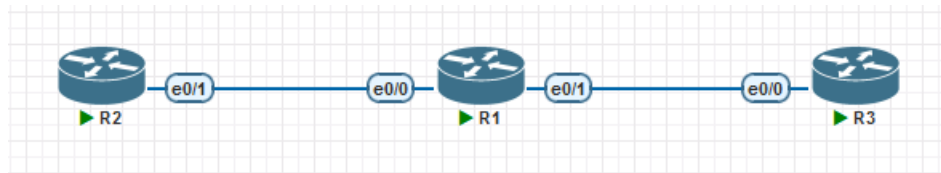


Dynamic Routing Protocol



Config

R1

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

Router>en

Router#conf t

Router(config)#hostname R1

R1(config)#interface loopback 0

R1(config-if)#ip address 1.1.1.1 255.255.255.255

R1(config-if)#exit

R1(config)#interface ethernet 0/0

R1(config-if)#no shutdown

R1(config-if)#ip address 12.1.1.1 255.255.255.0

R1(config-if)#exit

R1(config)#interface ethernet 0/1

R1(config-if)#no shutdown

R1(config-if)#ip address 13.1.1.1 255.255.255.0

R1(config-if)#exit

R1(config)#end

R1#show ip interface brief

Interface	IP-Address	OK?	Method	Status	Protocol
Ethernet0/0	12.1.1.1	YES	manual	up	up
Ethernet0/1	13.1.1.1	YES	manual	up	up
Ethernet0/2	unassigned	YES	unset	administratively down	down
Ethernet0/3	unassigned	YES	unset	administratively down	down
Loopback0	1.1.1.1	YES	manual	up	up

R2

% Please answer 'yes' or 'no'.

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

Router>en

Router#conf t

Router(config)#hostname R2

R2(config)#interface loopback 0

R2(config-if)#ip address 2.2.2.2 255.255.255.255

R2(config-if)#exit

R2(config)#interface ethernet 0/1

R2(config-if)#ip address 12.1.1.2 255.255.255.0

R2(config-if)#no shutdown

R2(config-if)#end

R2#show ip interface brief

```
R2#show ip interface brief
Interface      IP-Address      OK? Method Status      Protocol
Ethernet0/0    unassigned      YES unset    administratively down  down
Ethernet0/1    12.1.1.2        YES manual    up          up
Ethernet0/2    unassigned      YES unset    administratively down  down
Ethernet0/3    unassigned      YES unset    administratively down  down
Loopback0      2.2.2.2         YES manual    up          up
```

R3

% Please answer 'yes' or 'no'.

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

Router>en

Router#conf t

Router(config)#hostname R3

R3(config)#interface loopback 0

R3(config-if)#ip address 3.3.3.3 255.255.255.255

R3(config-if)#exit

R3(config)#interface ethernet 0/0

R3(config-if)#no shutdown

R3(config-if)#ip address 13.1.1.3 255.255.255.0

R3(config-if)#no shutdown

R3(config-if)#end

R3#show ip interface brief

```
R3#show ip interface brief
Interface      IP-Address      OK? Method Status      Protocol
Ethernet0/0    13.1.1.3        YES manual  up          up
Ethernet0/1    unassigned      YES unset  administratively down down
Ethernet0/2    unassigned      YES unset  administratively down down
Ethernet0/3    unassigned      YES unset  administratively down down
Loopback0      3.3.3.3         YES manual  up          up
```

RIP

Version 2 classless

no auto-summary is the method in version 1, it is meaningless in the classless protocol

R2

R2>en

R2#conf t

R2(config)#router rip

R2(config-router)#version 2

R2(config-router)#no auto-summary

R2(config-router)#network 12.1.1.0

R2(config-router)#network 2.2.2.2

R2(config-router)#end

R2#show run | section rip

```
R2#show run | section rip
router rip
version 2
network 2.0.0.0
network 12.0.0.0
no auto-summary
```

```

R2#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
        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
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

R      1.0.0.0/32 is subnetted, 1 subnets
R      1.1.1.1 [120/1] via 12.1.1.1, 00:00:05, Ethernet0/1
C      2.0.0.0/32 is subnetted, 1 subnets
C      2.2.2.2 is directly connected, Loopback0
R      3.0.0.0/32 is subnetted, 1 subnets
R      3.3.3.3 [120/2] via 12.1.1.1, 00:00:05, Ethernet0/1
C      12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C      12.1.1.0/24 is directly connected, Ethernet0/1
L      12.1.1.2/32 is directly connected, Ethernet0/1
R      13.0.0.0/24 is subnetted, 1 subnets
R      13.1.1.0 [120/1] via 12.1.1.1, 00:00:05, Ethernet0/1

