For this lab section, refer to Figure 26-2 on page 912 of the book.

Step 1 through 8

```
hostname R1
!
enable secret 5 $1$1xxK$LWh42sY9aO17mvAuehLPM.
!
ip subnet-zero
no ip domain-lookup
!
interface Loopback1
 ip address 1.1.1.1 255.255.255.255
 ip ospf network point-to-point
!
interface Serial0
 ip address 150.100.31.1 255.255.255.240
 encapsulation frame-relay
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 7 094F471A1A0A
 ip ospf network point-to-point
 ip ospf hello-interval 65
 traffic-shape rate 512000 12800 12800 1000
 traffic-shape adaptive 32000
 frame-relay map ip 150.100.31.3 101 broadcast
 frame-relay lmi-type ansi
!
router ospf 123
 router-id 1.1.1.1
 log-adjacency-changes
 area 0 authentication message-digest
 network 1.1.1.1 0.0.0.0 area 0
 network 150.100.31.0 0.0.0.15 area 0
 distribute-list 1 in
!
ip classless
!
access-list 1 deny   5.5.5.55
access-list 1 permit any
!
line con 0
 exec-timeout 0 0
 logging synchronous
line aux 0
line vty 0 4
 logging synchronous
 login
!
end
```

```
R1#sho ip route ospf
     2.0.0.0/32 is subnetted, 2 subnets
```

```
O       2.2.2.2 [110/129] via 150.100.31.3, 02:43:28, Serial0
O IA    2.2.2.22 [110/129] via 150.100.31.3, 02:43:28, Serial0
     3.0.0.0/32 is subnetted, 4 subnets
O       3.3.3.3 [110/65] via 150.100.31.3, 02:43:28, Serial0
O E2    3.3.3.13 [110/20] via 150.100.31.3, 02:43:18, Serial0
O E2    3.3.3.23 [110/20] via 150.100.31.3, 02:43:18, Serial0
     4.0.0.0/32 is subnetted, 1 subnets
O       4.4.4.4 [110/129] via 150.100.31.3, 02:43:28, Serial0
     140.100.0.0/16 is variably subnetted, 5 subnets, 2 masks
O IA    140.100.45.0/26 [110/192] via 150.100.31.3, 02:43:28,
Serial0
O IA    140.100.56.0/26 [110/256] via 150.100.31.3, 02:43:28,
Serial0
     5.0.0.0/32 is subnetted, 1 subnets
O IA    5.5.5.5 [110/193] via 150.100.31.3, 02:43:29, Serial0
     6.0.0.0/32 is subnetted, 1 subnets
O IA    6.6.6.6 [110/257] via 150.100.31.3, 02:43:29, Serial0
     67.0.0.0/24 is subnetted, 1 subnets
     8.0.0.0/32 is subnetted, 1 subnets
O IA    8.8.8.8 [110/11368] via 150.100.31.3, 02:43:30, Serial0
     130.100.0.0/16 is variably subnetted, 3 subnets, 3 masks
O IA 192.168.2.0/24 [110/11367] via 150.100.31.3, 02:43:30, Serial0
     150.100.0.0/16 is variably subnetted, 3 subnets, 3 masks
O       150.100.32.0/27 [110/128] via 150.100.31.3, 02:43:30,
Serial0
O       150.100.33.0/29 [110/128] via 150.100.31.3, 02:43:30,
Serial0
```

```
hostname R2
!
enable secret 5 $1$OiDj$4.39veJ97UQ7La4nOLLiC0
!
ip subnet-zero
!
!
interface Loopback2
 ip address 2.2.2.2 255.255.255.255
 ip ospf network point-to-point
!
interface Ethernet0
 ip address 222.222.222.1 255.255.255.0
interface Serial0
 ip address 150.100.32.2 255.255.255.224
 encapsulation frame-relay
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 7 045802150C2E
 ip ospf network point-to-point
 frame-relay map ip 150.100.32.3 202 broadcast
!
router ospf 123
 router-id 2.2.2.2
 log-adjacency-changes
 area 0 authentication message-digest
```

```
 area 2 nssa
 network 222.222.222.0 0.0.0.255 area 2
 network 2.2.2.2 0.0.0.0 area 0

 network 150.100.32.0 0.0.0.31 area 0
!
