Lab 6

Ip addressing for Frame Relay

A = 172.16.0.128 /26

C = 172.16.0.192 /26

D = 172.16.1.0 /26

B = 172.16.1.64 /27

F = 172.16.1.96 /27

E = 172.16.0.0 /25

G = 172.16.1.128 /27

H = 172.16.1.160 /27

I = 172.16.1.192 /27

1. Metro Ethernet

    a. Connection between cs and ps

    b. on cs side

        i. interface config

            1. switchport trunk encapsulation dot1q

            2. switchport mode trunk

            3. switchport trunk allowed vlan (number)

    c. on ps side

        i. interface config

            1. switchport access vlan _____ (number)

            2. switchport mode dot1q-tunnel

            3. l2protocol-tunnel _____ (enable L2 protocol)

      d. connection between ps and ps

          i.   interface config

              1. switchport trunk encapsulation dot1q

              2. switchport trunk allowed vlan _____ (number)

              3. switchport mode trunk

2. Frame Relay

      a. connection between frame relay switch (frp) and router

          i.   encapsulation frame-relay _____ (type)

          ii.   frame-relay lmi-type _____ (type)

          iii.   frame-relay intf-type dce

          iv.   frame-relay route ____ (dlci from router) interface _____ (number) _____

              (dlci between frp and next hop)

      b. connection between frp and frp

          i.   interface conf

              1. frame-relay lmi-type _____

              2. encapsulation frame-relay _____

              3. frame-relay intf-type nni

              4. frame-relay route _____ (dlci between frp and frp) interface_____

                 (number) _____ (dlci to router)

          ii.   global conf

              1. frame-relay switching

      c. connection between router and frp

          i.   interface conf

              1. ip address _____

2. encapsulation frame-relay _____

3. frame-relay lmi-type _____

4. frame-relay interface-dlci _____ (for point-to-point)

5. frame-relay map ip _____ (destination ip) _____ (internal dlci)

   broadcast (for multipoint)

d. router with point-to-point and mulitpoint

   i. interface _____ (number) _____ (point-to-point or mulitpoint)

