

```
DSW2#
DSW2#show running-config
Building configuration...

Current configuration : 5879 bytes
!
version 12.2
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname DSW2
!
!
no aaa new-model
ipv6 unicast-routing
ip subnet-zero
ip routing
!
ip multicast-routing
vtp domain netlearning
vtp mode transparent
!
!
crypto pki trustpoint TP-self-signed-4246780416
  enrollment selfsigned
  subject-name cn=IOS-Self-Signed-Certificate-4246780416
  revocation-check none
  rsakeypair TP-self-signed-4246780416
!
!
crypto pki certificate chain TP-self-signed-4246780416
  certificate self-signed 01
    3082023D 308201A6 A0030201 02020101 300D0609 2A864886 F70D0101 04050030
    31312F30 2D060355 04031326 494F532D 53656C66 2D536967 6E65642D 43657274
    69666963 6174652D 34323436 37383034 3136301E 170D3933 30333031 30303031
    30345A17 0D323030 31303130 30303030 305A3031 312F302D 06035504 03132649
    4F532D53 656C662D 5369676E 65642D43 65727469 66696361 74652D34 32343637
    38303431 3630819F 300D0609 2A864886 F70D0101 01050003 818D0030 81890281
    8100D699 D2A8BD0D A26CE645 B2CE1EC4 EF83204E CBA4D34A B03BC30C 7BF013B1
    5BDEC621 F3CE12CC BC929D9C 463A59DC D49CEF76 3D5193FD 7992F7FF 660F179F
    54CA6370 902081BB ABB71246 5DC79E39 D241B749 11CB4812 07CF1238 A25C59F6
    740464A7 6B3EAE02 6B6B0C13 9B534C70 85BD199E E52D4FB2 AB4C4B5F 678ECD24
    17B30203 010001A3 65306330 0F060355 1D130101 FF040530 030101FF 30100603
    551D1104 09300782 05445357 322E301F 0603551D 23041830 168014A7 8C27C43F
    00BEB401 3F63B68A 9CD582EF D7B15430 1D060355 1D0E0416 0414A78C 27C43F00
    BEB4013F 63B68A9C D582EFD7 B154300D 06092A86 4886F70D 01010405 00038181
    00B9A060 055A57EE 0EE7C450 128718FA 07A5DCE4 8EABE33F 56BA385F 8F9477E8
    191A361C EBEBF296 6A2E4637 11BB4D89 CDFA4DDB 7229B8F1 856DCE18 DF11CA57
    180C3686 28E9079C F004E71B A9F11040 7C952427 573ED2F5 AB38C4D9 768156A4
    C597E2E3 B9D4C611 F902BEA8 A18209DD 239160AE E6AC24DE 41AD980B 261778F5
AA
quit
```

```
!  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
spanning-tree vlan 10,200 priority 8192  
spanning-tree vlan 20 priority 4096  
!  
vlan internal allocation policy ascending  
!  
vlan 10,20,200  
!  
!  
!  
!  
!  
!  
interface Tunnel67  
  no ip address  
  ipv6 address 2026::3:2/122  
  ipv6 enable  
  ipv6 rip RIPNG enable  
  tunnel source 10.2.4.14  
  tunnel destination 10.2.4.13  
!  
interface Port-channel12  
  no switchport  
  ip address 10.2.4.14 255.255.255.252  
  ip pim sparse-dense-mode  
!  
interface Port-channel23  
  switchport trunk encapsulation dot1q  
  switchport trunk allowed vlan 10,200  
  switchport mode trunk  
!  
interface Port-channel24  
  switchport trunk encapsulation dot1q  
  switchport trunk allowed vlan 20,200  
  switchport mode trunk  
!  
interface FastEthernet0/1  
  no switchport  
  ip address 10.1.4.10 255.255.255.252  
  ip pim sparse-dense-mode  
!  
interface FastEthernet0/2  
  switchport mode access  
  shutdown  
!  
interface FastEthernet0/3  
  switchport mode access  
!  
interface FastEthernet0/4  
  switchport mode access
```

```
shutdown
!
interface FastEthernet0/5
  switchport mode access
  shutdown
!
interface FastEthernet0/6
  switchport mode access
  shutdown
!
interface FastEthernet0/7
  switchport mode access
  shutdown
!
interface FastEthernet0/8
  switchport mode access
  shutdown
!
interface FastEthernet0/9
  switchport mode access
  shutdown
!
interface FastEthernet0/10
  switchport mode access
  shutdown
!
interface FastEthernet0/11
  switchport mode access
  shutdown
!
interface FastEthernet0/12
  switchport mode access
  shutdown
!
interface FastEthernet0/13
  switchport mode access
  shutdown
!
interface FastEthernet0/14
  switchport mode access
  shutdown
!
interface FastEthernet0/15
  switchport mode access
!
interface FastEthernet0/16
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 20,200
  switchport mode trunk
  channel-group 24 mode desirable
!
interface FastEthernet0/17
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 20,200
```

```
switchport mode trunk
channel-group 24 mode desirable
!
interface FastEthernet0/18
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 20,200
switchport mode trunk
channel-group 24 mode desirable
!
interface FastEthernet0/19
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 10,200
switchport mode trunk
channel-group 23 mode active
!
interface FastEthernet0/20
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 10,200
switchport mode trunk
channel-group 23 mode active
!
interface FastEthernet0/21
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 10,200
switchport mode trunk
channel-group 23 mode active
!
interface FastEthernet0/22
no switchport
no ip address
channel-group 12 mode on
!
interface FastEthernet0/23
no switchport
no ip address
channel-group 12 mode on
!
interface FastEthernet0/24
no switchport
no ip address
channel-group 12 mode on
!
interface GigabitEthernet0/1
switchport mode dynamic desirable
shutdown
!
interface GigabitEthernet0/2
switchport mode dynamic desirable
shutdown
!
interface Vlan1
no ip address
shutdown
!
```

```
interface Vlan10
 ip address 10.2.1.2 255.255.255.0
 ip helper-address 10.1.4.9
 ip pim sparse-dense-mode
 standby 10 ip 10.2.1.254
 standby 10 priority 20
!
interface Vlan20
 ip address 10.2.2.1 255.255.255.0
 ip pim sparse-dense-mode
!
interface Vlan200
 ip address 192.168.1.130 255.255.255.224
!
!
router eigrp 10
 no auto-summary
 network 10.1.4.10 0.0.0.0
 network 10.2.1.2 0.0.0.0
 network 10.2.2.1 0.0.0.0
 network 10.2.4.14 0.0.0.0
!
ip classless
ip http server
ip http secure-server
!
!
ip access-list standard DENY_10
 deny 10.0.0.0 0.255.255.255
 permit any
ip access-list standard DENY_ALL
 deny any
ip access-list standard PERMIT_10
 permit 10.0.0.0 0.255.255.255
ip access-list standard PERMIT_ALL
 permit any
!
ipv6 router rip RIPNG
!
!
control-plane
!
!
line con 0
 exec-timeout 0 0
 logging synchronous
line vty 0 4
 login
line vty 5 15
 login
!
end
```

DSW2#

```
DSW2#ping 209.65.200.241
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 209.65.200.241, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 32/33/36 ms
```

```
DSW2#
```

```
DSW2#ping 209.65.200.226
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 209.65.200.226, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 32/32/32 ms
```

```
DSW2#
```

```
DSW2#ping 209.65.200.225
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 209.65.200.225, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/71/96 ms
```

```
DSW2#
```



```
DSW2#ping 10.1.1.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 128/129/132  
ms
```

```
DSW2#
```

```
DSW2#ping 10.1.1.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.2, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/67/76 ms
```

```
DSW2#
```

```
DSW2#ping 10.1.1.5
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.5, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/67/72 ms
```

```
DSW2#
```

```
DSW2#ping 10.1.1.6
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.6, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 128/130/132  
ms
```

```
DSW2#
```

```
DSW2#ping 10.1.1.9
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.9, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 128/130/132  
ms
```

```
DSW2#
```

```
DSW2#ping 10.1.1.10
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.10, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/196/208  
ms
```

```
DSW2#
```

```
DSW2#ping 10.1.4.10
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.4.10, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/196  
ms  
DSW2#
```

```
DSW2#ping 10.1.4.9
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 10.1.4.9, timeout is 2 seconds:  
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/196  
ms  
DSW2#
```

```
DSW2#ping 10.1.4.6
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.4.6, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/196  
ms
```

```
DSW2#
```

```
DSW2#ping 10.1.4.5
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.4.5, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/196
```

```
ms
```

```
DSW2#
```



```
DSW2#ping 10.2.1.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.1.1, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/195/196
```

```
ms
```

```
DSW2#
```

```
DSW2#ping 10.2.2.2
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 10.2.2.2, timeout is 2 seconds:  
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/250/316  
ms  
DSW2#
```

```
DSW2#ping 10.2.1.254
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 10.2.1.254, timeout is 2 seconds:  
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/195/196  
ms  
DSW2#
```

```
DSW2#ping 10.2.4.14
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.4.14, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/196/204  
ms
```

```
DSW2#
```

```
DSW2#ping 10.2.4.13
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.4.13, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/196/204  
ms
```

```
DSW2#
```

```
DSW2#ping 10.2.1.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.1.2, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/200
```

```
ms
```

```
DSW2#
```

```
DSW2#ping 10.2.2.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.2.1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/195/200  
ms
```

```
DSW2#
```

```
DSW2#ping 10.2.1.4
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.1.4, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/196  
ms
```

DSW2#

```
DSW2#
DSW2#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol
Vlan1              unassigned     YES NVRAM  administratively down
down
Vlan10            10.2.1.2       YES NVRAM  up
up
Vlan20            10.2.2.1       YES NVRAM  up
up
Vlan200          192.168.1.130 YES NVRAM  up
up
FastEthernet0/1   10.1.4.10      YES NVRAM  up
up
FastEthernet0/2   unassigned     YES unset  administratively down
down
```