ip classless
ip http server
line con 0
```

```
R2#sho ip route ospf
     1.0.0.0/32 is subnetted, 1 subnets
O       1.1.1.1 [110/129] via 150.100.32.3, 08:28:49, Serial0
     3.0.0.0/32 is subnetted, 4 subnets
O       3.3.3.3 [110/65] via 150.100.32.3, 08:28:49, Serial0
     4.0.0.0/32 is subnetted, 1 subnets
O       4.4.4.4 [110/129] via 150.100.32.3, 08:28:49, Serial0
     140.100.0.0/16 is variably subnetted, 5 subnets, 2 masks
O IA    140.100.45.0/26 [110/192] via 150.100.32.3, 08:28:49,
Serial0
O IA    140.100.56.0/26 [110/256] via 150.100.32.3, 08:28:49,
Serial0
     5.0.0.0/32 is subnetted, 1 subnets
O IA    5.5.5.5 [110/193] via 150.100.32.3, 08:28:49, Serial0
     6.0.0.0/32 is subnetted, 1 subnets
O IA    6.6.6.6 [110/257] via 150.100.32.3, 08:28:50, Serial0
     67.0.0.0/24 is subnetted, 1 subnets
     8.0.0.0/32 is subnetted, 1 subnets
O IA    8.8.8.8 [110/11368] via 150.100.32.3, 08:28:50, Serial0
     130.100.0.0/16 is variably subnetted, 3 subnets, 3 masks
O IA 192.168.2.0/24 [110/11367] via 150.100.32.3, 08:28:50, Serial0
     150.100.0.0/16 is variably subnetted, 3 subnets, 3 masks
O       150.100.33.0/29 [110/128] via 150.100.32.3, 08:28:50,
Serial0
O       150.100.31.0/28 [110/128] via 150.100.32.3, 08:28:50,
Serial0
```

```
R3# sho run
Building configuration...

Current configuration : 2840 bytes
!
version 12.2
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
!
hostname R3
!
ip subnet-zero
!
interface Loopback3
 ip address 3.3.3.3 255.255.255.255
```

```
 ip ospf network point-to-point
!
interface Loopback10
 ip address 3.3.3.13 255.255.255.255
 ip ospf network point-to-point
!
interface Loopback11
 ip address 3.3.3.23 255.255.255.255
 ip ospf network point-to-point
!
interface Loopback12
 ip address 3.3.3.33 255.255.255.255
 ip ospf network point-to-point
!
interface Loopback13
 ip address 130.100.100.1 255.255.255.255
 ip ospf network point-to-point
!
interface Ethernet0
 ip address 130.100.1.3 255.255.255.0
!
interface Serial0
 no ip address
 encapsulation frame-relay
 no fair-queue
 frame-relay lmi-type ansi
!
interface Serial0.1 point-to-point
 ip address 150.100.31.3 255.255.255.240
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 cisco
 ip ospf hello-interval 65
 traffic-shape rate 64000 8000 8000 1000
 traffic-shape adaptive 32000
 frame-relay interface-dlci 301
!
interface Serial0.2 point-to-point
 ip address 150.100.32.3 255.255.255.224
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 cisco
 frame-relay interface-dlci 302
!
interface Serial0.3 point-to-point
 ip address 150.100.33.3 255.255.255.248
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 cisco
 frame-relay interface-dlci 304
!
!
router ospf 123
 router-id 3.3.3.3
 log-adjacency-changes
 area 0 authentication message-digest
```

```
 network 3.3.3.3 0.0.0.0 area 0
 network 150.100.31.0 0.0.0.15 area 0
 network 150.100.32.0 0.0.0.31 area 0
 network 150.100.33.0 0.0.0.7 area 0
!
router rip
 version 1
 network 130.100.0.0
!
!
ip classless
!
