

For this lab section, refer to Figure 26-4 on page 918 of the book.

Steps 1 through 5 and 7 through 10

```
R6#sho run
Building configuration...

Current configuration : 3778 bytes
!
! No configuration change since last restart
!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R6
!
!
username R8 password 0 cisco
aaa new-model
!
!
aaa authentication login default local
aaa authentication login no_login none
aaa authentication ppp default local
aaa session-id common
ip subnet-zero
!
!
no ip domain lookup
ip dhcp excluded-address 130.100.26.6
ip dhcp excluded-address 130.100.26.2
!
ip dhcp pool ccie
    network 130.100.26.0 255.255.255.224
    default-router 130.100.26.6
!
isdn switch-type basic-ni
!
!
key chain ccie
    key 1
        key-string ccie
!
!
!
no ip domain-lookup
no ip name-server
!
!
!
!
!
mta receive maximum-recipients 0
!
!
```

```
!  
!  
interface Loopback6  
  description OSPF Loopback  
  ip address 6.6.6.6 255.255.255.255  
!  
interface Loopback66  
  ip address 140.100.86.1 255.255.255.224  
!  
interface Loopback666  
  description BGP Loopback  
  ip address 6.6.6.66 255.255.255.255  
!  
interface Tunnel0  
  ip address 192.168.2.2 255.255.255.0  
  no ip proxy-arp  
  ip ospf authentication message-digest  
  ip ospf message-digest-key 5 md5 cisco  
  ip ospf mtu-ignore  
  tunnel source 130.100.26.6  
  tunnel destination 192.168.1.1  
!  
interface FastEthernet0/0  
  ip address 130.100.26.6 255.255.255.224  
  no ip proxy-arp  
  ip rip authentication mode md5  
  ip rip authentication key-chain ccie  
  speed 10  
  half-duplex  
  standby 1 ip 130.100.26.1  
  standby 1 preempt  
  standby 1 authentication ccie  
  standby 1 track Serial0/0  
!  
interface BRI0/0  
  no ip address  
  encapsulation ppp  
  dialer pool-member 10  
  isdn switch-type basic-ni  
  isdn tei-negotiation first-call  
  isdn spid1 6661 6666  
  isdn spid2 6662 6666  
  ppp multilink  
!  
interface Serial0/0  
  ip address 140.100.56.6 255.255.255.192  
  no ip proxy-arp  
  ip ospf authentication message-digest  
  ip ospf message-digest-key 5 md5 cisco  
  ip ospf network point-to-point  
  
  no ip mask-reply  
  no ip redirects  
  no ip proxy-arp  
  no ip unreachable  
!  
interface FastEthernet0/1  
  no ip address
```

```
duplex auto
speed auto

no ip mask-reply
no ip redirects
no ip proxy-arp
no ip unreachable
!
interface Dialer1
 ip address 172.22.85.2 255.255.255.0
 encapsulation ppp
 ip ospf cost 65535
 ip ospf demand-circuit
 dialer pool 10
 dialer remote-name R8
 dialer idle-timeout 45
 dialer string 8888
 dialer hold-queue 100
 dialer-group 5
 ppp authentication chap
 ppp multilink
!
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 172.22.85.0 0.0.0.255 area 86
 network 192.168.2.0 0.0.0.255 area 86
!
router rip
 version 2
 network 130.100.0.0
 no auto-summary
!
router bgp 456
 no synchronization
 bgp router-id 6.6.6.6
 bgp log-neighbor-changes
 network 6.6.6.66 mask 255.255.255.255
 network 130.100.86.0 mask 255.255.255.224
 neighbor 140.100.56.5 remote-as 456
 neighbor 140.100.56.5 next-hop-self
 neighbor 192.168.2.1 remote-as 65000
 no auto-summary
!
ip classless
ip route 192.168.1.0 255.255.255.0 130.100.26.2
no ip http server
!
!
access-list 100 dynamic R3 timeout 6 permit ip any any
access-list 6 permit 192.168.1.10
dialer-list 5 protocol ip permit
```

```
!  
no cdp run  
!  
snmp-server community public ro 6  
!route-map redist deny 10  
!  
route-map red permit 10  