      1. either frame-relay interface-dlci or frame-relay map ip depending

         on frame relay interface type

e. ospf with frame relay only on routers not on frp

   i. interface conf

      1. ip ospf network non-broadcast

   ii. global conf

      1. router ospf ____

         a. network _____

         b. neighbor _____ (ip address of ospf neighbor in same

            subnet)

```
springs#sh ip ospf interface s1/0.300
Serial1/0.300 is up, line protocol is up
  Internet Address 172.16.1.225/29, Area 0
  Process ID 1, Router ID 172.16.1.97, Network Type NON_BROADCAST, Cost: 64
  Transmit Delay is 1 sec, State BDR, Priority 1
  Designated Router (ID) 172.16.1.161, Interface address 172.16.1.226
  Backup Designated router (ID) 172.16.1.97, Interface address 172.16.1.225
  Timer intervals configured, Hello 30, Dead 120, Wait 120, Retransmit 5
    oob-resync timeout 120
    Hello due in 00:00:07
  Supports Link-local Signaling (LLS)
  Index 3/3, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 0, maximum is 2
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 2, Adjacent neighbor count is 2
    Adjacent with neighbor 172.16.1.161  (Designated Router)
    Adjacent with neighbor 172.16.1.1
  Suppress hello for 0 neighbor(s)
```

```
!
spanning-tree mode pvst
spanning-tree extend system-id
spanning-tree vlan 2 priority 24576
!
vlan internal allocation policy ascending
!
!
!
interface Port-channel1
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 2
 switchport mode trunk
 bandwidth 200000
!
interface FastEthernet0/1
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 2
 switchport mode trunk

cs1#
```

```
cs1#show mac address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
 All    0100.0ccc.cccc    STATIC      CPU
 All    0100.0ccc.cccd    STATIC      CPU
 All    0180.c200.0000    STATIC      CPU
 All    0180.c200.0001    STATIC      CPU
 All    0180.c200.0002    STATIC      CPU
 All    0180.c200.0003    STATIC      CPU
 All    0180.c200.0004    STATIC      CPU
 All    0180.c200.0005    STATIC      CPU
 All    0180.c200.0006    STATIC      CPU
 All    0180.c200.0007    STATIC      CPU
 All    0180.c200.0008    STATIC      CPU
 All    0180.c200.0009    STATIC      CPU
 All    0180.c200.000a    STATIC      CPU
 All    0180.c200.000b    STATIC      CPU
 All    0180.c200.000c    STATIC      CPU
 All    0180.c200.000d    STATIC      CPU
 All    0180.c200.000e    STATIC      CPU
 All    0180.c200.000f    STATIC      CPU
 All    0180.c200.0010    STATIC      CPU
 All    ffff.ffff.ffff    STATIC      CPU
   3    0050.56a0.2835    DYNAMIC     Fa0/5
   4    0014.6af4.c584    DYNAMIC     Fa0/10
   4    0050.56a0.74fc    DYNAMIC     Fa0/10
   4    0050.56a0.7fc6    DYNAMIC     Fa0/6
Total Mac Addresses for this criterion: 24
cs1#
```

```
cs2#show spanning-tree vlan 2

VLAN0002
  Spanning tree enabled protocol ieee
  Root ID    Priority    24578
             Address     0021.a067.d480
             Cost        12
             Port        488 (Port-channel1)
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32770  (priority 32768 sys-id-ext 2)
             Address     0024.5124.d000
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time 300

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- ----------------------------
Po1                 Root FWD 12        128.488  P2p


cs2#
```

```
cs2#sh mac address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
 All    0100.0ccc.cccc    STATIC      CPU
 All    0100.0ccc.cccd    STATIC      CPU
 All    0180.c200.0000    STATIC      CPU
 All    0180.c200.0001    STATIC      CPU
 All    0180.c200.0002    STATIC      CPU
 All    0180.c200.0003    STATIC      CPU
 All    0180.c200.0004    STATIC      CPU
 All    0180.c200.0005    STATIC      CPU
 All    0180.c200.0006    STATIC      CPU
 All    0180.c200.0007    STATIC      CPU
 All    0180.c200.0008    STATIC      CPU
 All    0180.c200.0009    STATIC      CPU
 All    0180.c200.000a    STATIC      CPU
 All    0180.c200.000b    STATIC      CPU
 All    0180.c200.000c    STATIC      CPU
 All    0180.c200.000d    STATIC      CPU
 All    0180.c200.000e    STATIC      CPU
 All    0180.c200.000f    STATIC      CPU
 All    0180.c200.0010    STATIC      CPU
 All    ffff.ffff.ffff    STATIC      CPU
   3    0014.6af4.c585    DYNAMIC     Fa1/0/10
   3    0050.56a0.2835    DYNAMIC     Fa1/0/10
Total Mac Addresses for this criterion: 22
cs2#
```

```
cs3#sh spanning-tree vlan 2

VLAN0002
  Spanning tree enabled protocol ieee
  Root ID    Priority    24578
             Address     0021.a067.d480
             Cost        12
             Port        488 (Port-channel1)
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32770  (priority 32768 sys-id-ext 2)
             Address     0024.14e1.df80
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time 15

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------
Fa1/0/15            Altn BLK 19        128.17   P2p
Po1                 Root FWD 12        128.488  P2p


cs3#
```

```
cs3#sh spanning-tree v
*Mar  2 14:16:41.429: %SYS-5-CONFIG_I: Configured from console by consolelan 3

VLAN0003
  Spanning tree enabled protocol ieee
  Root ID    Priority    24579
             Address     0024.5124.d000
             Cost        19
             Port        7 (FastEthernet1/0/5)
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32771  (priority 32768 sys-id-ext 3)
             Address     0024.14e1.df80
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time 15

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------
Fa1/0/5             Root FWD 19        128.7    P2p
Fa1/0/16            Altn BLK 19        128.18   P2p


cs3#
```

```
cs3#sh mac address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
 All    0100.0ccc.cccc    STATIC      CPU
 All    0100.0ccc.cccd    STATIC      CPU
 All    0180.c200.0000    STATIC      CPU
 All    0180.c200.0001    STATIC      CPU
 All    0180.c200.0002    STATIC      CPU
 All    0180.c200.0003    STATIC      CPU
 All    0180.c200.0004    STATIC      CPU
 All    0180.c200.0005    STATIC      CPU
 All    0180.c200.0006    STATIC      CPU
 All    0180.c200.0007    STATIC      CPU
 All    0180.c200.0008    STATIC      CPU
 All    0180.c200.0009    STATIC      CPU
 All    0180.c200.000a    STATIC      CPU
 All    0180.c200.000b    STATIC      CPU
 All    0180.c200.000c    STATIC      CPU
 All    0180.c200.000d    STATIC      CPU
 All    0180.c200.000e    STATIC      CPU
 All    0180.c200.000f    STATIC      CPU
 All    0180.c200.0010    STATIC      CPU
 All    ffff.ffff.ffff    STATIC      CPU
   3    0050.56a0.2835    DYNAMIC     Fa1/0/5
   3    0050.56a0.74fc    DYNAMIC     Fa1/0/5
   4    0014.6af4.c583    DYNAMIC     Fa1/0/10
   4    0050.56a0.74fc    DYNAMIC     Fa1/0/6
   4    0050.56a0.7fc6    DYNAMIC     Fa1/0/10
Total Mac Addresses for this criterion: 25
cs3#
```

```
collins#sh ip ospf interface s1/1
Serial1/1 is up, line protocol is up
  Internet Address 172.16.1.226/29, Area 0
  Process ID 1, Router ID 172.16.1.161, Network Type NON_BROADCAST, Cost: 64
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 172.16.1.161, Interface address 172.16.1.226
  Backup Designated router (ID) 172.16.1.97, Interface address 172.16.1.225
  Timer intervals configured, Hello 30, Dead 120, Wait 120, Retransmit 5
    oob-resync timeout 120
    Hello due in 00:00:13
  Supports Link-local Signaling (LLS)
  Cisco NSF helper support enabled
  IETF NSF helper support enabled
  Index 3/3, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 1
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 2, Adjacent neighbor count is 2
    Adjacent with neighbor 172.16.1.1
    Adjacent with neighbor 172.16.1.97  (Backup Designated Router)
  Suppress hello for 0 neighbor(s)
```

```
!
spanning-tree mode pvst
spanning-tree extend system-id
spanning-tree vlan 10 priority 24576
!
vlan internal allocation policy ascending
!
!
!
interface Port-channel1
 switchport access vlan 10
 switchport mode dot1q-tunnel
 bandwidth 200000
 l2protocol-tunnel cdp
 l2protocol-tunnel lldp
 l2protocol-tunnel stp
 l2protocol-tunnel vtp
!
interface FastEthernet0/1

ps1#
```

```
ps1#sh mac address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
All     0100.0ccc.cccc    STATIC      CPU
All     0100.0ccc.cccd    STATIC      CPU
All     0180.c200.0000    STATIC      CPU
All     0180.c200.0001    STATIC      CPU
All     0180.c200.0002    STATIC      CPU
All     0180.c200.0003    STATIC      CPU
All     0180.c200.0004    STATIC      CPU
All     0180.c200.0005    STATIC      CPU
All     0180.c200.0006    STATIC      CPU
All     0180.c200.0007    STATIC      CPU
All     0180.c200.0008    STATIC      CPU
All     0180.c200.0009    STATIC      CPU
All     0180.c200.000a    STATIC      CPU
All     0180.c200.000b    STATIC      CPU
All     0180.c200.000c    STATIC      CPU
All     0180.c200.000d    STATIC      CPU
All     0180.c200.000e    STATIC      CPU
All     0180.c200.000f    STATIC      CPU
All     0180.c200.0010    STATIC      CPU
All     ffff.ffff.ffff    STATIC      CPU
 10     0011.bba7.000c    DYNAMIC     Fa0/10
 10     0021.a067.d483    DYNAMIC     Po1
 10     0021.a067.d484    DYNAMIC     Po1
 20     0011.bba7.000c    DYNAMIC     Fa0/10
 20     0021.a067.d487    DYNAMIC     Fa0/5
 20     0050.56a0.2835    DYNAMIC     Fa0/10
 40     001d.45c2.ec8b    DYNAMIC     Fa0/9
 40     0021.a067.d488    DYNAMIC     Fa0/6
 40     0050.56a0.74fc    DYNAMIC     Fa0/6
 40     0050.56a0.7fc6    DYNAMIC     Fa0/9
Total Mac Addresses for this criterion: 30
ps1#
```

```
ps2#sh spanning-tree root

                                   Root    Hello Max Fwd
Vlan                  Root ID      Cost    Time  Age Dly  Root Port
----------------  -------------------  ----------  ----- --- ---  -------------
VLAN0010          24586 001e.79fe.8d80        19    2    20  15   Fa1/0/10
VLAN0020          24596 0011.bba7.0000         0    2    20  15
VLAN0030          24606 0011.bba7.0000         0    2    20  15
ps2#
```

```
ps2#sh mac address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
 All    0100.0ccc.cccc    STATIC      CPU
 All    0100.0ccc.cccd    STATIC      CPU
 All    0180.c200.0000    STATIC      CPU
 All    0180.c200.0001    STATIC      CPU
 All    0180.c200.0002    STATIC      CPU
 All    0180.c200.0003    STATIC      CPU
 All    0180.c200.0004    STATIC      CPU
 All    0180.c200.0005    STATIC      CPU
 All    0180.c200.0006    STATIC      CPU
 All    0180.c200.0007    STATIC      CPU
 All    0180.c200.0008    STATIC      CPU
 All    0180.c200.0009    STATIC      CPU
 All    0180.c200.000a    STATIC      CPU
 All    0180.c200.000b    STATIC      CPU
 All    0180.c200.000c    STATIC      CPU
 All    0180.c200.000d    STATIC      CPU
 All    0180.c200.000e    STATIC      CPU
 All    0180.c200.000f    STATIC      CPU
 All    0180.c200.0010    STATIC      CPU
 All    ffff.ffff.ffff    STATIC      CPU
  10    0024.5124.d003    DYNAMIC     Po1
  10    0024.5124.d004    DYNAMIC     Po1
  20    0024.5124.d007    DYNAMIC     Fa1/0/5
  20    0050.56a0.2835    DYNAMIC     Fa1/0/5
  20    0050.56a0.74fc    DYNAMIC     Fa1/0/10
  30    0024.5124.d008    DYNAMIC     Fa1/0/6
  30    0050.56a0.2835    DYNAMIC     Fa1/0/6
  30    0050.56a0.74fc    DYNAMIC     Fa1/0/6
Total Mac Addresses for this criterion: 28
ps2#
```

```
ps3#sho mac address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
All     0100.0ccc.cccc    STATIC      CPU
All     0100.0ccc.cccd    STATIC      CPU
All     0180.c200.0000    STATIC      CPU
All     0180.c200.0001    STATIC      CPU
All     0180.c200.0002    STATIC      CPU
All     0180.c200.0003    STATIC      CPU
All     0180.c200.0004    STATIC      CPU
All     0180.c200.0005    STATIC      CPU
All     0180.c200.0006    STATIC      CPU
All     0180.c200.0007    STATIC      CPU
All     0180.c200.0008    STATIC      CPU
All     0180.c200.0009    STATIC      CPU
All     0180.c200.000a    STATIC      CPU
All     0180.c200.000b    STATIC      CPU
All     0180.c200.000c    STATIC      CPU
All     0180.c200.000d    STATIC      CPU
All     0180.c200.000e    STATIC      CPU
All     0180.c200.000f    STATIC      CPU
All     0180.c200.0010    STATIC      CPU
All     ffff.ffff.ffff    STATIC      CPU
 10     0011.bba7.000d    DYNAMIC     Fa1/0/11
 10     0024.14e1.df83    DYNAMIC     Po1
 10     0024.14e1.df84    DYNAMIC     Po1
 40     0024.14e1.df88    DYNAMIC     Fa1/0/6
 40     0050.56a0.74fc    DYNAMIC     Fa1/0/9
 40     0050.56a0.7fc6    DYNAMIC     Fa1/0/6
 30     0011.bba7.000d    DYNAMIC     Fa1/0/11
 30     0024.14e1.df87    DYNAMIC     Fa1/0/5
 30     0050.56a0.2835    DYNAMIC     Fa1/0/11
 30     0050.56a0.74fc    DYNAMIC     Fa1/0/11
 30     0050.56a0.7fc6    DYNAMIC     Fa1/0/5
Total Mac Addresses for this criterion: 31
ps3#
```