```

R1

R1#conf t

R1(config)#router rip

R1(config-router)#version 2

R1(config-router)#no auto-summary

R1(config-router)#network 12.0.0.0

R1(config-router)#network 1.0.0.0

R1(config-router)#network 13.0.0.0

R1(config-router)#end

R1#show run | section rip

```

R1#show run | section rip
router rip
version 2
network 1.0.0.0
network 12.0.0.0
network 13.0.0.0
no auto-summary

```

R1#show ip route

```

R1#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
        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
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

    1.0.0.0/32 is subnetted, 1 subnets
C       1.1.1.1 is directly connected, Loopback0
    2.0.0.0/32 is subnetted, 1 subnets
R       2.2.2.2 [120/1] via 12.1.1.2, 00:00:22, Ethernet0/0
    3.0.0.0/32 is subnetted, 1 subnets
R       3.3.3.3 [120/1] via 13.1.1.3, 00:00:06, Ethernet0/1
    12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       12.1.1.0/24 is directly connected, Ethernet0/0
L       12.1.1.1/32 is directly connected, Ethernet0/0
    13.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       13.1.1.0/24 is directly connected, Ethernet0/1
L       13.1.1.1/32 is directly connected, Ethernet0/1

```

R3

R3(config)#router rip

R3(config-router)#version 2

R3(config-router)#no auto-summary

R3(config-router)#network 3.0.0.0

R3(config-router)#network 13.0.0.0

R3(config-router)#end

R3#show run | section rip

```

R3#show run | section rip
router rip
version 2
network 3.0.0.0
network 13.0.0.0
no auto-summary

```

```

R3#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
        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
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

    1.0.0.0/32 is subnetted, 1 subnets
R       1.1.1.1 [120/1] via 13.1.1.1, 00:00:04, Ethernet0/0
    2.0.0.0/32 is subnetted, 1 subnets
R       2.2.2.2 [120/2] via 13.1.1.1, 00:00:04, Ethernet0/0
    3.0.0.0/32 is subnetted, 1 subnets
C       3.3.3.3 is directly connected, Loopback0
    12.0.0.0/24 is subnetted, 1 subnets
R       12.1.1.0 [120/1] via 13.1.1.1, 00:00:04, Ethernet0/0
    13.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       13.1.1.0/24 is directly connected, Ethernet0/0
L       13.1.1.3/32 is directly connected, Ethernet0/0

```

RIP Result

R1

```

R1#ping 3.3.3.3 source 1.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
Packet sent with a source address of 1.1.1.1
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 39/52/62 ms
R1#ping 2.2.2.2 sou
R1#ping 2.2.2.2 source 1.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
Packet sent with a source address of 1.1.1.1
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 46/55/64 ms

```

R2

```

R2#ping 3.3.3.3 sou
R2#ping 3.3.3.3 source 2.2.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
Packet sent with a source address of 2.2.2.2
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 15/35/42 ms
R2#ping 1.1.1.1 sou
R2#ping 1.1.1.1 source 2.2.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
Packet sent with a source address of 2.2.2.2
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 41/51/64 ms

```

R3

```

R3#ping 2.2.2.2 source 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
Packet sent with a source address of 3.3.3.3
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 17/48/65 ms
R3#ping 1.1.1.1 sou
R3#ping 1.1.1.1 source 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
Packet sent with a source address of 3.3.3.3
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 14/40/57 ms

```

EIGRP

R1

```
R1(config)#no router rip
```

```
R1(config)#router eigrp 90
```

```
R1(config-router)#no auto-summary
```

```
R1(config-router)#eigrp router-id 1.1.1.1
```

```
R1(config-router)#network 1.1.1.1 0.0.0.0
```

```
R1(config-router)#network 12.1.1.1 0.0.0.0
```

```
R1(config-router)#network 13.1.1.1 0.0.0.0
```

```
R1(config-router)#end
```

```
R1#show run | section eigrp
```

```

R1#show run | sec
R1#show run | section eigrp
router eigrp 90
  network 1.1.1.1 0.0.0.0
  network 12.1.1.1 0.0.0.0
  network 13.1.1.1 0.0.0.0
  eigrp router-id 1.1.1.1
R1#
*Jun 18 22:33:13.374: %DUAL-5-NBRCHANGE: EIGRP-IPv4 90: Neighbor 12.1.1.2 (Ethernet0/0) is down: holding time
expired
R1#
R1#
*Jun 18 22:37:34.877: %DUAL-5-NBRCHANGE: EIGRP-IPv4 90: Neighbor 12.1.1.2 (Ethernet0/0) is up: new adjacency
R1#
R1#
R1#
*Jun 18 22:39:21.418: %DUAL-5-NBRCHANGE: EIGRP-IPv4 90: Neighbor 13.1.1.3 (Ethernet0/1) is up: new adjacency