FastEthernet0/3 down	unassigned	YES	unset	down
FastEthernet0/4 down	unassigned	YES	unset	administratively down
FastEthernet0/5 down	unassigned	YES	unset	administratively down
FastEthernet0/6 down	unassigned	YES	unset	administratively down
FastEthernet0/7 down	unassigned	YES	unset	administratively down
FastEthernet0/8 down	unassigned	YES	unset	administratively down
FastEthernet0/9 down	unassigned	YES	unset	administratively down
FastEthernet0/10 down	unassigned	YES	unset	administratively down
FastEthernet0/11 down	unassigned	YES	unset	administratively down
FastEthernet0/12 down	unassigned	YES	unset	administratively down
FastEthernet0/13 down	unassigned	YES	unset	administratively down
FastEthernet0/14 down	unassigned	YES	unset	administratively down
FastEthernet0/15 down	unassigned	YES	unset	down
FastEthernet0/16 up	unassigned	YES	unset	up
FastEthernet0/17 up	unassigned	YES	unset	up
FastEthernet0/18 up	unassigned	YES	unset	up
FastEthernet0/19 up	unassigned	YES	unset	up
FastEthernet0/20 up	unassigned	YES	unset	up
FastEthernet0/21 up	unassigned	YES	unset	up
FastEthernet0/22 up	unassigned	YES	NVRAM	up
FastEthernet0/23 up	unassigned	YES	NVRAM	up
FastEthernet0/24 up	unassigned	YES	NVRAM	up
GigabitEthernet0/1 down	unassigned	YES	unset	administratively down
GigabitEthernet0/2 down	unassigned	YES	unset	administratively down
Port-channel12 up	10.2.4.14	YES	NVRAM	up
Port-channel23 up	unassigned	YES	unset	up
Port-channel24 up	unassigned	YES	unset	up



```
Tunnel67          unassigned      YES NVRAM  up
up
DSW2#
```

```
DSW2#show ip route
```

```
Codes: 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
```

```
Gateway of last resort is 10.1.4.9 to network 0.0.0.0
```

```
10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
C      10.2.4.12/30 is directly connected, Port-channel12
```

```
D EX 10.1.1.8/30 [170/261120] via 10.1.4.9, 00:44:56, FastEthernet0/1
C 10.1.4.8/30 is directly connected, FastEthernet0/1
C 10.2.1.0/24 is directly connected, Vlan10
C 10.2.2.0/24 is directly connected, Vlan20
D 10.1.4.4/30 [90/28416] via 10.2.2.2, 00:44:56, Vlan20
    [90/28416] via 10.2.1.1, 00:44:56, Vlan10
    192.168.1.0/27 is subnetted, 1 subnets
C 192.168.1.128 is directly connected, Vlan200
D*EX 0.0.0.0/0 [170/261120] via 10.1.4.9, 00:44:56, FastEthernet0/1
DSW2#
```

```
DSW2#show processes cpu
```

```
CPU utilization for five seconds: 0%/0%; one minute: 1%; five minutes: 1%
```

PID	Runtime (ms)	Invoked	uSecs	5Sec	1Min	5Min	TTY	Process
1	0	9	0	0.00%	0.00%	0.00%	0	Chunk
Manager								
2	8	1245	6	0.00%	0.00%	0.00%	0	Load Meter
3	24	87	275	0.00%	0.00%	0.00%	0	SpanTree

```
Helper
```















DSW2#show interfaces

```
Vlan1 is administratively down, line protocol is down
  Hardware is EtherSVI, address is 000b.fd20.ba00 (bia 000b.fd20.ba00)
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not supported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 1 interface resets
    0 output buffer failures, 0 output buffers swapped out
Vlan10 is up, line protocol is up
  Hardware is EtherSVI, address is 000b.fd20.ba00 (bia 000b.fd20.ba00)
  Internet address is 10.2.1.2/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not supported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:01, output 00:00:02, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 6
```

```
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  3988 packets input, 309821 bytes, 0 no buffer
  Received 0 broadcasts (1241 IP multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  3941 packets output, 273419 bytes, 0 underruns
  0 output errors, 0 interface resets
  0 output buffer failures, 0 output buffers swapped out
Vlan20 is up, line protocol is up
  Hardware is EtherSVI, address is 000b.fd20.ba00 (bia 000b.fd20.ba00)
  Internet address is 10.2.2.1/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not supported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:02, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 6
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1533 packets input, 124657 bytes, 0 no buffer
    Received 0 broadcasts (1253 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    1868 packets output, 142492 bytes, 0 underruns
    0 output errors, 0 interface resets
    0 output buffer failures, 0 output buffers swapped out
Vlan200 is up, line protocol is up
  Hardware is EtherSVI, address is 000b.fd20.ba00 (bia 000b.fd20.ba00)
  Internet address is 192.168.1.130/27
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not supported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:49:28, output 01:43:17, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 6
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    2 packets input, 128 bytes, 0 no buffer
    Received 0 broadcasts (0 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    1 packets output, 60 bytes, 0 underruns
    0 output errors, 0 interface resets
```

```
0 output buffer failures, 0 output buffers swapped out
FastEthernet0/1 is up, line protocol is up (connected)
  Hardware is Fast Ethernet, address is 000b.fd20.ba00 (bia
000b.fd20.ba00)
  Internet address is 10.1.4.10/30
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    2789 packets input, 234958 bytes, 0 no buffer
    Received 1896 broadcasts (1401 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 1893 multicast, 0 pause input
    0 input packets with dribble condition detected
    2794 packets output, 259729 bytes, 0 underruns
    0 output errors, 0 collisions, 3 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/2 is administratively down, line protocol is down
(disabled)
  Hardware is Fast Ethernet, address is 000b.fd20.ba02 (bia
000b.fd20.ba02)
  MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast, 0 pause input
    0 input packets with dribble condition detected
```

```
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/3 is down, line protocol is down (notconnect)
  Hardware is Fast Ethernet, address is 000b.fd20.ba03 (bia
000b.fd20.ba03)
  MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast, 0 pause input
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/4 is administratively down, line protocol is down
(disabled)
  Hardware is Fast Ethernet, address is 000b.fd20.ba04 (bia
000b.fd20.ba04)
  MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
```

```
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 watchdog, 0 multicast, 0 pause input
0 input packets with dribble condition detected
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 1 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier, 0 PAUSE output
0 output buffer failures, 0 output buffers swapped out
FastEthernet0/5 is administratively down, line protocol is down
(disabled)
Hardware is Fast Ethernet, address is 000b.fd20.ba05 (bia
000b.fd20.ba05)
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Auto-duplex, Auto-speed, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 0 multicast, 0 pause input
  0 input packets with dribble condition detected
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
FastEthernet0/6 is administratively down, line protocol is down
(disabled)
Hardware is Fast Ethernet, address is 000b.fd20.ba06 (bia
000b.fd20.ba06)
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Auto-duplex, Auto-speed, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
```

```
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 0 multicast, 0 pause input
  0 input packets with dribble condition detected
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
FastEthernet0/7 is administratively down, line protocol is down
(disabled)
  Hardware is Fast Ethernet, address is 000b.fd20.ba07 (bia
000b.fd20.ba07)
  MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 0 multicast, 0 pause input
  0 input packets with dribble condition detected
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
FastEthernet0/8 is administratively down, line protocol is down
(disabled)
  Hardware is Fast Ethernet, address is 000b.fd20.ba08 (bia
000b.fd20.ba08)
  MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
```

Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0  
Queueing strategy: fifo  
Output queue: 0/40 (size/max)  
5 minute input rate 0 bits/sec, 0 packets/sec  
5 minute output rate 0 bits/sec, 0 packets/sec  
0 packets input, 0 bytes, 0 no buffer  
Received 0 broadcasts (0 multicasts)  
0 runts, 0 giants, 0 throttles  
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored  
0 watchdog, 0 multicast, 0 pause input  
0 input packets with dribble condition detected  
0 packets output, 0 bytes, 0 underruns  
0 output errors, 0 collisions, 1 interface resets  
0 babbles, 0 late collision, 0 deferred  
0 lost carrier, 0 no carrier, 0 PAUSE output  
0 output buffer failures, 0 output buffers swapped out  
FastEthernet0/9 is administratively down, line protocol is down  
(disabled)

Hardware is Fast Ethernet, address is 000b.fd20.ba09 (bia  
000b.fd20.ba09)  
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,  
reliability 255/255, txload 1/255, rxload 1/255  
Encapsulation ARPA, loopback not set  
Keepalive set (10 sec)  
Auto-duplex, Auto-speed, media type is 10/100BaseTX  
input flow-control is off, output flow-control is unsupported  
ARP type: ARPA, ARP Timeout 04:00:00  
Last input never, output never, output hang never  
Last clearing of "show interface" counters never  
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0

Queueing strategy: fifo  
Output queue: 0/40 (size/max)  
5 minute input rate 0 bits/sec, 0 packets/sec  
5 minute output rate 0 bits/sec, 0 packets/sec  
0 packets input, 0 bytes, 0 no buffer  
Received 0 broadcasts (0 multicasts)  
0 runts, 0 giants, 0 throttles  
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored  
0 watchdog, 0 multicast, 0 pause input  
0 input packets with dribble condition detected  
0 packets output, 0 bytes, 0 underruns  
0 output errors, 0 collisions, 1 interface resets  
0 babbles, 0 late collision, 0 deferred  
0 lost carrier, 0 no carrier, 0 PAUSE output  
0 output buffer failures, 0 output buffers swapped out  
FastEthernet0/10 is administratively down, line protocol is down  
(disabled)