line con 0
 exec-timeout 0 0
 privilege level 15
```

```
R3#sho ip route ospf

     1.0.0.0/32 is subnetted, 1 subnets
O       1.1.1.1 [110/65] via 150.100.31.1, 00:06:33, Serial0.1
     222.222.222.0/24 is subnetted, 1 subnets
O IA    222.222.222.1 [110/65] via 150.100.32.2, 00:14:03,
Serial0.2
     2.0.0.0/32 is subnetted, 2 subnets
O       2.2.2.2 [110/65] via 150.100.32.2, 00:06:33, Serial0.2
O IA    2.2.2.22 [110/65] via 150.100.32.2, 00:06:33, Serial0.2
     4.0.0.0/32 is subnetted, 1 subnets
O       4.4.4.4 [110/65] via 150.100.33.4, 00:06:33, Serial0.3
     140.100.0.0/16 is variably subnetted, 4 subnets, 2 masks
O IA    140.100.45.0/26 [110/128] via 150.100.33.4, 00:06:33,
Serial0.3
O IA    140.100.56.0/26 [110/192] via 150.100.33.4, 00:06:33,
Serial0.3
     5.0.0.0/32 is subnetted, 1 subnets
O IA    5.5.5.5 [110/129] via 150.100.33.4, 00:06:33, Serial0.3
     6.0.0.0/32 is subnetted, 1 subnets
O IA    6.6.6.6 [110/193] via 150.100.33.4, 00:06:33, Serial0.3
     8.0.0.0/32 is subnetted, 1 subnets
O IA    8.8.8.8 [110/11304] via 150.100.33.4, 00:01:42, Serial0.3
     130.100.0.0/16 is variably subnetted, 4 subnets, 3 masks
O IA 192.168.2.0/24 [110/11303] via 150.100.33.4, 00:06:34,
Serial0.3
```

```
R3# ping 1.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
44/47/48 ms
R3#ping 2.2.2.2

Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
60/60/60 ms
R3#ping 4.4.4.4

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 4.4.4.4, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
60/60/64 ms
R3#ping 5.5.5.5

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.5.5.5, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
88/89/92 ms
R3#ping 6.6.6.6

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 6.6.6.6, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
112/114/120 ms
R3#ping 8.8.8.8

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 8.8.8.8, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
116/116/120 ms
```

```
r4# sho run
Building configuration...

Current configuration : 2339 bytes
!
version 12.2
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
service password-encryption
!
hostname r4
!
!
ip subnet-zero
no ip domain-lookup
!
!
key chain ccie
 key 6727
  key-string 7 03520C5951
```

```
!
!
!
!
interface Loopback4
 ip address 4.4.4.4 255.255.255.255
 ip ospf network point-to-point
!
interface Ethernet0
 ip address 140.100.47.4 255.255.255.192
 ip rip send version 2
 ip rip receive version 2
 ip rip authentication mode md5
 ip rip authentication key-chain ccie
!
interface Serial0
 ip address 150.100.33.4 255.255.255.248
encapsulation frame-relay
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 7 104D000A0618
 ip ospf network point-to-point
 frame-relay map ip 150.100.33.3 404 broadcast
 frame-relay lmi-type ansi
!
interface Serial1
 ip address 140.100.45.4 255.255.255.192
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 7 1511021F0725
 ip ospf network point-to-point
 clockrate 64000
!
router ospf 123
 router-id 4.4.4.4
 log-adjacency-changes detail
 area 0 authentication message-digest
 area 45 authentication message-digest
 area 45 virtual-link 5.5.5.5 authentication message-digest
 area 45 virtual-link 5.5.5.5 message-digest-key 5 md5 7
0822455D0A16
 network 4.4.4.4 0.0.0.0 area 0
 network 140.100.45.0 0.0.0.63 area 45
 network 150.100.33.0 0.0.0.7 area 0
!
router rip
 version 2
 network 4.0.0.0
 network 140.100.0.0
 default-information originate
 no auto-summary
!
!
ip classless
ip http server
ip pim bidir-enable
```

```
!
!
line con 0
 exec-timeout 0 0
 logging synchronous
line aux 0
line vty 0 4
 privilege level 15
 logging synchronous
 no login
!