boulder#sh run

Building configuration...

Current configuration : 1933 bytes

!

! Last configuration change at 00:28:24 UTC Wed Oct 15 2014

!

version 15.0

service timestamps debug datetime msec

service timestamps log datetime msec

```
no service password-encryption
!
hostname boulder
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
!
!
!
no network-clock-participate slot 2
!
dot11 syslog
ip source-route
!
!
ip cef
!
!
no ipv6 cef
!
multilink bundle-name authenticated
```

!

!

!

!

voice-card 0

!

!

!

!

!

!

!

!

!

!

license udi pid CISCO3825 sn FHK0904F3WM

!

redundancy

!

!

!

!

!

!

```
!
!
!
!
interface Loopback1
 ip address 172.16.1.193 255.255.255.224
 !
!
interface Loopback2
 ip address 172.16.0.129 255.255.255.192
 !
!
interface Loopback3
 ip address 172.16.1.65 255.255.255.224
 !
!
interface GigabitEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
 !
!
```

```
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
 !
!
interface Serial1/0
 no ip address
 shutdown
 no fair-queue
 serial restart-delay 0
 !
!
interface Serial1/1
 no ip address
 shutdown
 serial restart-delay 0
 !
!
interface Serial1/2
 no ip address
 shutdown
```

```
 serial restart-delay 0
 !
!
interface Serial1/3
 ip address 172.16.1.233 255.255.255.252
 encapsulation frame-relay IETF
 ip ospf network non-broadcast
 serial restart-delay 0
 frame-relay interface-dlci 201
 frame-relay lmi-type ansi
 !
!
interface FastEthernet2/0
 no ip address
 shutdown
 duplex auto
 speed auto
 !
!
interface FastEthernet2/1
 no ip address
 shutdown
 duplex auto
 speed auto
```

```
!
!
router ospf 1
 log-adjacency-changes
 network 172.16.0.128 0.0.0.63 area 0
 network 172.16.1.64 0.0.0.31 area 0
 network 172.16.1.192 0.0.0.31 area 0
 network 172.16.1.232 0.0.0.3 area 0
 neighbor 172.16.1.234
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
!
!
!
control-plane
 !
```

!

