GigabitEthernet0/0

L 172.31.1.129/32 is directly connected, GigabitEthernet0/0

C 172.31.1.196/30 is directly connected, Serial0/0/1

L 172.31.1.198/32 is directly connected, Serial0/0/1

S\* 0.0.0.0/0 is directly connected, Serial0/0/1

Ping test from PC1

Cisco Packet Tracer PC Command Line 1.0

C:\>ping 172.31.0.0

Pinging 172.31.0.0 with 32 bytes of data:

Request timed out.

Request timed out.

Reply from 172.31.1.193: bytes=32 time=2ms TTL=254

Reply from 172.31.1.193: bytes=32 time=1ms TTL=254

Ping statistics for 172.31.0.0:

Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),

Approximate round trip times in milli-seconds:

Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\>ping 172.31.1.128

Pinging 172.31.1.128 with 32 bytes of data:

Reply from 172.31.1.198: bytes=32 time=11ms TTL=253

Reply from 172.31.1.198: bytes=32 time=2ms TTL=253

Reply from 172.31.1.198: bytes=32 time=8ms TTL=253

Reply from 172.31.1.198: bytes=32 time=3ms TTL=253

Ping statistics for 172.31.1.128:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 11ms, Average = 6ms

Ping test from PC-2

C:\>ping 172.31.0.0

Pinging 172.31.0.0 with 32 bytes of data:

Reply from 172.31.0.1: bytes=32 time<1ms TTL=255

Reply from 172.31.0.1: bytes=32 time=1ms TTL=255

Reply from 172.31.0.1: bytes=32 time=1ms TTL=255

Reply from 172.31.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.31.0.0:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 1ms, Average = 0ms

Ping test from PC-3

C:\>

C:\>ping 172.31.0.0

Pinging 172.31.0.0 with 32 bytes of data:

Reply from 172.31.1.197: bytes=32 time=9ms TTL=254

Reply from 172.31.1.197: bytes=32 time=1ms TTL=254

Reply from 172.31.1.197: bytes=32 time=2ms TTL=254

Reply from 172.31.1.197: bytes=32 time=1ms TTL=254

Ping statistics for 172.31.0.0:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 1ms, Maximum = 9ms, Average = 3ms