end
```

```
r4#sho ip route ospf
     1.0.0.0/32 is subnetted, 1 subnets
O       1.1.1.1 [110/129] via 150.100.33.3, 00:05:29, Serial0
     2.0.0.0/32 is subnetted, 2 subnets
O IA    2.2.2.22 [110/129] via 150.100.33.3, 00:05:29, Serial0
     222.222.222.0/24 is subnetted, 1 subnets
O IA    222.222.222.1 [110/129] via 150.100.33.3, 00:31:05, Serial0
     140.100.0.0/16 is variably subnetted, 5 subnets, 2 masks
O IA    140.100.56.0/26 [110/128] via 140.100.45.5, 00:05:29,
Serial1
     5.0.0.0/32 is subnetted, 1 subnets
O       5.5.5.5 [110/65] via 140.100.45.5, 00:06:05, Serial1
     6.0.0.0/32 is subnetted, 1 subnets
O IA    6.6.6.6 [110/129] via 140.100.45.5, 00:05:29, Serial1
     8.0.0.0/32 is subnetted, 1 subnets
O IA    8.8.8.8 [110/11240] via 140.100.45.5, 00:05:29, Serial1
O IA 192.168.2.0/24 [110/11239] via 140.100.45.5, 00:05:30, Serial1
     150.100.0.0/16 is variably subnetted, 3 subnets, 3 masks
O       150.100.32.0/27 [110/128] via 150.100.33.3, 00:05:30,
Serial0
O       150.100.31.0/28 [110/128] via 150.100.33.3, 00:05:30,
Serial0
```

```
r4#ping 1.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
100/104/108 ms
r4#ping 2.2.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
116/116/116 ms
r4#ping 3.3.3.3

Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
60/60/64 ms
r4#ping 5.5.5.5

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.5.5.5, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
32/32/32 ms
r4#ping 6.6.6.6

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 6.6.6.6, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
56/59/64 ms
r4#ping 8.8.8.8

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 8.8.8.8, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
60/60/60 ms
```

```
r5#sho run
Building configuration...
!
version 12.2
service timestamps debug uptime
!
hostname r5
!
ip subnet-zero
!
interface Loopback5
 ip address 5.5.5.5 255.255.255.255
 ip ospf network point-to-point
 !
interface Ethernet0
 ip address 130.100.26.5 255.255.255.224
!
interface Serial0
 ip address 140.100.45.5 255.255.255.192
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 cisco
 ip ospf network point-to-point
 fair-queue
!
interface Serial1
 ip address 140.100.56.5 255.255.255.192
```

```
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 cisco
 ip ospf network point-to-point
 clockrate 64000
!
router ospf 123
 router-id 5.5.5.5
 log-adjacency-changes detail
 area 0 authentication message-digest
 area 45 authentication message-digest
 area 45 virtual-link 4.4.4.4 authentication message-digest
 area 45 virtual-link 4.4.4.4 message-digest-key 5 md5 cisco
 area 56 authentication message-digest
 area 56 virtual-link 6.6.6.6 authentication message-digest
 area 56 virtual-link 6.6.6.6 message-digest-key 5 md5 cisco
 network 5.5.5.5 0.0.0.0 area 45
 network 5.5.5.55 0.0.0.0 area 45
 network 140.100.45.0 0.0.0.63 area 45
 network 140.100.56.0 0.0.0.63 area 56
!
ip classless
```

```
r5#sho ip route ospf
     1.0.0.0/32 is subnetted, 1 subnets
O       1.1.1.1 [110/193] via 140.100.45.4, 00:11:40, Serial0
     2.0.0.0/32 is subnetted, 2 subnets
O       2.2.2.2 [110/193] via 140.100.45.4, 00:11:40, Serial0
O IA    2.2.2.22 [110/193] via 140.100.45.4, 00:11:40, Serial0
     222.222.222.0/24 is subnetted, 1 subnets
O IA    222.222.222.1 [110/193] via 140.100.45.4, 00:39:04, Serial0
     3.0.0.0/32 is subnetted, 4 subnets
O       3.3.3.3 [110/129] via 140.100.45.4, 00:11:40, Serial0
     4.0.0.0/32 is subnetted, 1 subnets
O       4.4.4.4 [110/65] via 140.100.45.4, 00:11:40, Serial0
     6.0.0.0/32 is subnetted, 1 subnets
O       6.6.6.6 [110/65] via 140.100.56.6, 00:22:17, Serial1
     8.0.0.0/32 is subnetted, 1 subnets
O IA    8.8.8.8 [110/11176] via 140.100.56.6, 00:11:41, Serial1
O IA 192.168.2.0/24 [110/11175] via 140.100.56.6, 00:11:42, Serial1
     150.100.0.0/16 is variably subnetted, 3 subnets, 3 masks
O       150.100.32.0/27 [110/192] via 140.100.45.4, 00:11:42,
Serial0
O       150.100.33.0/29 [110/128] via 140.100.45.4, 00:11:42,
Serial0
O       150.100.31.0/28 [110/192] via 140.100.45.4, 00:11:42,
Serial0
```

```
r5#ping 1.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max =
128/130/140 ms
r5#ping 2.2.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
144/145/152 ms
r5#ping 3.3.3.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
88/88/92 ms
r5#ping 4.4.4.4

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 4.4.4.4, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
32/32/36 ms
r5#ping 6.6.6.6

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 6.6.6.6, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
32/32/32 ms
r5#ping 8.8.8.8

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 8.8.8.8, timeout is 2 seconds:
!!!!!