!

!

!

!

!

!

!

line con 0

line aux 0

line vty 0 4

 login

!

scheduler allocate 20000 1000

end

boulder#

collins#sh run

Building configuration...

Current configuration : 1852 bytes

!

version 12.4

```
service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname collins

!

boot-start-marker

boot-end-marker

!

!

no aaa new-model

!

resource policy

!

no network-clock-participate slot 2

!

!

ip cef

!

!

!

voice-card 0

 no dspfarm

!
```

!

!

!

!

!

!

!

!

!

!

!

!

!

!

!

!

!

!

!

!

interface Loopback1

 ip address 172.16.1.129 255.255.255.224

```
!
interface Loopback2
 ip address 172.16.1.161 255.255.255.224
!
interface GigabitEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
 negotiation auto
!
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
 negotiation auto
!
interface Serial1/0
 no ip address
 shutdown
 serial restart-delay 0
```

```
 no dce-terminal-timing-enable
!
interface Serial1/1
 ip address 172.16.1.226 255.255.255.248
 encapsulation frame-relay IETF
 ip ospf network non-broadcast
 serial restart-delay 0
 no dce-terminal-timing-enable
 frame-relay map ip 172.16.1.225 304 broadcast
 frame-relay map ip 172.16.1.227 303 broadcast
 frame-relay lmi-type ansi
!
interface Serial1/2
 no ip address
 shutdown
 serial restart-delay 0
 no dce-terminal-timing-enable
!
interface Serial1/3
 no ip address
 shutdown
 serial restart-delay 0
 no dce-terminal-timing-enable
!
```

```
interface FastEthernet2/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
router ospf 1
 log-adjacency-changes
 network 172.16.1.128 0.0.0.31 area 0
 network 172.16.1.160 0.0.0.31 area 0
 network 172.16.1.224 0.0.0.7 area 0
 neighbor 172.16.1.227
 neighbor 172.16.1.225
!
!
!
ip http server
no ip http secure-server
!
!
!
!
!
!
```

```
!
control-plane
!
!
!
!
!
!
!
!
!
!
line con 0
 stopbits 1
line aux 0
line vty 0 4
 login
!
scheduler allocate 20000 1000
!
webvpn context Default_context
 ssl authenticate verify all
 !
 no inservice
```

```
!

!

end


collins#


cs1(config)#do sh run

Building configuration...


Current configuration : 1742 bytes

!

version 12.2

no service pad

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname cs1

!

boot-start-marker

boot-end-marker

!

!

!
```

```
!
no aaa new-model
system mtu routing 1500
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
spanning-tree vlan 2 priority 24576
!
vlan internal allocation policy ascending
!
!
!
interface Port-channel1
 switchport trunk encapsulation dot1q
 switchport mode trunk
 bandwidth 200000
```

```
!
interface FastEthernet0/1
 switchport trunk encapsulation dot1q
 switchport mode trunk
 channel-group 1 mode desirable
!
interface FastEthernet0/2
 switchport trunk encapsulation dot1q
 switchport mode trunk
 channel-group 1 mode desirable
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
interface FastEthernet0/6
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 4
 switchport mode trunk
!
```

```
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
```

interface FastEthernet0/19

!

interface FastEthernet0/20

!

interface FastEthernet0/21

!

interface FastEthernet0/22

!

interface FastEthernet0/23

!

interface FastEthernet0/24

!

interface GigabitEthernet0/1

!

interface GigabitEthernet0/2

!

interface Vlan1

 no ip address

!

ip classless

ip http server

ip http secure-server

!

ip sla enable reaction-alerts

!

!

line con 0

line vty 5 15

!

end

cs1(config)#

cs2(config)#do sh run

Building configuration...

Current configuration : 2641 bytes

!

version 12.2

no service pad

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname cs2

!

boot-start-marker

boot-end-marker

!

!

no aaa new-model

switch 1 provision ws-c3750-48ts

system mtu routing 1500

ip subnet-zero

!

!

!

!

!

!

!

!

!

!

!

spanning-tree mode pvst

spanning-tree extend system-id

spanning-tree vlan 3 priority 24576

!

vlan internal allocation policy ascending

!

!

```
!
interface Port-channel1
 switchport trunk encapsulation dot1q
 switchport mode trunk
 bandwidth 200000
!
interface FastEthernet1/0/1
 switchport trunk encapsulation dot1q
 switchport mode trunk
 channel-group 1 mode desirable
!
interface FastEthernet1/0/2
 switchport trunk encapsulation dot1q
 switchport mode trunk
 channel-group 1 mode desirable
!
interface FastEthernet1/0/3
!
interface FastEthernet1/0/4
!
interface FastEthernet1/0/5
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
```

```
interface FastEthernet1/0/6
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
interface FastEthernet1/0/7
!
interface FastEthernet1/0/8
!
interface FastEthernet1/0/9
!
interface FastEthernet1/0/10
!
interface FastEthernet1/0/11
!
interface FastEthernet1/0/12
!
interface FastEthernet1/0/13
!
interface FastEthernet1/0/14
!
interface FastEthernet1/0/15
!
interface FastEthernet1/0/16
 switchport access vlan 3
```

!

interface FastEthernet1/0/17

!

interface FastEthernet1/0/18

!

interface FastEthernet1/0/19

!

interface FastEthernet1/0/20

!

interface FastEthernet1/0/21

!