```

```

R1#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
        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
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

    1.0.0.0/32 is subnetted, 1 subnets
C       1.1.1.1 is directly connected, Loopback0
    2.0.0.0/32 is subnetted, 1 subnets
D       2.2.2.2 [90/409600] via 12.1.1.2, 00:08:28, Ethernet0/0
    3.0.0.0/32 is subnetted, 1 subnets
D       3.3.3.3 [90/409600] via 13.1.1.3, 00:06:49, Ethernet0/1
    12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       12.1.1.0/24 is directly connected, Ethernet0/0
L       12.1.1.1/32 is directly connected, Ethernet0/0
    13.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       13.1.1.0/24 is directly connected, Ethernet0/1
L       13.1.1.1/32 is directly connected, Ethernet0/1

```

R2

R2(config)#router eigrp 90

R2(config-router)#no auto-summary

R2(config-router)#eigrp router-id 2.2.2.2

R2(config-router)#network 12.1.1.2 0.0.0.0

R2(config-router)#network 2.2.2.2 0.0.0.0

R2(config-router)#end

R2#show run | section eigrp

```

R2#show run | section eigrp
router eigrp 90
  network 2.2.2.2 0.0.0.0
  network 12.1.1.2 0.0.0.0
  eigrp router-id 2.2.2.2

```



```

R2#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
        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
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

    1.0.0.0/32 is subnetted, 1 subnets
D       1.1.1.1 [90/409600] via 12.1.1.1, 00:04:19, Ethernet0/1
    2.0.0.0/32 is subnetted, 1 subnets
C       2.2.2.2 is directly connected, Loopback0
    3.0.0.0/32 is subnetted, 1 subnets
D       3.3.3.3 [90/435200] via 12.1.1.1, 00:02:35, Ethernet0/1
    12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       12.1.1.0/24 is directly connected, Ethernet0/1
L       12.1.1.2/32 is directly connected, Ethernet0/1
    13.0.0.0/24 is subnetted, 1 subnets
D       13.1.1.0 [90/307200] via 12.1.1.1, 00:04:19, Ethernet0/1

```

R3

R3(config)#no router rip

R3(config)#router eigrp 90

R3(config-router)#no auto-summary

R3(config-router)#eigrp router-id 3.3.3.3

R3(config)#router eigrp 90

R3(config-router)#no auto-summary

R3(config-router)#network 3.3.3.3 0.0.0.0

R3(config-router)#network 13.1.1.3 0.0.0.0

R3(config-router)#end

R3#show run | section eigrp

```

R3#show run | section eigrp
router eigrp 90
  network 3.3.3.3 0.0.0.0
  network 13.1.1.3 0.0.0.0
  eigrp router-id 3.3.3.3

```

```

R3#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
       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
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

  1.0.0.0/32 is subnetted, 1 subnets
D      1.1.1.1 [90/409600] via 13.1.1.1, 00:14:40, Ethernet0/0
  2.0.0.0/32 is subnetted, 1 subnets
D      2.2.2.2 [90/435200] via 13.1.1.1, 00:14:40, Ethernet0/0
  3.0.0.0/32 is subnetted, 1 subnets
C      3.3.3.3 is directly connected, Loopback0
 12.0.0.0/24 is subnetted, 1 subnets
D      12.1.1.0 [90/307200] via 13.1.1.1, 00:14:40, Ethernet0/0
 13.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C      13.1.1.0/24 is directly connected, Ethernet0/0
L      13.1.1.3/32 is directly connected, Ethernet0/0

```

EIGRP Result

R1

```

R1#ping 2.2.2.2 source 1.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
Packet sent with a source address of 1.1.1.1
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 40/51/64 ms
R1#ping 3.3.3.3 sou
R1#ping 3.3.3.3 source 1.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
Packet sent with a source address of 1.1.1.1
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 39/49/88 ms

```

R2

```

R2#ping 3.3.3.3 source 2.2.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
Packet sent with a source address of 2.2.2.2
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/40/57 ms
R2#ping 1.1.1.1 sou
R2#ping 1.1.1.1 source 2.2.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
Packet sent with a source address of 2.2.2.2
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/33/40 ms

```

R3

```

R3#ping 1.1.1.1 sou
R3#ping 1.1.1.1 source 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
Packet sent with a source address of 3.3.3.3
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 30/41/55 ms
R3#ping 2.2.2.2 sou
R3#ping 2.2.2.2 source 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
Packet sent with a source address of 3.3.3.3
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/40/81 ms