Success rate is 0 percent (0/3)
r5#
```

```
r6#sho run
Building configuration...

Current configuration : 2373 bytes
!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname r6
!
!
```

```
ip subnet-zero
!
!
no ip domain lookup
!
ip audit notify log
!
!
key chain ccie
 key 1
  key-string ccie
!
!
interface Loopback6
 ip address 6.6.6.6 255.255.255.255
 ip ospf network point-to-point!
!
interface Tunnel0
 ip address 192.168.2.2 255.255.255.0
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 cisco
 tunnel source 130.100.26.6
 tunnel destination 130.100.26.3
!
interface FastEthernet0/0
 ip address 130.100.26.6 255.255.255.224
 ip rip authentication mode md5
 ip rip authentication key-chain ccie
 speed 10
 half-duplex
!
interface Serial0/0
 ip address 140.100.56.6 255.255.255.192
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 cisco
 ip ospf network point-to-point
!
router ospf 123
 router-id 6.6.6.6
 log-adjacency-changes detail
 area 56 authentication message-digest
 area 56 virtual-link 5.5.5.5 authentication message-digest
 area 56 virtual-link 5.5.5.5 message-digest-key 5 md5 cisco
 area 86 authentication message-digest
 network 6.6.6.6 0.0.0.0 area 56
 network 140.100.56.0 0.0.0.63 area 56
 network 192.168.2.0 0.0.0.255 area 86
!
router rip
 version 2
 network 130.100.0.0
 no auto-summary
!
ip classless
```

```
ip route 192.168.1.0 255.255.255.0 130.100.26.2
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
line aux 0
line vty 0 4
 privilege level 15
 no login
!
!
end
```

```
r6#sho ip route ospf
     1.0.0.0/32 is subnetted, 1 subnets
O       1.1.1.1 [110/257] via 140.100.56.5, 00:13:57, Serial0/0
     2.0.0.0/32 is subnetted, 2 subnets
     222.222.222.0/24 is subnetted, 1 subnets
O IA    222.222.222.1 [110/257] via 140.100.56.5, 00:50:16,
Serial0/0
O IA    2.2.2.22 [110/257] via 140.100.56.5, 00:13:57, Serial0/0
     3.0.0.0/32 is subnetted, 4 subnets
O       3.3.3.3 [110/193] via 140.100.56.5, 00:52:16, Serial0/0
     4.0.0.0/32 is subnetted, 1 subnets
O       4.4.4.4 [110/129] via 140.100.56.5, 00:13:57, Serial0/0
     140.100.0.0/16 is variably subnetted, 5 subnets, 2 masks
O IA    140.100.45.0/26 [110/128] via 140.100.56.5, 00:13:57,
Serial0/0
     5.0.0.0/32 is subnetted, 1 subnets
O IA    5.5.5.5 [110/65] via 140.100.56.5, 00:13:57, Serial0/0
     8.0.0.0/32 is subnetted, 1 subnets
O       8.8.8.8 [110/11112] via 192.168.2.1, 00:24:35, Tunnel0
     150.100.0.0/16 is variably subnetted, 3 subnets, 3 masks
O       150.100.32.0/27 [110/256] via 140.100.56.5, 00:13:59,
Serial0/0
O       150.100.33.0/29 [110/192] via 140.100.56.5, 00:13:59,
Serial0/0
O       150.100.31.0/28 [110/256] via 140.100.56.5, 00:13:59,
Serial0/0
```

```
r6#ping 1.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
156/164/192 ms
r6#ping 2.2.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
```

```
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
168/173/188 ms
r6#ping 3.3.3.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
112/115/116 ms
r6#ping 4.4.4.4

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 4.4.4.4, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
60/163/208 ms
r6#ping 5.5.5.5

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.5.5.5, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
28/28/32 ms
r6#ping 8.8.8.8

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 8.8.8.8, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4
ms
r6#
```

```
R8#sho run
Building configuration...

Current configuration : 4766 bytes
!
! Last configuration change at 00:28:17 PST Sun Mar 7 1993
! NVRAM config last updated at 18:16:29 PST Sat Mar 6 1993
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
service password-encryption
!
hostname R8
!
enable password 7 05080F1C2243
!
interface Loopback8
 ip address 8.8.8.8 255.255.255.255
```

```
 ip ospf network point-to-point
!
interface Tunnel1
 ip address 192.168.2.1 255.255.255.0
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 7 045802150C2E
 tunnel source 192.168.1.1
 tunnel destination 130.100.26.6
!