Hardware is Fast Ethernet, address is 000b.fd20.ba0a (bia  
000b.fd20.ba0a)  
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,  
reliability 255/255, txload 1/255, rxload 1/255  
Encapsulation ARPA, loopback not set  
Keepalive set (10 sec)  
Auto-duplex, Auto-speed, media type is 10/100BaseTX

```
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 0 multicast, 0 pause input
  0 input packets with dribble condition detected
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
FastEthernet0/11 is administratively down, line protocol is down
(disabled)
```

```
Hardware is Fast Ethernet, address is 000b.fd20.ba0b (bia
000b.fd20.ba0b)
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Auto-duplex, Auto-speed, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 0 multicast, 0 pause input
  0 input packets with dribble condition detected
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
FastEthernet0/12 is administratively down, line protocol is down
(disabled)
```

```
Hardware is Fast Ethernet, address is 000b.fd20.ba0c (bia
000b.fd20.ba0c)
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
```



```
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Auto-duplex, Auto-speed, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast, 0 pause input
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/13 is administratively down, line protocol is down
(disabled)
    Hardware is Fast Ethernet, address is 000b.fd20.ba0d (bia
000b.fd20.ba0d)
    MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Auto-duplex, Auto-speed, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast, 0 pause input
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
```

```
FastEthernet0/14 is administratively down, line protocol is down
(disabled)
  Hardware is Fast Ethernet, address is 000b.fd20.ba0e (bia
000b.fd20.ba0e)
  MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast, 0 pause input
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/15 is down, line protocol is down (notconnect)
  Hardware is Fast Ethernet, address is 000b.fd20.ba0f (bia
000b.fd20.ba0f)
  MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast, 0 pause input
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
```

```
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/16 is up, line protocol is up (connected)
  Hardware is Fast Ethernet, address is 000b.fd20.ba10 (bia
000b.fd20.ba10)
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:17, output 00:00:02, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1176 packets input, 118775 bytes, 0 no buffer
  Received 550 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 550 multicast, 0 pause input
    0 input packets with dribble condition detected
  3058 packets output, 276418 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/17 is up, line protocol is up (connected)
  Hardware is Fast Ethernet, address is 000b.fd20.ba11 (bia
000b.fd20.ba11)
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:18, output 00:00:03, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    5694 packets input, 465062 bytes, 0 no buffer
  Received 4987 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 4978 multicast, 0 pause input
    0 input packets with dribble condition detected
```

```
    1190 packets output, 119168 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/18 is up, line protocol is up (connected)
  Hardware is Fast Ethernet, address is 000b.fd20.ba12 (bia
000b.fd20.ba12)
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:01, output 00:00:04, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1176 packets input, 118775 bytes, 0 no buffer
    Received 550 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 550 multicast, 0 pause input
    0 input packets with dribble condition detected
    4607 packets output, 365000 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/19 is up, line protocol is up (connected)
  Hardware is Fast Ethernet, address is 000b.fd20.ba13 (bia
000b.fd20.ba13)
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:04, output 00:00:04, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 1000 bits/sec, 2 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    11499 packets input, 913006 bytes, 0 no buffer
    Received 10786 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
```

```
0 watchdog, 10519 multicast, 0 pause input
0 input packets with dribble condition detected
5156 packets output, 434945 bytes, 0 underruns
0 output errors, 0 collisions, 1 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier, 0 PAUSE output
0 output buffer failures, 0 output buffers swapped out
FastEthernet0/20 is up, line protocol is up (connected)
Hardware is Fast Ethernet, address is 000b.fd20.ba14 (bia
000b.fd20.ba14)
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Full-duplex, 100Mb/s, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:01, output 00:00:07, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  1362 packets input, 143871 bytes, 0 no buffer
  Received 552 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 552 multicast, 0 pause input
  0 input packets with dribble condition detected
  1297 packets output, 136266 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
FastEthernet0/21 is up, line protocol is up (connected)
Hardware is Fast Ethernet, address is 000b.fd20.ba15 (bia
000b.fd20.ba15)
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Full-duplex, 100Mb/s, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:19, output 00:00:04, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  1178 packets input, 127733 bytes, 0 no buffer
  Received 552 broadcasts (0 multicasts)
```

```
0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 watchdog, 552 multicast, 0 pause input
0 input packets with dribble condition detected
1728 packets output, 166566 bytes, 0 underruns
0 output errors, 0 collisions, 1 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier, 0 PAUSE output
0 output buffer failures, 0 output buffers swapped out
FastEthernet0/22 is up, line protocol is up (connected)
Hardware is Fast Ethernet, address is 000b.fd20.ba00 (bia
000b.fd20.ba00)
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Full-duplex, 100Mb/s, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:40, output 00:00:07, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  2805 packets input, 271376 bytes, 0 no buffer
  Received 1856 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 1848 multicast, 0 pause input
  0 input packets with dribble condition detected
  2801 packets output, 262784 bytes, 0 underruns
  0 output errors, 0 collisions, 3 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
FastEthernet0/23 is up, line protocol is up (connected)
Hardware is Fast Ethernet, address is 000b.fd20.ba00 (bia
000b.fd20.ba00)
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Full-duplex, 100Mb/s, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:41, output 00:00:08, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
```

```
693 packets input, 80971 bytes, 0 no buffer
Received 119 broadcasts (0 multicasts)
0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 watchdog, 119 multicast, 0 pause input
0 input packets with dribble condition detected
737 packets output, 86144 bytes, 0 underruns
0 output errors, 0 collisions, 3 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier, 0 PAUSE output
0 output buffer failures, 0 output buffers swapped out
FastEthernet0/24 is up, line protocol is up (connected)
Hardware is Fast Ethernet, address is 000b.fd20.ba00 (bia
000b.fd20.ba00)
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Full-duplex, 100Mb/s, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:43, output 00:00:09, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
693 packets input, 80692 bytes, 0 no buffer
Received 119 broadcasts (0 multicasts)
0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 watchdog, 119 multicast, 0 pause input
0 input packets with dribble condition detected
742 packets output, 86520 bytes, 0 underruns
0 output errors, 0 collisions, 3 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier, 0 PAUSE output
0 output buffer failures, 0 output buffers swapped out
GigabitEthernet0/1 is administratively down, line protocol is down
(disabled)
Hardware is Gigabit Ethernet, address is 000b.fd20.ba19 (bia
000b.fd20.ba19)
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive not set
Auto-duplex, Auto-speed, link type is auto, media type is unknown
input flow-control is off, output flow-control is off
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
```

```
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 0 multicast, 0 pause input
  0 input packets with dribble condition detected
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
GigabitEthernet0/2 is administratively down, line protocol is down
(disabled)
  Hardware is Gigabit Ethernet, address is 000b.fd20.bala (bia
000b.fd20.bala)
  MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not set
  Auto-duplex, Auto-speed, link type is auto, media type is unknown
  input flow-control is off, output flow-control is off
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast, 0 pause input
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 PAUSE output
    0 output buffer failures, 0 output buffers swapped out
Port-channel12 is up, line protocol is up (connected)
  Hardware is EtherChannel, address is 000b.fd20.ba00 (bia
000b.fd20.ba00)
  Internet address is 10.2.4.14/30
  MTU 1500 bytes, BW 300000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  Members in this channel: Fa0/22 Fa0/23 Fa0/24
```



```
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:01, output 00:00:01, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  4194 packets input, 432992 bytes, 0 no buffer
  Received 2097 broadcasts (1326 IP multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 2089 multicast, 0 pause input
  0 input packets with dribble condition detected
  4280 packets output, 435462 bytes, 0 underruns
  0 output errors, 0 collisions, 4 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
Port-channel23 is up, line protocol is up (connected)
  Hardware is EtherChannel, address is 000b.fd20.ba13 (bia
000b.fd20.ba13)
  MTU 1500 bytes, BW 300000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  Members in this channel: Fa0/19 Fa0/20 Fa0/21
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:01, output 00:46:42, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 1000 bits/sec, 2 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  14042 packets input, 1184358 bytes, 0 no buffer
  Received 11887 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 11620 multicast, 0 pause input
  0 input packets with dribble condition detected
  8163 packets output, 735621 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
Port-channel24 is up, line protocol is up (connected)
  Hardware is EtherChannel, address is 000b.fd20.ba11 (bia
000b.fd20.ba11)
  MTU 1500 bytes, BW 300000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
```

```
Keepalive set (10 sec)
Full-duplex, 100Mb/s, media type is 10/100BaseTX
input flow-control is off, output flow-control is unsupported
Members in this channel: Fa0/16 Fa0/17 Fa0/18
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:01, output 00:00:00, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  8049 packets input, 702922 bytes, 0 no buffer
  Received 6084 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 6076 multicast, 0 pause input
  0 input packets with dribble condition detected
  8854 packets output, 760514 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier, 0 PAUSE output
  0 output buffer failures, 0 output buffers swapped out
Tunnel67 is up, line protocol is up
  Hardware is Tunnel
  MTU 1514 bytes, BW 100 Kbit, DLY 50000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation TUNNEL, loopback not set
  Keepalive not set
  Tunnel source 10.2.4.14, destination 10.2.4.13
  Tunnel protocol/transport GRE/IP, key disabled, sequencing disabled
  Tunnel TTL 255
  Checksumming of packets disabled
  Last input 00:00:04, output 00:00:21, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    243 packets input, 38548 bytes, 0 no buffer
    Received 0 broadcasts (0 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    239 packets output, 22912 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 output buffer failures, 0 output buffers swapped out
```

DSW2#

DSW2#show interfaces counters errors

Port	Align-Err	FCS-Err	Xmit-Err	Rcv-Err	UnderSize
Fa0/1	0	0	0	0	0
Fa0/2	0	0	0	0	0
Fa0/3	0	0	0	0	0
Fa0/4	0	0	0	0	0
Fa0/5	0	0	0	0	0
Fa0/6	0	0	0	0	0
Fa0/7	0	0	0	0	0
Fa0/8	0	0	0	0	0
Fa0/9	0	0	0	0	0
Fa0/10	0	0	0	0	0
Fa0/11	0	0	0	0	0
Fa0/12	0	0	0	0	0
Fa0/13	0	0	0	0	0
Fa0/14	0	0	0	0	0
Fa0/15	0	0	0	0	0
Fa0/16	0	0	0	0	0
Fa0/17	0	0	0	0	0
Fa0/18	0	0	0	0	0
Fa0/19	0	0	0	0	0
Fa0/20	0	0	0	0	0
Fa0/21	0	0	0	0	0

Fa0/22	0	0	0	0	0
Fa0/23	0	0	0	1	0
Fa0/24	0	0	0	0	0
Gi0/1	0	0	0	0	0
Gi0/2	0	0	0	0	0
Po12	0	0	0	0	0
Po23	0	0	0	0	0
Po24	0	0	0	0	0

Port	Single-Col	Multi-Col	Late-Col	Excess-Col	Carri-Sen	Runts
Giants						
Fa0/1	0	0	0	0	0	0
0						
Fa0/2	0	0	0	0	0	0
0						
Fa0/3	0	0	0	0	0	0
0						
Fa0/4	0	0	0	0	0	0
0						
Fa0/5	0	0	0	0	0	0
0						
Fa0/6	0	0	0	0	0	0
0						
Fa0/7	0	0	0	0	0	0
0						
Fa0/8	0	0	0	0	0	0
0						
Fa0/9	0	0	0	0	0	0
0						
Fa0/10	0	0	0	0	0	0
0						
Fa0/11	0	0	0	0	0	0
0						
Fa0/12	0	0	0	0	0	0
0						
Fa0/13	0	0	0	0	0	0
0						
Fa0/14	0	0	0	0	0	0
0						
Fa0/15	0	0	0	0	0	0
0						
Fa0/16	0	0	0	0	0	0
0						
Fa0/17	0	0	0	0	0	0
0						
Fa0/18	0	0	0	0	0	0
0						
Fa0/19	0	0	0	0	0	0
0						
Fa0/20	0	0	0	0	0	0
0						
Fa0/21	0	0	0	0	0	0
0						

Fa0/22	0	0	0	0	0	0
0						
Fa0/23	0	0	0	0	0	0
0						
Fa0/24	0	0	0	0	0	0
0						
Gi0/1	0	0	0	0	0	0
0						
Gi0/2	0	0	0	0	0	0
0						
Po12	0	0	0	0	0	0
0						
Po23	0	0	0	0	0	0
0						
Po24	0	0	0	0	0	0
0						
DSW2#						

DSW2#show cdp neighbors

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge  
 S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone

Device ID	Local Intrfce	Holdtme	Capability	Platform	Port
R4	Fas 0/1	123	R S I	1841	Fas
DSW1	Fas 0/24	174	R S I	WS-C3550-	Fas
DSW1	Fas 0/23	174	R S I	WS-C3550-	Fas
DSW1	Fas 0/22	174	R S I	WS-C3550-	Fas
ASW1	Fas 0/21	172	S I	WS-C2950-	Fas
ASW1	Fas 0/20	172	S I	WS-C2950-	Fas
ASW1	Fas 0/19	172	S I	WS-C2950-	Fas
ASW2	Fas 0/18	172	S I	WS-C2950-	Fas
ASW2	Fas 0/16	172	S I	WS-C2950-	Fas
ASW2	Fas 0/17	172	S I	WS-C2950-	Fas
DSW2#					

```
DSW2#show cdp neighbors detail
```

```
-----
```

```
Device ID: R4  
Entry address(es):  
  IP address: 10.1.4.9  
Platform: Cisco 1841, Capabilities: Router Switch IGMP  
Interface: FastEthernet0/1, Port ID (outgoing port): FastEthernet0/1  
Holdtime : 175 sec
```

```
Version :  
Cisco IOS Software, 1841 Software (C1841-ADVIPSERVICESK9-M), Version  
12.4(25b), RELEASE SOFTWARE (fc1)  
Technical Support: http://www.cisco.com/techsupport  
Copyright (c) 1986-2009 by Cisco Systems, Inc.  
Compiled Wed 12-Aug-09 10:49 by prod_rel_team
```

```
advertisement version: 2  
VTP Management Domain: ''  
Duplex: full  
Management address(es):
```

```
-----
```

```
Device ID: DSW1  
Entry address(es):  
  IP address: 10.2.4.13  
Platform: Cisco WS-C3550-24, Capabilities: Router Switch IGMP  
Interface: FastEthernet0/24, Port ID (outgoing port): FastEthernet0/24  
Holdtime : 165 sec
```

```
Version :  
Cisco IOS Software, C3550 Software (C3550-IPSERVICESK9-M), Version  
12.2(44)SE6, RELEASE SOFTWARE (fc1)  
Copyright (c) 1986-2009 by Cisco Systems, Inc.  
Compiled Mon 09-Mar-09 20:28 by gereddy
```

```
advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFF0102250C0000000000000000DBDE36E00FF0000  
VTP Management Domain: 'netlearning'  
Duplex: full  
Management address(es):  
  IP address: 10.2.4.13
```

```
-----
```

```
Device ID: DSW1  
Entry address(es):
```