interface FastEthernet1/0/22

!

interface FastEthernet1/0/23

!

interface FastEthernet1/0/24

!

interface FastEthernet1/0/25

!

interface FastEthernet1/0/26

!

interface FastEthernet1/0/27

!

interface FastEthernet1/0/28

!

interface FastEthernet1/0/29

!

interface FastEthernet1/0/30

!

interface FastEthernet1/0/31

!

interface FastEthernet1/0/32

!

interface FastEthernet1/0/33

!

interface FastEthernet1/0/34

!

interface FastEthernet1/0/35

!

interface FastEthernet1/0/36

!

interface FastEthernet1/0/37

!

interface FastEthernet1/0/38

!

interface FastEthernet1/0/39

!

interface FastEthernet1/0/40

!

interface FastEthernet1/0/41

!

interface FastEthernet1/0/42

!

interface FastEthernet1/0/43

!

interface FastEthernet1/0/44

!

interface FastEthernet1/0/45

!

interface FastEthernet1/0/46

!

interface FastEthernet1/0/47

!

interface FastEthernet1/0/48

!

interface GigabitEthernet1/0/1

!

interface GigabitEthernet1/0/2

!

interface GigabitEthernet1/0/3

!

interface GigabitEthernet1/0/4

```
!
interface Vlan1
 no ip address
 shutdown
!
ip classless
ip http server
ip http secure-server
!
!
control-plane
!
!
line con 0
line vty 5 15
!
end


cs2(config)#


cs3#sh run
Building configuration...


Current configuration : 2758 bytes
```

```
!
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname cs3
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
switch 1 provision ws-c3750-48ts
system mtu routing 1500
ip subnet-zero
!
!
!
!
!
!
!
```

!

!

!

!

spanning-tree mode pvst

spanning-tree extend system-id

spanning-tree vlan 4 priority 24576

!

vlan internal allocation policy ascending

!

!

!

interface Port-channel1

 switchport trunk encapsulation dot1q

 switchport mode trunk

 bandwidth 200000

!

interface FastEthernet1/0/1

 switchport trunk encapsulation dot1q

 switchport mode trunk

 channel-group 1 mode desirable

!

interface FastEthernet1/0/2

 switchport trunk encapsulation dot1q

```
 switchport mode trunk

 channel-group 1 mode desirable

!

interface FastEthernet1/0/3

!

interface FastEthernet1/0/4

!

interface FastEthernet1/0/5

 switchport trunk encapsulation dot1q

 switchport mode trunk

!

interface FastEthernet1/0/6

 switchport trunk encapsulation dot1q

 switchport trunk allowed vlan 4

 switchport mode trunk

!

interface FastEthernet1/0/7

!

interface FastEthernet1/0/8

!

interface FastEthernet1/0/9

!

interface FastEthernet1/0/10

!
```

```
interface FastEthernet1/0/11
!
interface FastEthernet1/0/12
!
interface FastEthernet1/0/13
!
interface FastEthernet1/0/14
!
interface FastEthernet1/0/15
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 2
 switchport mode trunk
!
interface FastEthernet1/0/16
 switchport access vlan 3
!
interface FastEthernet1/0/17
!
interface FastEthernet1/0/18
!
interface FastEthernet1/0/19
!
interface FastEthernet1/0/20
!
```

interface FastEthernet1/0/21

!

interface FastEthernet1/0/22

!

interface FastEthernet1/0/23

!

interface FastEthernet1/0/24

!

interface FastEthernet1/0/25

!

interface FastEthernet1/0/26

!

interface FastEthernet1/0/27

!

interface FastEthernet1/0/28

!

interface FastEthernet1/0/29

!

interface FastEthernet1/0/30

!

interface FastEthernet1/0/31

!

interface FastEthernet1/0/32

!

interface FastEthernet1/0/33

!

interface FastEthernet1/0/34

!

interface FastEthernet1/0/35

!

interface FastEthernet1/0/36

!

interface FastEthernet1/0/37

!

interface FastEthernet1/0/38

!

interface FastEthernet1/0/39

!

interface FastEthernet1/0/40

!

interface FastEthernet1/0/41

!

interface FastEthernet1/0/42

!

interface FastEthernet1/0/43

!

interface FastEthernet1/0/44

!

interface FastEthernet1/0/45

!

interface FastEthernet1/0/46

!

interface FastEthernet1/0/47

!

interface FastEthernet1/0/48

!

interface GigabitEthernet1/0/1

!

interface GigabitEthernet1/0/2

!

interface GigabitEthernet1/0/3

!

interface GigabitEthernet1/0/4

!

interface Vlan1

 no ip address

!

ip classless

ip http server

ip http secure-server

!

!

control-plane

!

!

line con 0

line vty 5 15

!

end

cs3#

denver#sh run

Building configuration...

Current configuration : 1942 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname denver

!

boot-start-marker

boot-end-marker

```
!
!
no aaa new-model
!
resource policy
!
no network-clock-participate slot 2
!
!
ip cef
!
!
!
voice-card 0
 no dspfarm
!
!
!
!
!
!
!
!
!
```

!

!

!

!

!

!

!

!

!

!

!

!

!

interface Loopback1

 ip address 172.16.0.193 255.255.255.192

!

interface Loopback2

 ip address 172.16.1.1 255.255.255.192

!