  match ip address 1  
!  
mgcp profile default  
!  
dial-peer cor custom  
!  
line aux 0  
line vty 0 4  
  privilege level 15  
  autocommand telnet 5.5.5.5
```

```
R6#sho standby  
FastEthernet0/0 - Group 1  
  State is Active  
    1 state change, last state change 00:34:32  
  Virtual IP address is 130.100.26.1  
  Active virtual MAC address is 0000.0c07.ac01  
    Local virtual MAC address is 0000.0c07.ac01 (default)  
  Hello time 3 sec, hold time 10 sec  
    Next hello sent in 1.016 secs  
  Authentication text "ccie"  
  Preemption enabled  
  Active router is local  
  Standby router is 130.100.26.5, priority 95 (expires in  
7.056 sec)  
  Priority 100 (default 100)  
    Track interface Serial0/0 state Up decrement 10  
  IP redundancy name is "hsrp-Fa0/0-1" (default)
```

```
R6(config)#int ser 0/0  
R6(config-if)#shut  
Mar  1 06:28:35.882: %HSRP-6-STATECHANGE: FastEthernet0/0  
Grp 1 state Active -> Speak  
Mar  1 06:28:36.030: %LINK-5-CHANGED: Interface Serial0/0,  
changed state to administratively down  
Mar  1 06:28:37.030: %LINEPROTO-5-UPDOWN: Line protocol on  
Interface Serial0/0, changed state to down
```

```
R6#sho standby  
FastEthernet0/0 - Group 1  
  State is Standby  
    3 state changes, last state change 00:00:11  
  Virtual IP address is 130.100.26.1  
  Active virtual MAC address is 0000.0c07.ac01  
    Local virtual MAC address is 0000.0c07.ac01 (default)  
  Hello time 3 sec, hold time 10 sec  
    Next hello sent in 0.708 secs  
  Authentication text "ccie"  
  Preemption enabled
```

```
Active router is 130.100.26.5, priority 95 (expires in
9.156 sec)
Standby router is local
Priority 90 (default 100)
Track interface Serial0/0 state Down decrement 10
IP redundancy name is "hsrp-Fa0/0-1" (default)
```

```
hostname R5
!
!
ip subnet-zero
!
interface Loopback5
description OSPF Loopback
ip address 5.5.5.5 255.255.255.255
!
interface Loopback55
description BGP Loopback
ip address 5.5.5.55 255.255.255.255
!
interface Ethernet0
ip address 130.100.26.5 255.255.255.224
standby 1 ip 130.100.26.1
standby 1 priority 95
standby 1 preempt
standby 1 authentication ccie
!
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 access-group 100 in
ip ospf authentication message-digest
ip ospf message-digest-key 5 md5 cisco
ip ospf network point-to-point
clockrate 64000
!
router eigrp 5
network 130.100.55.0 0.0.0.255
no auto-summary
no eigrp log-neighbor-changes
!
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
redistribute eigrp 5 subnets
```

```

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
!
router bgp 456
no synchronization
bgp router-id 5.5.5.5
bgp log-neighbor-changes
network 5.5.5.55 mask 255.255.255.255
neighbor 140.100.45.4 remote-as 456
neighbor 140.100.45.4 route-reflector-client
neighbor 140.100.45.4 next-hop-self
neighbor 140.100.56.6 remote-as 456
neighbor 140.100.56.6 route-reflector-client
neighbor 140.100.56.6 next-hop-self
no auto-summary
!
ip classless
ip http server
!
line con 0
exec-timeout 0 0
line aux 0
line vty 0 4
privilege level 15
no login
!
end

R5#sho standby
Ethernet0 - Group 1
  Local state is Standby, priority 95, may preempt
  Hellotime 3 sec, holdtime 10 sec
  Next hello sent in 0.556
  Virtual IP address is 130.100.26.1 configured
  Active router is 130.100.26.6, priority 100 expires in
7.044
  Standby router is local
  Authentication text "ccie"
  10 state changes, last state change 00:00:40
  IP redundancy name is "hsrp-Et0-1" (default)