IP address: 10.2.4.13  
Platform: Cisco WS-C3550-24, Capabilities: Router Switch IGMP  
Interface: FastEthernet0/23, Port ID (outgoing port): FastEthernet0/23  
Holdtime : 164 sec

Version :  
Cisco IOS Software, C3550 Software (C3550-IPSERVICESK9-M), Version  
12.2(44)SE6, RELEASE SOFTWARE (fc1)  
Copyright (c) 1986-2009 by Cisco Systems, Inc.  
Compiled Mon 09-Mar-09 20:28 by gereddy

advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF0102250C0000000000000000DBDE36E00FF0000  
VTP Management Domain: 'netlearning'  
Duplex: full  
Management address(es):  
IP address: 10.2.4.13

-----  
Device ID: DSW1  
Entry address(es):  
IP address: 10.2.4.13  
Platform: Cisco WS-C3550-24, Capabilities: Router Switch IGMP  
Interface: FastEthernet0/22, Port ID (outgoing port): FastEthernet0/22  
Holdtime : 164 sec

Version :  
Cisco IOS Software, C3550 Software (C3550-IPSERVICESK9-M), Version  
12.2(44)SE6, RELEASE SOFTWARE (fc1)  
Copyright (c) 1986-2009 by Cisco Systems, Inc.  
Compiled Mon 09-Mar-09 20:28 by gereddy

advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF0102250C0000000000000000DBDE36E00FF0000  
VTP Management Domain: 'netlearning'  
Duplex: full  
Management address(es):  
IP address: 10.2.4.13

-----  
Device ID: ASW1  
Entry address(es):  
IP address: 192.168.1.131  
Platform: cisco WS-C2950-24, Capabilities: Switch IGMP  
Interface: FastEthernet0/21, Port ID (outgoing port): FastEthernet0/18  
Holdtime : 162 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
SOFTWARE (fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.



Compiled Fri 16-Sep-05 10:46 by yenanh

advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF0102250200000000000000015FAAC46C0FF0000  
VTP Management Domain: 'netlearning'  
Native VLAN: 1  
Duplex: full  
Management address(es):  
IP address: 192.168.1.131

-----  
Device ID: ASW1  
Entry address(es):  
IP address: 192.168.1.131  
Platform: cisco WS-C2950-24, Capabilities: Switch IGMP  
Interface: FastEthernet0/20, Port ID (outgoing port): FastEthernet0/17  
Holdtime : 160 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
SOFTWARE (fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.  
Compiled Fri 16-Sep-05 10:46 by yenanh

advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF0102250200000000000000015FAAC46C0FF0000  
VTP Management Domain: 'netlearning'  
Native VLAN: 1  
Duplex: full  
Management address(es):  
IP address: 192.168.1.131

-----  
Device ID: ASW1  
Entry address(es):  
IP address: 192.168.1.131  
Platform: cisco WS-C2950-24, Capabilities: Switch IGMP  
Interface: FastEthernet0/19, Port ID (outgoing port): FastEthernet0/16  
Holdtime : 160 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
SOFTWARE (fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.  
Compiled Fri 16-Sep-05 10:46 by yenanh

advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF0102250200000000000000015FAAC46C0FF0000  
VTP Management Domain: 'netlearning'

Native VLAN: 1  
Duplex: full  
Management address(es):  
  IP address: 192.168.1.131

-----  
Device ID: ASW2  
Entry address(es):  
  IP address: 192.168.1.132  
Platform: cisco WS-C2950-24, Capabilities: Switch IGMP  
Interface: FastEthernet0/18, Port ID (outgoing port): FastEthernet0/21  
Holdtime : 159 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
SOFTWARE (fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.  
Compiled Fri 16-Sep-05 10:46 by yenanh

advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF010225010000000000000015FAB82880FF0000  
VTP Management Domain: 'netlearning'  
Native VLAN: 1  
Duplex: full  
Management address(es):  
  IP address: 192.168.1.132

-----  
Device ID: ASW2  
Entry address(es):  
  IP address: 192.168.1.132  
Platform: cisco WS-C2950-24, Capabilities: Switch IGMP  
Interface: FastEthernet0/16, Port ID (outgoing port): FastEthernet0/19  
Holdtime : 158 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
SOFTWARE (fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.  
Compiled Fri 16-Sep-05 10:46 by yenanh

advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF010225010000000000000015FAB82880FF0000  
VTP Management Domain: 'netlearning'  
Native VLAN: 1  
Duplex: full  
Management address(es):  
  IP address: 192.168.1.132

-----

Device ID: ASW2  
Entry address(es):  
  IP address: 192.168.1.132  
Platform: cisco WS-C2950-24, Capabilities: Switch IGMP  
Interface: FastEthernet0/17, Port ID (outgoing port): FastEthernet0/20  
Holdtime : 157 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
SOFTWARE (fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.  
Compiled Fri 16-Sep-05 10:46 by yenanh

advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF01022501000000000000000015FAB82880FF0000  
VTP Management Domain: 'netlearning'  
Native VLAN: 1  
Duplex: full  
Management address(es):  
  IP address: 192.168.1.132

DSW2#

```

DSW2#show arp
Protocol Address           Age (min)  Hardware Addr   Type   Interface
Internet 10.2.4.13             47         000d.bde3.6e00  ARPA   Port-
channel12
Internet 10.2.4.14             -          000b.fd20.ba00  ARPA   Port-
channel12
Internet 10.1.4.10             -          000b.fd20.ba00  ARPA
FastEthernet0/1
Internet 10.1.4.9              105        0019.5578.1cb3  ARPA
FastEthernet0/1
Internet 10.2.1.1              42         000d.bde3.6e00  ARPA   Vlan10
Internet 10.2.2.2              46         000d.bde3.6e00  ARPA   Vlan20
Internet 10.2.2.1              -          000b.fd20.ba00  ARPA   Vlan20
Internet 10.2.1.2              -          000b.fd20.ba00  ARPA   Vlan10
Internet 10.2.1.4              19         001c.238e.dbbc  ARPA   Vlan10
Internet 192.168.1.130        -          000b.fd20.ba00  ARPA   Vlan200
Internet 10.2.1.254           -          0000.0c07.ac0a  ARPA   Vlan10
DSW2#

```

```

DSW2#show ip arp
Protocol Address           Age (min)  Hardware Addr   Type   Interface
Internet 10.2.4.13             47         000d.bde3.6e00  ARPA   Port-
channel12
Internet 10.2.4.14             -          000b.fd20.ba00  ARPA   Port-
channel12
Internet 10.1.4.10             -          000b.fd20.ba00  ARPA
FastEthernet0/1
Internet 10.1.4.9              105        0019.5578.1cb3  ARPA
FastEthernet0/1
Internet 10.2.1.1              42         000d.bde3.6e00  ARPA   Vlan10
Internet 10.2.2.2              46         000d.bde3.6e00  ARPA   Vlan20
Internet 10.2.2.1              -          000b.fd20.ba00  ARPA   Vlan20
Internet 10.2.1.2              -          000b.fd20.ba00  ARPA   Vlan10
Internet 10.2.1.4              19         001c.238e.dbbc  ARPA   Vlan10
Internet 192.168.1.130        -          000b.fd20.ba00  ARPA   Vlan200
Internet 10.2.1.254           -          0000.0c07.ac0a  ARPA   Vlan10
DSW2#

```

```
DSW2#show ip interface
Vlan1 is administratively down, line protocol is down
  Internet protocol processing disabled
Vlan10 is up, line protocol is up
  Internet address is 10.2.1.2/24
  Broadcast address is 255.255.255.255
  Address determined by non-volatile memory
  MTU is 1500 bytes
  Helper address is 10.1.4.9
  Directed broadcast forwarding is disabled
  Multicast reserved groups joined: 224.0.0.1 224.0.0.2 224.0.0.22
  224.0.0.13
    224.0.0.10
  Outgoing access list is not set
  Inbound access list is not set
  Proxy ARP is enabled
  Local Proxy ARP is disabled
  Security level is default
  Split horizon is enabled
  ICMP redirects are always sent
  ICMP unreachable are always sent
  ICMP mask replies are never sent
  IP fast switching is enabled
  IP CEF switching is enabled
  IP CEF switching turbo vector
  IP Null turbo vector
  IP multicast fast switching is enabled
  IP multicast distributed fast switching is disabled
  IP route-cache flags are Fast, CEF
  Router Discovery is disabled
  IP output packet accounting is disabled
  IP access violation accounting is disabled
  TCP/IP header compression is disabled
  RTP/IP header compression is disabled
  Probe proxy name replies are disabled
  Policy routing is disabled
  Network address translation is disabled
  BGP Policy Mapping is disabled
  WCCP Redirect outbound is disabled
  WCCP Redirect inbound is disabled
  WCCP Redirect exclude is disabled
Vlan20 is up, line protocol is up
  Internet address is 10.2.2.1/24
  Broadcast address is 255.255.255.255
  Address determined by non-volatile memory
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is disabled
```

Multicast reserved groups joined: 224.0.0.1 224.0.0.2 224.0.0.22  
224.0.0.13

224.0.0.10

Outgoing access list is not set  
Inbound access list is not set  
Proxy ARP is enabled  
Local Proxy ARP is disabled  
Security level is default  
Split horizon is enabled  
ICMP redirects are always sent  
ICMP unreachable are always sent  
ICMP mask replies are never sent  
IP fast switching is enabled  
IP CEF switching is enabled  
IP CEF switching turbo vector  
IP Null turbo vector  
IP multicast fast switching is enabled  
IP multicast distributed fast switching is disabled  
IP route-cache flags are Fast, CEF  
Router Discovery is disabled  
IP output packet accounting is disabled  
IP access violation accounting is disabled  
TCP/IP header compression is disabled  
RTP/IP header compression is disabled  
Probe proxy name replies are disabled  
Policy routing is disabled  
Network address translation is disabled  
BGP Policy Mapping is disabled  
WCCP Redirect outbound is disabled  
WCCP Redirect inbound is disabled  
WCCP Redirect exclude is disabled  
Vlan200 is up, line protocol is up  
Internet address is 192.168.1.130/27  
Broadcast address is 255.255.255.255  
Address determined by non-volatile memory  
MTU is 1500 bytes  
Helper address is not set  
Directed broadcast forwarding is disabled  
Outgoing access list is not set  
Inbound access list is not set  
Proxy ARP is enabled  
Local Proxy ARP is disabled  
Security level is default  
Split horizon is enabled  
ICMP redirects are always sent  
ICMP unreachable are always sent  
ICMP mask replies are never sent  
IP fast switching is enabled  
IP CEF switching is enabled  
IP CEF switching turbo vector  
IP Null turbo vector  
IP multicast fast switching is enabled  
IP multicast distributed fast switching is disabled  
IP route-cache flags are Fast, CEF