interface GigabitEthernet0/0

 ip address dhcp

 shutdown

 duplex auto

```
 speed auto

 media-type rj45

 negotiation auto

!

interface GigabitEthernet0/1

 no ip address

 shutdown

 duplex auto

 speed auto

 media-type rj45

 negotiation auto

!

interface Serial1/0

 ip address 172.16.1.227 255.255.255.248

 encapsulation frame-relay IETF

 ip ospf network non-broadcast

 no fair-queue

 serial restart-delay 0

 no dce-terminal-timing-enable

 frame-relay map ip 172.16.1.225 305 broadcast

 frame-relay map ip 172.16.1.226 306 broadcast

 frame-relay lmi-type ansi

!

interface Serial1/1
```

```
 no ip address
 shutdown
 serial restart-delay 0
 no dce-terminal-timing-enable
!
interface Serial1/2
 no ip address
 shutdown
 serial restart-delay 0
 no dce-terminal-timing-enable
!
interface Serial1/3
 no ip address
 shutdown
 serial restart-delay 0
 no dce-terminal-timing-enable
!
interface FastEthernet2/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet2/1
```

```
 no ip address
 shutdown
 duplex auto
 speed auto
!
router ospf 1
 log-adjacency-changes
 network 172.16.0.192 0.0.0.63 area 0
 network 172.16.1.0 0.0.0.63 area 0
 network 172.16.1.224 0.0.0.7 area 0
 neighbor 172.16.1.225
 neighbor 172.16.1.226
!
!
!
ip http server
no ip http secure-server
!
!
!
!
!
!
!
```

```
control-plane
!
!
!
!
!
!
!
!
!
!
line con 0
 stopbits 1
line aux 0
line vty 0 4
 login
!
scheduler allocate 20000 1000
!
webvpn context Default_context
 ssl authenticate verify all
 !
 no inservice
 !
```

!

end

denver#

frp1#sh run

Building configuration...

Current configuration : 1583 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname frp1

!

boot-start-marker

boot-end-marker

!

!

no aaa new-model

no network-clock-participate slot 2

ip cef

```
!
!
!
!
frame-relay switching
!
!
!
!
!
interface GigabitEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
!
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
!
```

```
interface Serial1/0
 no ip address
 encapsulation frame-relay IETF
 no fair-queue
 serial restart-delay 0
 frame-relay lmi-type ansi
 frame-relay intf-type nni
 frame-relay route 501 interface Serial1/3 201
 frame-relay route 502 interface Serial1/2 305
 frame-relay route 503 interface Serial1/2 306
!
interface Serial1/1
 no ip address
 shutdown
 serial restart-delay 0
!
interface Serial1/2
 no ip address
 encapsulation frame-relay IETF
 serial restart-delay 0
 frame-relay lmi-type ansi
 frame-relay intf-type dce
 frame-relay route 305 interface Serial1/0 502
 frame-relay route 306 interface Serial1/0 503
```

```
!
interface Serial1/3
 no ip address
 encapsulation frame-relay IETF
 serial restart-delay 0
 frame-relay lmi-type ansi
 frame-relay intf-type dce
 frame-relay route 201 interface Serial1/0 501
!
interface FastEthernet2/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet2/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
ip forward-protocol nd
!
ip http server
```

!

!

control-plane

!

!

line con 0

line aux 0

line vty 0 4

 login

!

scheduler allocate 20000 1000

!

end

frp1#

 frp2#sh run

Building configuration...

Current configuration : 1951 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec

```
no service password-encryption
!
hostname frp2
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
!
resource policy
!
no network-clock-participate slot 2
!
!
ip cef
!
!
!
frame-relay switching
voice-card 0
 no dspfarm
!
!
```

```
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
interface GigabitEthernet0/0
 no ip address
 shutdown
```

```
 duplex auto

 speed auto

 media-type rj45

 negotiation auto

!

interface GigabitEthernet0/1

 no ip address

 shutdown

 duplex auto

 speed auto

 media-type rj45

 negotiation auto

!

interface Serial1/0

 no ip address

 shutdown

 serial restart-delay 0

 no dce-terminal-timing-enable

!

interface Serial1/1

 no ip address

 encapsulation frame-relay IETF

 serial restart-delay 0

 no dce-terminal-timing-enable
```

```
  frame-relay lmi-type ansi

  frame-relay intf-type nni

  frame-relay route 501 interface Serial1/2 202

  frame-relay route 502 interface Serial1/2 301

  frame-relay route 503 interface Serial1/3 303

!

interface Serial1/2

 no ip address

 encapsulation frame-relay IETF

 serial restart-delay 0

 no dce-terminal-timing-enable

 frame-relay lmi-type ansi

 frame-relay intf-type dce

 frame-relay route 202 interface Serial1/1 501

 frame-relay route 301 interface Serial1/1 502

 frame-relay route 302 interface Serial1/3 304

!

interface Serial1/3

 no ip address

 encapsulation frame-relay IETF

 serial restart-delay 0

 no dce-terminal-timing-enable

 frame-relay lmi-type ansi

 frame-relay intf-type dce
```

```
 frame-relay route 303 interface Serial1/1 503

 frame-relay route 304 interface Serial1/2 302

!

interface FastEthernet2/0

 no ip address

 shutdown

 duplex auto

 speed auto

!

!

!

ip http server

no ip http secure-server

!

!

!

!

!

!

!

control-plane

!

!

!
```

```
!
!
!
!
!
!
!
line con 0
 stopbits 1
line aux 0
line vty 0 4
 login
!
scheduler allocate 20000 1000
!
webvpn context Default_context
 ssl authenticate verify all
 !
 no inservice
 !
 !
end

frp2#
```

```
ps1#sh run

Building configuration...


Current configuration : 2411 bytes

!

version 12.2

no service pad

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname ps1

!

boot-start-marker

boot-end-marker

!

!

!

!

no aaa new-model

system mtu routing 1500

!

!
```

```
!
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
spanning-tree vlan 10 priority 24576
!
vlan internal allocation policy ascending
!
!
!
interface Port-channel1
 switchport access vlan 10
 switchport mode dot1q-tunnel
 bandwidth 200000
 l2protocol-tunnel cdp
 l2protocol-tunnel lldp
 l2protocol-tunnel stp
 l2protocol-tunnel vtp
!
```

```
interface FastEthernet0/1

 switchport access vlan 10

 switchport mode dot1q-tunnel

 l2protocol-tunnel cdp

 l2protocol-tunnel lldp

 l2protocol-tunnel stp

 l2protocol-tunnel vtp

 no cdp enable

 channel-group 1 mode desirable

!

interface FastEthernet0/2

 switchport access vlan 10

 switchport mode dot1q-tunnel

 l2protocol-tunnel cdp

 l2protocol-tunnel lldp

 l2protocol-tunnel stp

 l2protocol-tunnel vtp

 no cdp enable

 channel-group 1 mode desirable

!

interface FastEthernet0/3

!

interface FastEthernet0/4

!
```

```
interface FastEthernet0/5
 switchport access vlan 20
 switchport mode dot1q-tunnel
 l2protocol-tunnel cdp
 l2protocol-tunnel lldp
 l2protocol-tunnel stp
 l2protocol-tunnel vtp
 no cdp enable
!
interface FastEthernet0/6
 switchport access vlan 40
 switchport mode dot1q-tunnel
 l2protocol-tunnel cdp
 l2protocol-tunnel lldp
 l2protocol-tunnel stp
 l2protocol-tunnel vtp
 no cdp enable
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
 switchport trunk encapsulation dot1q
```

```
  switchport trunk allowed vlan 10,40

  switchport mode trunk

!

interface FastEthernet0/10

  switchport trunk encapsulation dot1q

  switchport trunk allowed vlan 10,20

  switchport mode trunk

!

interface FastEthernet0/11

!

interface FastEthernet0/12

!

interface FastEthernet0/13

!

interface FastEthernet0/14

!

interface FastEthernet0/15

!

interface FastEthernet0/16

!

interface FastEthernet0/17

!

interface FastEthernet0/18

!
```