```

```

R8#sho run
Building configuration...

Current configuration : 6829 bytes
!
! Last configuration change at 16:04:36 PST Sun Feb 28 1993
by admin
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
service password-encryption
!
hostname R8
!

```

```
enable password 7 05080F1C2243
!
username admin password 7 094F471A1A0A
username R6 password 7 01100F175804
username R8 password 7 13061E010803
username cisco privilege 15 password 7 01100F175804
clock timezone PST -8
clock summer-time PDT recurring
aaa new-model
!
!
aaa authentication login default local
aaa authorization network default local
aaa session-id common
ip subnet-zero
!
!
ip ftp source-interface FastEthernet0/0
ip ftp username admin
ip ftp password 7 060506324F41

ip domain name cisco.com
!
isdn switch-type basic-ni
!
!
key chain ccie
  key 1
    key-string 7 0307580203
!
interface Loopback8
  description OSPF Loopback
  ip address 8.8.8.8 255.255.255.255
  ip broadcast-address 8.8.8.8
!
interface Loopback88
  description BGP Loopback
  ip address 8.8.8.88 255.255.255.255
!
interface Tunnel1
  ip address 192.168.2.1 255.255.255.0
  ip broadcast-address 192.168.2.255
  ip ospf authentication message-digest
  ip ospf message-digest-key 5 md5 7 045802150C2E
  ip ospf mtu-ignore
  tunnel source 192.168.1.1
  tunnel destination 130.100.26.6
!
!
interface BRI0/0
  no ip address
  encapsulation ppp
  ip ospf cost 1
  dialer pool-member 1
  isdn switch-type basic-ni
  isdn spid1 8881 8888
  isdn spid2 8882 8888
  ppp authentication chap
```

```
    ppp multilink
!
interface Serial0/0
 ip address 10.1.1.2 255.255.255.0
 ip broadcast-address 10.1.1.255
 clockrate 512000
 no cdp enable
!
interface FastEthernet0/1
 ip address 192.168.1.1 255.255.255.0
 ip nat inside
 ip rip send version 1
 ip rip receive version 1
 no ip route-cache
 no ip mroute-cache
 duplex auto
 speed auto
 no cdp enable
!
interface Dialer0
 ip address 172.22.85.1 255.255.255.0
 encapsulation ppp
 ip ospf cost 65535
 dialer pool 1
 dialer remote-name R6
 dialer-group 5
 ppp authentication chap
 ppp multilink
!
router ospf 123
 router-id 8.8.8.8
 log-adjacency-changes detail
 area 86 authentication message-digest
 network 8.8.8.8 0.0.0.0 area 86
 network 172.22.85.0 0.0.0.255 area 86
 network 192.168.2.0 0.0.0.255 area 86
!
router rip
 version 1
 network 192.168.1.0
 network 199.199.199.0
 no auto-summary
!
router bgp 65000
 no synchronization
 bgp router-id 8.8.8.8
 bgp log-neighbor-changes
 network 8.8.8.88 mask 255.255.255.255
 redistribute connected route-map loop
 neighbor 192.168.2.2 remote-as 456
 no auto-summary
!
ip drp access-group 3
ip drp authentication key-chain ccie
ip drp server
ip classless
ip route 6.6.6.0 255.255.255.0 192.168.1.222
ip route 10.1.1.0 255.255.255.0 10.1.1.1
```



```

ip route 130.100.26.0 255.255.255.0 192.168.1.222
ip http server
ip http authentication local
!
access-list 1 permit any
access-list 2 permit 8.8.8.88
access-list 3 permit 6.6.6.6
access-list 3 permit 192.168.2.2
access-list 5 permit 192.168.1.8 log
dialer-list 5 protocol ip permit
!
route-map loop permit 10
  match ip address 2
!
privilege exec level 1 telnet
privilege exec level 7 show ip route
privilege exec level 7 show startup-config
!
line con 0
  exec-timeout 0 0
  privilege level 15
  speed 115200
line aux 0
  modem InOut
  transport input all
line vty 0 4
  exec-timeout 0 0
  privilege level 15
  session-limit 100000
  transport input telnet ssh
line vty 5 15
  privilege level 15
!
end

```

Step 6

```

R5(config)#line vty 0 4
R5(config-line)#access-class 15 in
R5(config-line)#login local
R5(config-line)#exit

R5(config)#username admin privilege 15 password cisco
R5(config)#crypto key generate rsa
The name for the keys will be: R5.cisco.com
Choose the size of the key modulus in the range of 360 to
2048 for your
  General Purpose Keys. Choosing a key modulus greater than
512 may take
  a few minutes.

How many bits in the modulus [512]:512 "or hit ENTER"
Generating RSA keys ...
[OK]

R5(config)#
Sep 29 22:26:42: %SSH-5-ENABLED: SSH 1.5 has been enabled

```

```
R5(config)#ip ssh authentication-retries 3
R5(config)#ip ssh time-out 60
R5(config)#
```

R6 SSH Client to R5

```
R6#ssh -c des -l admin 140.100.56.5 ← R5
Trying 140.100.56.5...Open
password: cisco
```