Router Discovery is disabled  
IP output packet accounting is disabled  
IP access violation accounting is disabled  
TCP/IP header compression is disabled  
RTP/IP header compression is disabled  
Probe proxy name replies are disabled  
Policy routing is disabled  
Network address translation is disabled  
BGP Policy Mapping is disabled  
WCCP Redirect outbound is disabled  
WCCP Redirect inbound is disabled  
WCCP Redirect exclude is disabled  
FastEthernet0/1 is up, line protocol is up  
  Internet address is 10.1.4.10/30  
  Broadcast address is 255.255.255.255  
  Address determined by non-volatile memory  
  MTU is 1500 bytes  
  Helper address is not set  
  Directed broadcast forwarding is disabled  
  Multicast reserved groups joined: 224.0.0.1 224.0.0.2 224.0.0.22  
  224.0.0.13  
    224.0.0.10  
  Outgoing access list is not set  
  Inbound access list is not set  
  Proxy ARP is enabled  
  Local Proxy ARP is disabled  
  Security level is default  
  Split horizon is enabled  
  ICMP redirects are always sent  
  ICMP unreachable are always sent  
  ICMP mask replies are never sent  
  IP fast switching is enabled  
  IP CEF switching is enabled  
  IP CEF switching turbo vector  
  IP Null turbo vector  
  IP multicast fast switching is enabled  
  IP multicast distributed fast switching is disabled  
  IP route-cache flags are Fast, CEF  
  Router Discovery is disabled  
  IP output packet accounting is disabled  
  IP access violation accounting is disabled  
  TCP/IP header compression is disabled  
  RTP/IP header compression is disabled  
  Probe proxy name replies are disabled  
  Policy routing is disabled  
  Network address translation is disabled  
  BGP Policy Mapping is disabled  
  WCCP Redirect outbound is disabled  
  WCCP Redirect inbound is disabled  
  WCCP Redirect exclude is disabled  
FastEthernet0/2 is administratively down, line protocol is down  
  Inbound access list is not set  
FastEthernet0/3 is down, line protocol is down  
  Inbound access list is not set



FastEthernet0/4 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/5 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/6 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/7 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/8 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/9 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/10 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/11 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/12 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/13 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/14 is administratively down, line protocol is down  
Inbound access list is not set  
FastEthernet0/15 is down, line protocol is down  
Inbound access list is not set  
FastEthernet0/16 is up, line protocol is up  
Inbound access list is not set  
FastEthernet0/17 is up, line protocol is up  
Inbound access list is not set  
FastEthernet0/18 is up, line protocol is up  
Inbound access list is not set  
FastEthernet0/19 is up, line protocol is up  
Inbound access list is not set  
FastEthernet0/20 is up, line protocol is up  
Inbound access list is not set  
FastEthernet0/21 is up, line protocol is up  
Inbound access list is not set  
FastEthernet0/22 is up, line protocol is up  
Internet protocol processing disabled  
FastEthernet0/23 is up, line protocol is up  
Internet protocol processing disabled  
FastEthernet0/24 is up, line protocol is up  
Internet protocol processing disabled  
GigabitEthernet0/1 is administratively down, line protocol is down  
Inbound access list is not set  
GigabitEthernet0/2 is administratively down, line protocol is down  
Inbound access list is not set  
Port-channel12 is up, line protocol is up  
Internet address is 10.2.4.14/30  
Broadcast address is 255.255.255.255  
Address determined by non-volatile memory  
MTU is 1500 bytes  
Helper address is not set  
Directed broadcast forwarding is disabled

```
Multicast reserved groups joined: 224.0.0.1 224.0.0.2 224.0.0.22
224.0.0.13
    224.0.0.10
Outgoing access list is not set
Inbound access list is not set
Proxy ARP is enabled
Local Proxy ARP is disabled
Security level is default
Split horizon is enabled
ICMP redirects are always sent
ICMP unreachable are always sent
ICMP mask replies are never sent
IP fast switching is enabled
IP CEF switching is enabled
IP CEF switching turbo vector
IP Null turbo vector
IP multicast fast switching is enabled
IP multicast distributed fast switching is disabled
IP route-cache flags are Fast, CEF
Router Discovery is disabled
IP output packet accounting is disabled
IP access violation accounting is disabled
TCP/IP header compression is disabled
RTP/IP header compression is disabled
Probe proxy name replies are disabled
Policy routing is disabled
Network address translation is disabled
BGP Policy Mapping is disabled
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
Port-channel23 is up, line protocol is up
Port-channel24 is up, line protocol is up
Tunnel67 is up, line protocol is up
Internet protocol processing disabled
DSW2#
```

DSW2#show ip cef

Prefix	Next Hop	Interface
0.0.0.0/0	10.1.4.9	FastEthernet0/1
0.0.0.0/32	receive	
10.1.1.8/30	10.1.4.9	FastEthernet0/1
10.1.4.4/30	10.2.1.1	Vlan10
	10.2.2.2	Vlan20
10.1.4.8/30	attached	FastEthernet0/1
10.1.4.8/32	receive	FastEthernet0/1
10.1.4.9/32	attached	FastEthernet0/1
10.1.4.10/32	receive	FastEthernet0/1
10.1.4.11/32	receive	FastEthernet0/1
10.2.1.0/24	attached	Vlan10
10.2.1.0/32	receive	Vlan10
10.2.1.1/32	attached	Vlan10
10.2.1.2/32	receive	Vlan10
10.2.1.4/32	attached	Vlan10
10.2.1.254/32	receive	
10.2.1.255/32	receive	Vlan10
10.2.2.0/24	attached	Vlan20
10.2.2.0/32	receive	Vlan20
10.2.2.1/32	receive	Vlan20
10.2.2.2/32	attached	Vlan20
10.2.2.255/32	receive	Vlan20
10.2.4.12/30	attached	Port-channel12
10.2.4.12/32	receive	Port-channel12
10.2.4.13/32	attached	Port-channel12
10.2.4.14/32	receive	Port-channel12
10.2.4.15/32	receive	Port-channel12
192.168.1.128/27	attached	Vlan200
192.168.1.128/32	receive	Vlan200
192.168.1.130/32	receive	Vlan200
192.168.1.159/32	receive	Vlan200
224.0.0.0/4	multicast	
224.0.0.0/24	receive	
240.0.0.0/4	drop	

255.255.255.255/32 receive  
DSW2#

```
DSW2#show tcp statistics
Rcvd: 0 Total, 0 no port
      0 checksum error, 0 bad offset, 0 too short
      0 packets (0 bytes) in sequence
      0 dup packets (0 bytes)
      0 partially dup packets (0 bytes)
      0 out-of-order packets (0 bytes)
      0 packets (0 bytes) with data after window
      0 packets after close
      0 window probe packets, 0 window update packets
      0 dup ack packets, 0 ack packets with unsend data
      0 ack packets (0 bytes)
Sent: 0 Total, 0 urgent packets
      0 control packets (including 0 retransmitted)
      0 data packets (0 bytes)
      0 data packets (0 bytes) retransmitted
```

```
0 data packets (0 bytes) fastretransmitted
0 ack only packets (0 delayed)
0 window probe packets, 0 window update packets
0 Connections initiated, 0 connections accepted, 0 connections
established
0 Connections closed (including 0 dropped, 0 embryonic dropped)
0 Total rxmt timeout, 0 connections dropped in rxmt timeout
0 Keepalive timeout, 0 keepalive probe, 0 Connections dropped in
keepalive
DSW2#
```

```
DSW2#show ip protocols
*** IP Routing is NSF aware ***
```

```
Routing Protocol is "eigrp 10"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
```

Redistributing: eigrp 10

Address Family Protocol EIGRP-IPv4:(10)  
EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0  
EIGRP maximum hopcount 100  
EIGRP maximum metric variance 1  
EIGRP NSF-aware route hold timer is 240  
Topologies : 0(base)

Automatic network summarization is not in effect  
Maximum path: 4

Routing for Networks:

10.1.4.10/32  
10.2.1.2/32  
10.2.2.1/32  
10.2.4.14/32

Routing Information Sources:

Gateway	Distance	Last Update
10.2.4.13	90	00:47:28
10.1.4.9	90	00:47:28
10.2.1.1	90	00:47:28
10.2.2.2	90	00:47:28

Distance: internal 90 external 170

DSW2#

```
DSW2#show access-lists
Standard IP access list DENY_10
  10 deny 10.0.0.0, wildcard bits 0.255.255.255
  20 permit any
Standard IP access list DENY_ALL
  10 deny any
Standard IP access list PERMIT_10
  10 permit 10.0.0.0, wildcard bits 0.255.255.255
Standard IP access list PERMIT_ALL
  10 permit any
DSW2#
```

```

DSW2#show ip route eigrp
    10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D EX   10.1.1.8/30 [170/261120] via 10.1.4.9, 00:47:42, FastEthernet0/1
D      10.1.4.4/30 [90/28416] via 10.2.2.2, 00:47:42, Vlan20
                    [90/28416] via 10.2.1.1, 00:47:42, Vlan10
D*EX 0.0.0.0/0 [170/261120] via 10.1.4.9, 00:47:42, FastEthernet0/1
DSW2#

```

```

DSW2#show ip eigrp neighbors
EIGRP-IPv4:(10) neighbors for process 10
H   Address                Interface          Hold Uptime    SRTT    RTO    Q
Seq                                     (sec)          (ms)          Cnt
Num
3   10.2.1.1                 V110              13 00:47:52   816   4896   0
40
2   10.2.2.2                 V120              12 00:47:56    2    200   0
39

```



```

0 10.2.4.13          Po12          11 00:48:24    1 200 0
38
1 10.1.4.9          Fa0/1        12 01:46:15    1 200 0
155
DSW2#

```

```

DSW2#show ip eigrp interfaces
EIGRP-IPv4:(10) interfaces for process 10

```

Pending Interface Routes	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer
Fa0/1	1	0/0	1	0/1	50
V110	1	0/0	816	0/1	5108
V120	1	0/0	2	0/1	50

```
Po12          1          0/0          1          0/1          50
0
DSW2#
```

```
DSW2#show vlan
```

VLAN Name	Status	Ports
-----	-----	-----
1 default	active	Fa0/2, Fa0/3, Fa0/4,
Fa0/5		Fa0/6, Fa0/7, Fa0/8,
Fa0/9		Fa0/10, Fa0/11, Fa0/12,
Fa0/13		Fa0/14, Fa0/15, Gi0/1,
Gi0/2		
10 VLAN0010	active	
20 VLAN0020	active	

```

200 VLAN0200          active
1002 fddi-default    act/unsup
1003 trcrf-default   act/unsup
1004 fddinet-default act/unsup
1005 trbrf-default   act/unsup