interface FastEthernet0/19

!

interface FastEthernet0/20

!

interface FastEthernet0/21

!

interface FastEthernet0/22

!

interface FastEthernet0/23

!

interface FastEthernet0/24

!

interface GigabitEthernet0/1

!

interface GigabitEthernet0/2

!

interface Vlan1

 no ip address

!

ip classless

ip http server

ip http secure-server

!

ip sla enable reaction-alerts

```
!
!
line con 0
line vty 5 15
!
end

ps1#

ps2#sh run
Building configuration...

Current configuration : 3270 bytes
!
version 12.2
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname ps2
!
!
no aaa new-model
```

```
switch 1 provision ws-c3750-48ts

ip subnet-zero

!

!

!

!

!

!

no file verify auto

!

spanning-tree mode pvst

spanning-tree extend system-id

spanning-tree vlan 20,30 priority 24576

!

vlan internal allocation policy ascending

!

!

interface Port-channel1

 switchport access vlan 10

 switchport trunk encapsulation dot1q

 switchport mode dot1q-tunnel

 bandwidth 200000

!

interface FastEthernet1/0/1
```

```
  switchport access vlan 10

  switchport trunk encapsulation dot1q

  switchport mode dot1q-tunnel

  l2protocol-tunnel cdp

  l2protocol-tunnel stp

  l2protocol-tunnel vtp

  no cdp enable

  channel-group 1 mode desirable

!

interface FastEthernet1/0/2

  switchport access vlan 10

  switchport trunk encapsulation dot1q

  switchport mode dot1q-tunnel

  l2protocol-tunnel cdp

  l2protocol-tunnel stp

  l2protocol-tunnel vtp

  no cdp enable

  channel-group 1 mode desirable

!

interface FastEthernet1/0/3

!

interface FastEthernet1/0/4

!

interface FastEthernet1/0/5
```

```
  switchport access vlan 20

  switchport mode dot1q-tunnel

  l2protocol-tunnel cdp

  l2protocol-tunnel stp

  l2protocol-tunnel vtp

  no cdp enable

!

interface FastEthernet1/0/6

  switchport access vlan 30

  switchport mode dot1q-tunnel

  l2protocol-tunnel cdp

  l2protocol-tunnel stp

  l2protocol-tunnel vtp

  no cdp enable

!

interface FastEthernet1/0/7

!

interface FastEthernet1/0/8

!

interface FastEthernet1/0/9

!

interface FastEthernet1/0/10

  switchport trunk encapsulation dot1q

  switchport trunk allowed vlan 10,20
```

```
 switchport mode trunk

!

interface FastEthernet1/0/11

 switchport trunk encapsulation dot1q

 switchport trunk allowed vlan 10,30

 switchport mode trunk

!

interface FastEthernet1/0/12

!

interface FastEthernet1/0/13

!

interface FastEthernet1/0/14

!

interface FastEthernet1/0/15

 switchport access vlan 10

 switchport mode dot1q-tunnel

 l2protocol-tunnel stp

 no cdp enable

!

interface FastEthernet1/0/16

!

interface FastEthernet1/0/17

!

interface FastEthernet1/0/18
```

!

interface FastEthernet1/0/19

!

interface FastEthernet1/0/20

!

interface FastEthernet1/0/21

!

interface FastEthernet1/0/22

!

interface FastEthernet1/0/23

!

interface FastEthernet1/0/24

!

interface FastEthernet1/0/25

!

interface FastEthernet1/0/26

!

interface FastEthernet1/0/27

!

interface FastEthernet1/0/28

!

interface FastEthernet1/0/29

!

interface FastEthernet1/0/30

!

interface FastEthernet1/0/31

!

interface FastEthernet1/0/32

!

interface FastEthernet1/0/33

!

interface FastEthernet1/0/34

!

interface FastEthernet1/0/35

!

interface FastEthernet1/0/36

!

interface FastEthernet1/0/37

!

interface FastEthernet1/0/38

!

interface FastEthernet1/0/39

!

interface FastEthernet1/0/40

!

interface FastEthernet1/0/41

!