!
interface FastEthernet0/1
 ip address 192.168.1.1 255.255.255.0

 no ip route-cache
 no ip mroute-cache
 duplex auto
 speed auto
 no cdp enable
!
!
router ospf 123
 router-id 8.8.8.8
 log-adjacency-changes
 area 86 authentication message-digest
 network 8.8.8.8 0.0.0.0 area 86
 network 192.168.2.0 0.0.0.255 area 86
!
router rip
 version 1
 network 192.168.1.0
 no auto-summary
!
ip classless
ip route 130.100.26.0 255.255.255.0 192.168.1.222
!
line con 0
 exec-timeout 0 0
 privilege level 15
 speed 115200
line vty 0 4
 privilege level 15
 login local
line vty 5 15
 privilege level 15
 no login
```

```
R8#sho ip route os
     1.0.0.0/32 is subnetted, 1 subnets
O IA    1.1.1.1 [110/11368] via 192.168.2.2, 00:17:18, Tunnel1
     2.0.0.0/32 is subnetted, 2 subnets
O IA    2.2.2.2 [110/11368] via 192.168.2.2, 00:17:18, Tunnel1
O IA    2.2.2.22 [110/11368] via 192.168.2.2, 00:17:18, Tunnel1
     3.0.0.0/32 is subnetted, 4 subnets
```

```
O IA    3.3.3.3 [110/11304] via 192.168.2.2, 00:17:18, Tunnel1
     4.0.0.0/32 is subnetted, 1 subnets
O IA    4.4.4.4 [110/11240] via 192.168.2.2, 00:17:28, Tunnel1
     140.100.0.0/16 is variably subnetted, 5 subnets, 2 masks
O IA    140.100.45.0/26 [110/11239] via 192.168.2.2, 00:27:54,
Tunnel1
O IA    140.100.56.0/26 [110/11175] via 192.168.2.2, 00:27:54,
Tunnel1
     5.0.0.0/32 is subnetted, 1 subnets
O IA    5.5.5.5 [110/11176] via 192.168.2.2, 00:27:54, Tunnel1
     6.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
O IA    6.6.6.6/32 [110/11112] via 192.168.2.2, 00:27:54, Tunnel1
     150.100.0.0/16 is variably subnetted, 3 subnets, 3 masks
O IA    150.100.32.0/27 [110/11367] via 192.168.2.2, 00:17:18,
Tunnel1
O IA    150.100.33.0/29 [110/11303] via 192.168.2.2, 00:17:28,
Tunnel1
O IA    150.100.31.0/28 [110/11367] via 192.168.2.2, 00:17:18,
Tunnel1
```

```
R8#ping 1.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
156/160/168 ms
R8#ping 2.2.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
172/172/172 ms
R8#ping 3.3.3.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
116/117/124 ms
R8#ping 4.4.4.4

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 4.4.4.4, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
56/59/60 ms

R8# ping 6.6.6.6

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 6.6.6.6, timeout is 2 seconds:
```

```
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4
ms
```

```
PIX2
sho config
: Saved
: Written by enable_15 at 02:12:58.920 UTC Fri Jan 1 1993
PIX Version 6.2(2)
nameif ethernet0 outside security0
nameif ethernet1 inside security100
nameif ethernet2 DMZ2 security10
nameif ethernet3 DMZ3 security15
enable password 2KFQnbNIdI.2KYOU encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname PIX2
names
interface ethernet0 10full
interface ethernet1 auto
interface ethernet2 auto
interface ethernet3 10baset
mtu outside 1500
mtu inside 1500
ip address outside 130.100.26.2 255.255.255.224
ip address inside 192.168.1.222 255.255.255.0
nat (inside) 10 0.0.0.0 0.0.0.0 0 0
access-list outside_access_in permit icmp host 130.100.26.6 host
130.100.26.3
access-list outside_access_in permit gre any host 130.100.26.3
static (inside,outside) 130.100.26.3 192.168.1.1 netmask
255.255.255.255 0 0
access-group outside_access_in in interface outside
rip outside passive version 2 authentication md5 ccie 1
rip inside passive version 1
route outside 0.0.0.0 0.0.0.0 130.100.26.6 1
```