```

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
1	enet	100001	1500	-	-	-	-	-	0	0
10	enet	100010	1500	-	-	-	-	-	0	0
20	enet	100020	1500	-	-	-	-	-	0	0
200	enet	100200	1500	-	-	-	-	-	0	0
1002	fddi	101002	1500	-	-	-	-	-	0	0
1003	trcrf	101003	4472	1005	3276	-	-	srb	0	0
1004	fdnet	101004	1500	-	-	-	-	ieee	0	0
1005	trbrf	101005	4472	-	-	15	-	ibm	0	0

VLAN	AREHops	STEHops	Backup	CRF
1003	7	7	off	

Remote SPAN VLANs

Primary	Secondary	Type	Ports

DSW2#

DSW2#show spanning-tree

VLAN0010

Spanning tree enabled protocol ieee

Root ID      Priority      4106  
              Address      000d.bde3.6e00  
              Cost            18  
              Port            66 (Port-channel23)  
              Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec

Bridge ID    Priority      8202      (priority 8192 sys-id-ext 10)  
              Address      000b.fd20.ba00  
              Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec  
              Aging Time    300

Interface	Role	Sts	Cost	Prio.Nbr	Type
Po23	Root	FWD	9	128.66	P2p

VLAN0020

Spanning tree enabled protocol ieee

Root ID      Priority      4116  
              Address      000b.fd20.ba00  
              This bridge is the root  
              Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec

Bridge ID    Priority      4116      (priority 4096 sys-id-ext 20)  
              Address      000b.fd20.ba00  
              Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec  
              Aging Time    300

Interface	Role	Sts	Cost	Prio.Nbr	Type
Po24	Desg	FWD	9	128.67	P2p

VLAN0200

Spanning tree enabled protocol ieee

Root ID      Priority      4296  
              Address      000d.bde3.6e00  
              Cost            18  
              Port            66 (Port-channel23)  
              Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec

Bridge ID    Priority      8392      (priority 8192 sys-id-ext 200)  
              Address      000b.fd20.ba00  
              Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec  
              Aging Time    300

Interface	Role	Sts	Cost	Prio.Nbr	Type
Po23	Root	FWD	9	128.66	P2p
Po24	Altn	BLK	9	128.67	P2p

DSW2#

DSW2#show interfaces status

Port	Name	Status	Vlan	Duplex	Speed	Type
Fa0/1		connected	routed	a-full	a-100	
10/100BaseTX						
Fa0/2		disabled	1	auto	auto	
10/100BaseTX						
Fa0/3		notconnect	1	auto	auto	
10/100BaseTX						
Fa0/4		disabled	1	auto	auto	
10/100BaseTX						
Fa0/5		disabled	1	auto	auto	
10/100BaseTX						
Fa0/6		disabled	1	auto	auto	
10/100BaseTX						
Fa0/7		disabled	1	auto	auto	
10/100BaseTX						
Fa0/8		disabled	1	auto	auto	
10/100BaseTX						
Fa0/9		disabled	1	auto	auto	
10/100BaseTX						
Fa0/10		disabled	1	auto	auto	
10/100BaseTX						
Fa0/11		disabled	1	auto	auto	
10/100BaseTX						
Fa0/12		disabled	1	auto	auto	
10/100BaseTX						
Fa0/13		disabled	1	auto	auto	
10/100BaseTX						
Fa0/14		disabled	1	auto	auto	
10/100BaseTX						
Fa0/15		notconnect	1	auto	auto	
10/100BaseTX						
Fa0/16		connected	trunk	a-full	a-100	
10/100BaseTX						
Fa0/17		connected	trunk	a-full	a-100	
10/100BaseTX						
Fa0/18		connected	trunk	a-full	a-100	
10/100BaseTX						
Fa0/19		connected	trunk	a-full	a-100	
10/100BaseTX						
Fa0/20		connected	trunk	a-full	a-100	
10/100BaseTX						
Fa0/21		connected	trunk	a-full	a-100	
10/100BaseTX						
Fa0/22		connected	routed	a-full	a-100	
10/100BaseTX						
Fa0/23		connected	routed	a-full	a-100	
10/100BaseTX						
Fa0/24		connected	routed	a-full	a-100	
10/100BaseTX						

Gi0/1	disabled	1	auto	auto
unknown				
Gi0/2	disabled	1	auto	auto
unknown				
Po12	connected	routed	a-full	a-100
Po23	connected	trunk	a-full	a-100
Po24	connected	trunk	a-full	a-100
DSW2#				

DSW2#show interfaces switchport

Name: Fa0/2  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)

Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/3  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/4  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down



Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/5  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/6  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/7  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false

Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/8  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/9  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001

Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/10  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/11  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none

Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/12  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/13  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none

Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/14  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/15  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled

Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/16  
Switchport: Enabled  
Administrative Mode: trunk  
Operational Mode: trunk (member of bundle Po24)  
Administrative Trunking Encapsulation: dot1q  
Operational Trunking Encapsulation: dot1q  
Negotiation of Trunking: On  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: 20,200  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/17  
Switchport: Enabled  
Administrative Mode: trunk  
Operational Mode: trunk (member of bundle Po24)

Administrative Trunking Encapsulation: dot1q  
Operational Trunking Encapsulation: dot1q  
Negotiation of Trunking: On  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: 20,200  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/18  
Switchport: Enabled  
Administrative Mode: trunk  
Operational Mode: trunk (member of bundle Po24)  
Administrative Trunking Encapsulation: dot1q  
Operational Trunking Encapsulation: dot1q  
Negotiation of Trunking: On  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: 20,200  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled



Appliance trust: none

Name: Fa0/19

Switchport: Enabled

Administrative Mode: trunk

Operational Mode: trunk (member of bundle Po23)

Administrative Trunking Encapsulation: dot1q

Operational Trunking Encapsulation: dot1q

Negotiation of Trunking: On

Access Mode VLAN: 1 (default)

Trunking Native Mode VLAN: 1 (default)

Administrative Native VLAN tagging: enabled

Voice VLAN: none

Administrative private-vlan host-association: none

Administrative private-vlan mapping: none

Administrative private-vlan trunk native VLAN: none

Administrative private-vlan trunk Native VLAN tagging: enabled

Administrative private-vlan trunk encapsulation: dot1q

Administrative private-vlan trunk normal VLANs: none

Administrative private-vlan trunk associations: none

Administrative private-vlan trunk mappings: none

Operational private-vlan: none

Trunking VLANs Enabled: 10,200

Pruning VLANs Enabled: 2-1001

Capture Mode Disabled

Capture VLANs Allowed: ALL

Protected: false

Unknown unicast blocked: disabled

Unknown multicast blocked: disabled

Appliance trust: none

Name: Fa0/20

Switchport: Enabled

Administrative Mode: trunk

Operational Mode: trunk (member of bundle Po23)

Administrative Trunking Encapsulation: dot1q

Operational Trunking Encapsulation: dot1q

Negotiation of Trunking: On

Access Mode VLAN: 1 (default)

Trunking Native Mode VLAN: 1 (default)

Administrative Native VLAN tagging: enabled

Voice VLAN: none

Administrative private-vlan host-association: none

Administrative private-vlan mapping: none

Administrative private-vlan trunk native VLAN: none

Administrative private-vlan trunk Native VLAN tagging: enabled

Administrative private-vlan trunk encapsulation: dot1q

Administrative private-vlan trunk normal VLANs: none

Administrative private-vlan trunk associations: none

Administrative private-vlan trunk mappings: none

Operational private-vlan: none

Trunking VLANs Enabled: 10,200

Pruning VLANs Enabled: 2-1001

Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Fa0/21  
Switchport: Enabled  
Administrative Mode: trunk  
Operational Mode: trunk (member of bundle Po23)  
Administrative Trunking Encapsulation: dot1q  
Operational Trunking Encapsulation: dot1q  
Negotiation of Trunking: On  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: 10,200  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Gi0/1  
Switchport: Enabled  
Administrative Mode: dynamic desirable  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: On  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none

Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Gi0/2  
Switchport: Enabled  
Administrative Mode: dynamic desirable  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: On  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: ALL  
Pruning VLANs Enabled: 2-1001  
Capture Mode Disabled  
Capture VLANs Allowed: ALL

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Po23  
Switchport: Enabled  
Administrative Mode: trunk  
Operational Mode: trunk  
Administrative Trunking Encapsulation: dot1q  
Operational Trunking Encapsulation: dot1q  
Negotiation of Trunking: On  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none

Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: 10,200  
Pruning VLANs Enabled: 2-1001

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none

Name: Po24  
Switchport: Enabled  
Administrative Mode: trunk  
Operational Mode: trunk  
Administrative Trunking Encapsulation: dot1q  
Operational Trunking Encapsulation: dot1q  
Negotiation of Trunking: On  
Access Mode VLAN: 1 (default)  
Trunking Native Mode VLAN: 1 (default)  
Administrative Native VLAN tagging: enabled  
Voice VLAN: none  
Administrative private-vlan host-association: none  
Administrative private-vlan mapping: none  
Administrative private-vlan trunk native VLAN: none  
Administrative private-vlan trunk Native VLAN tagging: enabled  
Administrative private-vlan trunk encapsulation: dot1q  
Administrative private-vlan trunk normal VLANs: none  
Administrative private-vlan trunk associations: none  
Administrative private-vlan trunk mappings: none  
Operational private-vlan: none  
Trunking VLANs Enabled: 20,200  
Pruning VLANs Enabled: 2-1001

Protected: false  
Unknown unicast blocked: disabled  
Unknown multicast blocked: disabled  
Appliance trust: none  
DSW2#

```
DSW2#show interfaces trunk
```

Port	Mode	Encapsulation	Status	Native vlan
Po23	on	802.1q	trunking	1
Po24	on	802.1q	trunking	1

Port	Vlans allowed on trunk
Po23	10,200
Po24	20,200

Port	Vlans allowed and active in management domain
Po23	10,200
Po24	20,200

Port	Vlans in spanning tree forwarding state and not pruned
Po23	10,200
Po24	20

```
DSW2#
```

```
DSW2#show vtp status
VTP Version                : running VTP2
Configuration Revision      : 0
Maximum VLANs supported locally : 1005
Number of existing VLANs    : 8
VTP Operating Mode         : Transparent
VTP Domain Name            : netlearning
VTP Pruning Mode           : Disabled
VTP V2 Mode                : Enabled
VTP Traps Generation       : Disabled
MD5 digest                  : 0x99 0xF7 0xCE 0x74 0x55 0xA6 0x6A 0xC7
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
DSW2#
```

```
DSW2#show vtp password
VTP Password: cisco1
DSW2#
```

DSW2#show etherchannel detail

Channel-group listing:

-----

Group: 12

-----

Group state = L3

Ports: 3 Maxports = 8

Port-channels: 1 Max Port-channels = 1

Protocol: -

Minimum Links: 0

Ports in the group:

-----

Port: Fa0/22

-----

Port state = Up Mstr In-Bndl

Channel group = 12 Mode = On

Gcchange = -

Port-channel = Po12 GC = -

Pseudo port-channel =

Po12

Port index = 0 Load = 0x00

Protocol = -

Age of the port in the current state: 0d:00h:54m:25s

Port: Fa0/23

-----

Port state = Up Mstr In-Bndl

Channel group = 12 Mode = On

Gcchange = -

Port-channel = Po12 GC = -

Pseudo port-channel =

Po12

Port index = 0 Load = 0x00

Protocol = -

Age of the port in the current state: 0d:00h:54m:25s

Port: Fa0/24

-----

Port state = Up Mstr In-Bndl

Channel group = 12 Mode = On

Gcchange = -

Port-channel = Po12 GC = -

Pseudo port-channel =

Po12

Port index = 0 Load = 0x00

Protocol = -

Age of the port in the current state: 0d:00h:54m:25s

Port-channels in the group:

-----



Port-channel: Po12

-----

Age of the Port-channel = 0d:01h:52m:18s
Logical slot/port = 1/0 Number of ports = 3
GC = 0x00000000 HotStandBy port = null
Passive port list = Fa0/22 Fa0/23 Fa0/24
Port state = Port-channel L3-Ag Ag-Inuse
Protocol = -
Port security = Disabled

Ports in the Port-channel:

Table with 5 columns: Index, Load, Port, EC state, No of bits. Rows show Fa0/22, Fa0/23, and Fa0/24 all with EC state 'On' and 0 bits.