interface FastEthernet1/0/42

```
!
interface FastEthernet1/0/43
!
interface FastEthernet1/0/44
!
interface FastEthernet1/0/45
!
interface FastEthernet1/0/46
!
interface FastEthernet1/0/47
!
interface FastEthernet1/0/48
!
interface GigabitEthernet1/0/1
!
interface GigabitEthernet1/0/2
!
interface GigabitEthernet1/0/3
!
interface GigabitEthernet1/0/4
!
interface Vlan1
 no ip address
!
```

```
ip classless

ip http server

ip http secure-server

!

!

!

control-plane

!

!

line con 0

line vty 5 15

!

!

end


ps2#


ps3#sh run

Building configuration...


Current configuration : 3282 bytes

!

version 12.2

no service pad
```

```
service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname ps3

!

boot-start-marker

boot-end-marker

!

!

!

!

no aaa new-model

switch 1 provision ws-c3750-48ts

system mtu routing 1500

!

!

!

!

!

!

!

!

!
```

```
spanning-tree mode pvst

spanning-tree extend system-id

spanning-tree vlan 40 priority 24576

!

vlan internal allocation policy ascending

!

!

!

!

interface Port-channel1

 switchport access vlan 10

 switchport mode dot1q-tunnel

 bandwidth 200000

 l2protocol-tunnel cdp

 l2protocol-tunnel lldp

 l2protocol-tunnel stp

 l2protocol-tunnel vtp

!

interface FastEthernet1/0/1

 switchport access vlan 10

 switchport mode dot1q-tunnel

 l2protocol-tunnel cdp

 l2protocol-tunnel lldp

 l2protocol-tunnel stp
```

```
 l2protocol-tunnel vtp

 no cdp enable

 channel-group 1 mode desirable

!

interface FastEthernet1/0/2

 switchport access vlan 10

 switchport mode dot1q-tunnel

 l2protocol-tunnel cdp

 l2protocol-tunnel lldp

 l2protocol-tunnel stp

 l2protocol-tunnel vtp

 no cdp enable

 channel-group 1 mode desirable

!

interface FastEthernet1/0/3

!

interface FastEthernet1/0/4

!

interface FastEthernet1/0/5

 switchport access vlan 30

 switchport mode dot1q-tunnel

 l2protocol-tunnel cdp

 l2protocol-tunnel lldp

 l2protocol-tunnel stp
```

```
 l2protocol-tunnel vtp

 no cdp enable

!

interface FastEthernet1/0/6

 switchport access vlan 40

 switchport mode dot1q-tunnel

 l2protocol-tunnel cdp

 l2protocol-tunnel lldp

 l2protocol-tunnel stp

 l2protocol-tunnel vtp

 no cdp enable

!

interface FastEthernet1/0/7

!

interface FastEthernet1/0/8

!

interface FastEthernet1/0/9

 switchport trunk encapsulation dot1q

 switchport trunk allowed vlan 10,40

 switchport mode trunk

!

interface FastEthernet1/0/10

!

interface FastEthernet1/0/11
```

switchport trunk encapsulation dot1q

 switchport trunk allowed vlan 10,30

 switchport mode trunk

!

interface FastEthernet1/0/12

!

interface FastEthernet1/0/13

!

interface FastEthernet1/0/14

!

interface FastEthernet1/0/15

!

interface FastEthernet1/0/16

!

interface FastEthernet1/0/17

!

interface FastEthernet1/0/18

!

interface FastEthernet1/0/19

!

interface FastEthernet1/0/20

!

interface FastEthernet1/0/21

!

interface FastEthernet1/0/22

!

interface FastEthernet1/0/23

!

interface FastEthernet1/0/24

!

interface FastEthernet1/0/25

!

interface FastEthernet1/0/26

!

interface FastEthernet1/0/27

!

interface FastEthernet1/0/28

!

interface FastEthernet1/0/29

!

interface FastEthernet1/0/30

!

interface FastEthernet1/0/31

!

interface FastEthernet1/0/32

!

interface FastEthernet1/0/33

!

interface FastEthernet1/0/34

!

interface FastEthernet1/0/35

!

interface FastEthernet1/0/36

!

interface FastEthernet1/0/37

!

interface FastEthernet1/0/38

!

interface FastEthernet1/0/39

!

interface FastEthernet1/0/40

!

interface FastEthernet1/0/41

!

interface FastEthernet1/0/42

!

interface FastEthernet1/0/43

!

interface FastEthernet1/0/44

!

interface FastEthernet1/0/45

!

```
interface FastEthernet1/0/46
!
interface FastEthernet1/0/47
!
interface FastEthernet1/0/48
!
interface GigabitEthernet1/0/1
!
interface GigabitEthernet1/0/2
!
interface GigabitEthernet1/0/3
!
interface GigabitEthernet1/0/4
!
interface Vlan1
 no ip address
!
ip classless
ip http server
ip http secure-server
!
!
!
!
```

!

line con 0

line vty 5 15

!

end

ps3#

springs#sh run

Building configuration...

Current configuration : 1710 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname springs

!

boot-start-marker

boot-end-marker

!

!

```
no aaa new-model

no network-clock-participate slot 2

ip cef

!

!

!

!

!

!

!

!

!

interface Loopback1

 ip address 172.16.1.97 255.255.255.224

!

interface Loopback2

 ip address 172.16.0.1 255.255.255.128

!

interface GigabitEthernet0/0

 no ip address

 shutdown

 duplex auto

 speed auto

 media-type rj45
```

```
!
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
!
interface Serial1/0
 no ip address
 encapsulation frame-relay IETF
 serial restart-delay 0
 frame-relay lmi-type ansi
!
interface Serial1/0.202 point-to-point
 ip address 172.16.1.234 255.255.255.252
 ip ospf network non-broadcast
 frame-relay interface-dlci 202
!
interface Serial1/0.300 multipoint
 ip address 172.16.1.225 255.255.255.248
 ip ospf network non-broadcast
 frame-relay map ip 172.16.1.226 302
 frame-relay map ip 172.16.1.227 301
```

```
!
interface Serial1/1
 no ip address
 shutdown
 serial restart-delay 0
!
interface Serial1/2
 no ip address
 serial restart-delay 0
!
interface Serial1/3
 no ip address
 shutdown
 serial restart-delay 0
!
interface FastEthernet2/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
router ospf 1
 log-adjacency-changes
 network 172.16.0.0 0.0.0.127 area 0
```

```
 network 172.16.1.96 0.0.0.31 area 0

 network 172.16.1.224 0.0.0.7 area 0

 network 172.16.1.232 0.0.0.3 area 0

 neighbor 172.16.1.233

 neighbor 172.16.1.226

 neighbor 172.16.1.227

!

ip forward-protocol nd

!

ip http server

!

!

control-plane

!

!

line con 0

line aux 0

line vty 0 4

 login

!

scheduler allocate 20000 1000

!

end
```

springs#