```

OSPF

R1

```
R1(config)#no router eigrp 90
```

```
R1(config)#router ospf 110
```

```
R1(config-router)#router-id 1.1.1.1
```

```
R1(config-router)#network 1.1.1.1 0.0.0.0 area 0
```

```
R1(config-router)#network 12.1.1.1 0.0.0.0 area 0
```

```
R1(config-router)#network 13.1.1.1 0.0.0.0 area 0
```

```
R1(config-router)#end
```

```
R1#show run | section ospf
```

```

R1#show run | section ospf
router ospf 110
  router-id 1.1.1.1
  network 1.1.1.1 0.0.0.0 area 0
  network 12.1.1.1 0.0.0.0 area 0
  network 13.1.1.1 0.0.0.0 area 0

```

```

R1#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
        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
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

    1.0.0.0/32 is subnetted, 1 subnets
C       1.1.1.1 is directly connected, Loopback0
    2.0.0.0/32 is subnetted, 1 subnets
O       2.2.2.2 [110/11] via 12.1.1.2, 00:04:24, Ethernet0/0
    3.0.0.0/32 is subnetted, 1 subnets
O       3.3.3.3 [110/11] via 13.1.1.3, 00:01:52, Ethernet0/1
    12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       12.1.1.0/24 is directly connected, Ethernet0/0
L       12.1.1.1/32 is directly connected, Ethernet0/0
    13.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       13.1.1.0/24 is directly connected, Ethernet0/1
L       13.1.1.1/32 is directly connected, Ethernet0/1

```

R2

R2(config)#no router eigrp 90

R2(config)#router ospf 110

R2(config-router)#router-id 2.2.2.2

R2(config-router)#network 2.2.2.2 0.0.0.0 area 0

R2(config-router)#network 12.1.1.2 0.0.0.0 area 0

R2(config-router)#end

R2#show run | section ospf

```

R2#show run | section ospf
router ospf 110
  router-id 2.2.2.2
  network 2.2.2.2 0.0.0.0 area 0
  network 12.1.1.2 0.0.0.0 area 0

```

```

R2#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
        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
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

    1.0.0.0/32 is subnetted, 1 subnets
o      1.1.1.1 [110/11] via 12.1.1.1, 00:04:18, Ethernet0/1
    2.0.0.0/32 is subnetted, 1 subnets
C      2.2.2.2 is directly connected, Loopback0
    3.0.0.0/32 is subnetted, 1 subnets
o      3.3.3.3 [110/21] via 12.1.1.1, 00:01:36, Ethernet0/1
    12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C      12.1.1.0/24 is directly connected, Ethernet0/1
L      12.1.1.2/32 is directly connected, Ethernet0/1
    13.0.0.0/24 is subnetted, 1 subnets
o      13.1.1.0 [110/20] via 12.1.1.1, 00:04:02, Ethernet0/1

```

R3

R3(config)#no router eigrp 90

R3(config)#router ospf 110

R3(config-router)#router-id 3.3.3.3

R3(config-router)#network 3.3.3.3 0.0.0.0 area 0

R3(config-router)#network 13.1.1.3 0.0.0.0 area 0

R3(config-router)#end

R3#show run | section ospf

```

R3#show run | section ospf
router ospf 110
  router-id 3.3.3.3
  network 3.3.3.3 0.0.0.0 area 0
  network 13.1.1.3 0.0.0.0 area 0

```

```

R3#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
        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
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

    1.0.0.0/32 is subnetted, 1 subnets
O      1.1.1.1 [110/11] via 13.1.1.1, 00:01:34, Ethernet0/0
    2.0.0.0/32 is subnetted, 1 subnets
O      2.2.2.2 [110/21] via 13.1.1.1, 00:01:34, Ethernet0/0
    3.0.0.0/32 is subnetted, 1 subnets
C      3.3.3.3 is directly connected, Loopback0
    12.0.0.0/24 is subnetted, 1 subnets
O      12.1.1.0 [110/20] via 13.1.1.1, 00:01:34, Ethernet0/0
    13.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C      13.1.1.0/24 is directly connected, Ethernet0/0
L      13.1.1.3/32 is directly connected, Ethernet0/0

```

OSPF Result

R1

```

R1#ping 2.2.2.2 sou
R1#ping 2.2.2.2 source 1.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
Packet sent with a source address of 1.1.1.1
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 40/51/75 ms
R1#ping 3.3.3.3 source 1.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
Packet sent with a source address of 1.1.1.1
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 49/57/65 ms

```

R2

```

R2#ping 1.1.1.1 source 2.2.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
Packet sent with a source address of 2.2.2.2
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 39/47/55 ms
R2#ping 3.3.3.3 sou
R2#ping 3.3.3.3 source 2.2.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
Packet sent with a source address of 2.2.2.2
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 29/48/63 ms

```

R3

```
R3#ping 1.1.1.1 source 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
Packet sent with a source address of 3.3.3.3
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 13/42/61 ms
R3#ping 2.2.2.2 sou
R3#ping 2.2.2.2 source 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
Packet sent with a source address of 3.3.3.3
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 24/52/62 ms
```