Time since last port bundled: 0d:00h:54m:26s Fa0/24
Time since last port Un-bundled: 0d:00h:54m:41s Fa0/24

Group: 23

-----

Group state = L2
Ports: 3 Maxports = 16
Port-channels: 1 Max Port-channels = 1
Protocol: LACP
Minimum Links: 0

Ports in the group:

-----

Port: Fa0/19

-----

Port state = Up Mstr Assoc In-Bndl
Channel group = 23 Mode = Active Gcchange = -
Port-channel = Po23 GC = - Pseudo port-channel = Po23
Port index = 0 Load = 0x00 Protocol = LACP

Flags: S - Device is sending Slow LACPDUs F - Device is sending fast LACPDUs.
A - Device is in active mode. P - Device is in passive mode.

Local information:

Table with 7 columns: Port, Flags, State, LACP port, Admin, Oper, Port. Row shows Fa0/19 with SA flag, bndl state, LACP port 32768, Admin key 0x17, Oper key 0x17, and Port number 0x10.

Partner's information:

Port	Flags	Priority	Dev ID	Age	Admin key	Oper Key	Port Number
Fa0/19 0x3D	SA	32768	0015.faac.46c0	7s	0x0	0x2	0x10

Age of the port in the current state: 0d:01h:52m:07s

Port: Fa0/20

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 23 Mode = Active Gcchange = -  
Port-channel = Po23 GC = - Pseudo port-channel = Po23  
Port index = 0 Load = 0x00 Protocol = LACP

Flags: S - Device is sending Slow LACPDUs F - Device is sending fast LACPDUs.  
A - Device is in active mode. P - Device is in passive mode.

Local information:

Port	Flags	State	Priority	Admin Key	Oper Key	Port Number
Fa0/20 0x3D	SA	bndl	32768	0x17	0x17	0x11

Partner's information:

Port	Flags	Priority	Dev ID	Age	Admin key	Oper Key	Port Number
Fa0/20 0x3D	SA	32768	0015.faac.46c0	28s	0x0	0x2	0x11

Age of the port in the current state: 0d:01h:52m:07s

Port: Fa0/21

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 23 Mode = Active Gcchange = -  
Port-channel = Po23 GC = - Pseudo port-channel = Po23  
Port index = 0 Load = 0x00 Protocol = LACP

Flags: S - Device is sending Slow LACPDUs F - Device is sending fast LACPDUs.  
 A - Device is in active mode. P - Device is in passive mode.

Local information:

Port	Flags	State	LACP port Priority	Admin Key	Oper Key	Port Number
Fa0/21 0x3D	SA	bndl	32768	0x17	0x17	0x12

Partner's information:

Port	Flags	Priority	LACP port Dev ID	Admin Age	Oper key	Port Key	Port Number
Fa0/21 0x3D	SA	32768	0015.faac.46c0	16s	0x0	0x2	0x12

Age of the port in the current state: 0d:01h:52m:08s

Port-channels in the group:

Port-channel: Po23 (Primary Aggregator)

Age of the Port-channel = 0d:01h:52m:23s  
 Logical slot/port = 1/1 Number of ports = 3  
 HotStandBy port = null  
 Port state = Port-channel Ag-Inuse  
 Protocol = LACP  
 Port security = Disabled

Ports in the Port-channel:

Index	Load	Port	EC state	No of bits
0	00	Fa0/19	Active	0
0	00	Fa0/20	Active	0
0	00	Fa0/21	Active	0

Time since last port bundled: 0d:01h:52m:09s Fa0/21

Group: 24

Group state = L2  
 Ports: 3 Maxports = 8  
 Port-channels: 1 Max Port-channels = 1  
 Protocol: PAgP

Minimum Links: 0

Ports in the group:

-----

Port: Fa0/16

-----

Port state = Up Mstr In-Bndl  
Channel group = 24 Mode = Desirable-Sl Gcchange = 0  
Port-channel = Po24 GC = 0x00180001 Pseudo port-channel = Po24  
Port index = 0 Load = 0x00 Protocol = PAgP

Flags: S - Device is sending Slow hello. C - Device is in Consistent state.  
A - Device is in Auto mode. P - Device learns on physical port.  
d - PAgP is down.  
Timers: H - Hello timer is running. Q - Quit timer is running.  
S - Switching timer is running. I - Interface timer is running.

Local information:

Group	Flags	State	Timers	Hello Interval	Partner Count	PAgP Priority	Learning Method	
Fa0/16	SC	U6/S7	H	30s	1	128	Any	32

Partner's information:

Group	Partner Name	Partner Device ID	Partner Port	Partner Age	Partner Flags
Fa0/16	ASW2	0015.fab8.2880	Fa0/19	8s	SC

Age of the port in the current state: 0d:01h:52m:12s

Port: Fa0/17

-----

Port state = Up Mstr In-Bndl  
Channel group = 24 Mode = Desirable-Sl Gcchange = 0  
Port-channel = Po24 GC = 0x00180001 Pseudo port-channel = Po24  
Port index = 0 Load = 0x00 Protocol = PAgP

Flags: S - Device is sending Slow hello. C - Device is in Consistent state.  
A - Device is in Auto mode. P - Device learns on physical port.  
d - PAgP is down.  
Timers: H - Hello timer is running. Q - Quit timer is running.

S - Switching timer is running. I - Interface timer is running.

Local information:

Group	Port	Flags	State	Timers	Interval	Count	Priority	Method	
	Fa0/17	SC	U6/S7	H	30s	1	128	Any	32

Partner's information:

Group	Partner	Partner	Partner	Partner	
Port	Name	Device ID	Port	Age	Flags
Fa0/17	ASW2	0015.fab8.2880	Fa0/20	21s	SC
Cap.					
10001					

Age of the port in the current state: 0d:01h:52m:13s

Port: Fa0/18

-----

Port state = Up Mstr In-Bndl  
Channel group = 24 Mode = Desirable-S1 Gcchange = 0  
Port-channel = Po24 GC = 0x00180001 Pseudo port-channel = Po24  
Port index = 0 Load = 0x00 Protocol = PAgP

Flags: S - Device is sending Slow hello. C - Device is in Consistent state.  
A - Device is in Auto mode. P - Device learns on physical port.  
d - PAgP is down.  
Timers: H - Hello timer is running. Q - Quit timer is running.  
S - Switching timer is running. I - Interface timer is running.

Local information:

Group	Port	Flags	State	Timers	Interval	Count	Priority	Method	
	Fa0/18	SC	U6/S7	H	30s	1	128	Any	32

Partner's information:

Group	Partner	Partner	Partner	Partner	
Port	Name	Device ID	Port	Age	Flags
Fa0/18	ASW2	0015.fab8.2880	Fa0/21	10s	SC
Cap.					
10001					

Age of the port in the current state: 0d:01h:52m:14s

Port-channels in the group:

-----

Port-channel: Po24

-----

Age of the Port-channel = 0d:01h:52m:28s  
Logical slot/port = 1/2                    Number of ports = 3  
GC = 0x00180001                    HotStandBy port = null  
Port state = Port-channel Ag-Inuse  
Protocol = PAgP  
Port security = Disabled

Ports in the Port-channel:

Index	Load	Port	EC state	No of bits
0	00	Fa0/16	Desirable-S1	0
0	00	Fa0/17	Desirable-S1	0
0	00	Fa0/18	Desirable-S1	0

Time since last port bundled:    0d:01h:52m:16s    Fa0/18

DSW2#

```
DSW2#show standby
Vlan10 - Group 10
  State is Active
    11 state changes, last state change 00:56:50
  Virtual IP address is 10.2.1.254
  Active virtual MAC address is 0000.0c07.ac0a
    Local virtual MAC address is 0000.0c07.ac0a (v1 default)
  Hello time 3 sec, hold time 10 sec
    Next hello sent in 0.288 secs
  Preemption disabled
  Active router is local
  Standby router is 10.2.1.1, priority 110 (expires in 8.548 sec)
  Priority 20 (configured 20)
  IP redundancy name is "hsrp-Vl10-10" (default)
DSW2#
```

DSW2#show standby brief

P indicates configured to preempt.

Interface	Grp	Prio	P	State	Active	Standby	Virtual
Vl10	10	20		Active	local	10.2.1.1	

IP  
10.2.1.254  
DSW2#

DSW2#show power inline

Available:360(w) Used:0(w) Remaining:360(w)

Interface	Admin	Oper	Power	Device	Class	Max
-----------	-------	------	-------	--------	-------	-----



(Watts)

-----						
Fa0/1	auto	off	0.0	n/a	n/a	15.4
Fa0/2	auto	off	0.0	n/a	n/a	15.4
Fa0/3	auto	off	0.0	n/a	n/a	15.4
Fa0/4	auto	off	0.0	n/a	n/a	15.4
Fa0/5	auto	off	0.0	n/a	n/a	15.4
Fa0/6	auto	off	0.0	n/a	n/a	15.4
Fa0/7	auto	off	0.0	n/a	n/a	15.4
Fa0/8	auto	off	0.0	n/a	n/a	15.4
Fa0/9	auto	off	0.0	n/a	n/a	15.4
Fa0/10	auto	off	0.0	n/a	n/a	15.4
Fa0/11	auto	off	0.0	n/a	n/a	15.4
Fa0/12	auto	off	0.0	n/a	n/a	15.4
Fa0/13	auto	off	0.0	n/a	n/a	15.4
Fa0/14	auto	off	0.0	n/a	n/a	15.4
Fa0/15	auto	off	0.0	n/a	n/a	15.4
Fa0/16	auto	off	0.0	n/a	n/a	15.4
Fa0/17	auto	off	0.0	n/a	n/a	15.4
Fa0/18	auto	off	0.0	n/a	n/a	15.4
Fa0/19	auto	off	0.0	n/a	n/a	15.4
Fa0/20	auto	off	0.0	n/a	n/a	15.4
Fa0/21	auto	off	0.0	n/a	n/a	15.4
Fa0/22	auto	off	0.0	n/a	n/a	15.4
Fa0/23	auto	off	0.0	n/a	n/a	15.4
Fa0/24	auto	off	0.0	n/a	n/a	15.4
DSW2#						

```
DSW2#show spanning-tree inconsistentports
```

Name	Interface	Inconsistency
-----	-----	-----

```
Number of inconsistent ports (segments) in the system : 0
```

```
DSW2#
```

```
DSW2#show spanning-tree summary
```

```

Switch is in pvst mode
Root bridge for: VLAN0020
Extended system ID      is enabled
Portfast Default        is disabled
PortFast BPDU Guard Default is disabled
Portfast BPDU Filter Default is disabled
Loopguard Default      is disabled
EtherChannel misconfig guard is enabled
UplinkFast              is disabled
BackboneFast            is disabled
Configured Pathcost method used is short

```

Name	Blocking	Listening	Learning	Forwarding	STP Active
VLAN0010	0	0	0	1	1
VLAN0020	0	0	0	1	1
VLAN0200	1	0	0	1	2
3 vlans	1	0	0	3	4

DSW2#

```
DSW2#  
DSW2#show udld
```

```
Interface Fa0/1
```

```
---
```

```
Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown
```

```
Interface Fa0/2
```

```
---
```

```
Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown
```

```
Interface Fa0/3
```

```
---
```

```
Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown
```

```
Interface Fa0/4
```

```
---
```

```
Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown
```

```
Interface Fa0/5
```

```
---
```

```
Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown
```

```
Interface Fa0/6
```

```
---
```

```
Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown
```

```
Interface Fa0/7
```

```
---
```

```
Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown
```

```
Interface Fa0/8
```

```
---
```

```
Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown
```

```
Interface Fa0/9
```

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/10

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/11

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/12

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/13

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/14

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/15

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/16

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/17

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/18

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/19

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/20

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/21

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/22

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/23

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Fa0/24

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Gi0/1

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

Interface Gi0/2

---

Port enable administrative configuration setting: Disabled  
Port enable operational state: Disabled  
Current bidirectional state: Unknown

DSW2#

DSW2#show etherchannel summary

Flags: D - down P - bundled in port-channel  
I - stand-alone s - suspended  
H - Hot-standby (LACP only)  
R - Layer3 S - Layer2  
U - in use f - failed to allocate aggregator

M - not in use, minimum links not met  
u - unsuitable for bundling  
w - waiting to be aggregated  
d - default port

Number of channel-groups in use: 3

Number of aggregators: 3

Group	Port-channel	Protocol	Ports
-------	--------------	----------	-------

-----+-----+-----+-----  
-----

12	Po12 (RU)	-	Fa0/22 (P)	Fa0/23 (P)	Fa0/24 (P)
23	Po23 (SU)	LACP	Fa0/19 (P)	Fa0/20 (P)	Fa0/21 (P)
24	Po24 (SU)	PAGP	Fa0/16 (P)	Fa0/17 (P)	Fa0/18 (P)

DSW2#

```
DSW2#show etherchannel protocol
      Channel-group listing:
      -----
```

Group: 12

-----  
Protocol: - (Mode ON)

Group: 23

-----  
Protocol: LACP

Group: 24



-----  
Protocol: PAgP

DSW2#

DSW2#show etherchannel port  
Channel-group listing:  
-----

Group: 12  
-----

Ports in the group:  
-----

Port: Fa0/22  
-----

Port state = Up Mstr In-Bndl  
Channel group = 12 Mode = On Gcchange = -

Port-channel = Po12 GC = - Pseudo port-channel =  
Po12  
Port index = 0 Load = 0x00 Protocol = -

Age of the port in the current state: 0d:00h:55m:55s

Port: Fa0/23

-----

Port state = Up Mstr In-Bndl  
Channel group = 12 Mode = On Gcchange = -  
Port-channel = Po12 GC = - Pseudo port-channel =  
Po12  
Port index = 0 Load = 0x00 Protocol = -

Age of the port in the current state: 0d:00h:55m:55s

Port: Fa0/24

-----

Port state = Up Mstr In-Bndl  
Channel group = 12 Mode = On Gcchange = -  
Port-channel = Po12 GC = - Pseudo port-channel =  
Po12  
Port index = 0 Load = 0x00 Protocol = -

Age of the port in the current state: 0d:00h:55m:56s

Group: 23

-----

Ports in the group:

-----

Port: Fa0/19

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 23 Mode = Active Gcchange = -  
Port-channel = Po23 GC = - Pseudo port-channel =  
Po23  
Port index = 0 Load = 0x00 Protocol = LACP

Flags: S - Device is sending Slow LACPDU's F - Device is sending fast  
LACPDU's.

A - Device is in active mode. P - Device is in passive  
mode.

Local information:

Port	Flags	State	LACP port Priority	Admin Key	Oper Key	Port Number
Fa0/19 0x3D	SA	bndl	32768	0x17	0x17	0x10

Partner's information:

Port	Flags	Priority	Dev ID	Age	Admin key	Oper Key	Port Number
Fa0/19 0x3D	SA	32768	0015.faac.46c0	17s	0x0	0x2	0x10

Age of the port in the current state: 0d:01h:53m:36s

Port: Fa0/20

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 23 Mode = Active Gcchange = -  
Port-channel = Po23 GC = - Pseudo port-channel = Po23  
Port index = 0 Load = 0x00 Protocol = LACP

Flags: S - Device is sending Slow LACPDU's F - Device is sending fast LACPDU's.  
A - Device is in active mode. P - Device is in passive mode.

Local information:

Port	Flags	State	Priority	Admin Key	Oper Key	Port Number
Fa0/20 0x3D	SA	bndl	32768	0x17	0x17	0x11

Partner's information:

Port	Flags	Priority	Dev ID	Age	Admin key	Oper Key	Port Number
Fa0/20 0x3D	SA	32768	0015.faac.46c0	4s	0x0	0x2	0x11

Age of the port in the current state: 0d:01h:53m:36s

Port: Fa0/21

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 23 Mode = Active Gcchange = -  
Port-channel = Po23 GC = - Pseudo port-channel = Po23  
Port index = 0 Load = 0x00 Protocol = LACP

Flags: S - Device is sending Slow LACPDUs F - Device is sending fast LACPDUs.  
 A - Device is in active mode. P - Device is in passive mode.

Local information:

Port	Flags	State	LACP port Priority	Admin Key	Oper Key	Port Number
Fa0/21 0x3D	SA	bndl	32768	0x17	0x17	0x12

Partner's information:

Port	Flags	Priority	LACP port Dev ID	Admin Age	Oper key	Port Key	Port Number
Fa0/21 0x3D	SA	32768	0015.faac.46c0	20s	0x0	0x2	0x12

Age of the port in the current state: 0d:01h:53m:37s

Group: 24

-----

Ports in the group:

-----

Port: Fa0/16

-----

Port state = Up Mstr In-Bndl  
 Channel group = 24 Mode = Desirable-S1 Gcchange = 0  
 Port-channel = Po24 GC = 0x00180001 Pseudo port-channel = Po24  
 Port index = 0 Load = 0x00 Protocol = PAgP

Flags: S - Device is sending Slow hello. C - Device is in Consistent state.  
 A - Device is in Auto mode. P - Device learns on physical port.  
 d - PAgP is down.  
 Timers: H - Hello timer is running. Q - Quit timer is running.  
 S - Switching timer is running. I - Interface timer is running.

Local information:

Group	Flags	State	Timers	Hello Interval	Partner Count	PAgP Priority	Learning Method	
Fa0/16	SC	U6/S7	H	30s	1	128	Any	32

Partner's information:

Group	Partner	Partner	Partner	Partner
Port	Name	Device ID	Port	Age Flags
Fa0/16 10001	ASW2	0015.fab8.2880	Fa0/19	13s SC

Age of the port in the current state: 0d:01h:53m:40s

Port: Fa0/17

-----

Port state = Up Mstr In-Bndl  
Channel group = 24 Mode = Desirable-S1 Gcchange = 0  
Port-channel = Po24 GC = 0x00180001 Pseudo port-channel = Po24  
Port index = 0 Load = 0x00 Protocol = PAgP

Flags: S - Device is sending Slow hello. C - Device is in Consistent state.

A - Device is in Auto mode. P - Device learns on physical port.

d - PAgP is down.

Timers: H - Hello timer is running. Q - Quit timer is running.

S - Switching timer is running. I - Interface timer is running.

Local information:

Group	Flags	State	Timers	Hello Interval	Partner Count	PAgP Priority	Learning Method
Fa0/17	SC	U6/S7	H	30s	1	128	Any 32

Partner's information:

Group	Partner	Partner	Partner	Partner
Port	Name	Device ID	Port	Age Flags
Fa0/17 10001	ASW2	0015.fab8.2880	Fa0/20	24s SC

Age of the port in the current state: 0d:01h:53m:41s

Port: Fa0/18

-----

Port state = Up Mstr In-Bndl  
Channel group = 24 Mode = Desirable-S1 Gcchange = 0  
Port-channel = Po24 GC = 0x00180001 Pseudo port-channel = Po24

Port index = 0 Load = 0x00 Protocol = PAgP

Flags: S - Device is sending Slow hello. C - Device is in Consistent state.

A - Device is in Auto mode. P - Device learns on physical port.

d - PAgP is down.

Timers: H - Hello timer is running. Q - Quit timer is running.

S - Switching timer is running. I - Interface timer is running.

Local information:

Group				Hello	Partner	PAgP	Learning	
Port	Flags	State	Timers	Interval	Count	Priority	Method	
Ifindex								
Fa0/18	SC	U6/S7	H	30s	1	128	Any	32

Partner's information:

Group	Partner	Partner	Partner	Partner	
Port	Name	Device ID	Port	Age	Flags
Cap.					
Fa0/18	ASW2	0015.fab8.2880	Fa0/21	16s	SC
10001					

Age of the port in the current state: 0d:01h:53m:43s

DSW2#

```
DSW2#show etherchannel load-balance
EtherChannel Load-Balancing Configuration:
    src-mac
```

```
EtherChannel Load-Balancing Addresses Used Per-Protocol:
Non-IP: Source MAC address
    IPv4: Source MAC address
```

```
DSW2#
```

DSW2#show etherchannel port-channel  
Channel-group listing:

-----  
Group: 12

-----  
Port-channels in the group:  
-----

Port-channel: Po12  
-----

Age of the Port-channel = 0d:01h:54m:09s  
Logical slot/port = 1/0                    Number of ports = 3  
GC = 0x00000000                    HotStandBy port = null  
Passive port list = Fa0/22 Fa0/23 Fa0/24  
Port state = Port-channel L3-Ag Ag-Inuse  
Protocol = -  
Port security = Disabled

Ports in the Port-channel:

Index	Load	Port	EC state	No of bits
0	00	Fa0/22	On	0
0	00	Fa0/23	On	0
0	00	Fa0/24	On	0

Time since last port bundled: 0d:00h:56m:17s    Fa0/24  
Time since last port Un-bundled: 0d:00h:56m:32s    Fa0/24

-----  
Group: 23

-----  
Port-channels in the group:  
-----

Port-channel: Po23    (Primary Aggregator)  
-----

Age of the Port-channel = 0d:01h:54m:10s  
Logical slot/port = 1/1                    Number of ports = 3  
HotStandBy port = null  
Port state = Port-channel Ag-Inuse  
Protocol = LACP  
Port security = Disabled

Ports in the Port-channel:

Index	Load	Port	EC state	No of bits
-------	------	------	----------	------------



```

-----+-----+-----+-----+-----
 0      00      Fa0/19   Active           0
 0      00      Fa0/20   Active           0
 0      00      Fa0/21   Active           0

```

Time since last port bundled: 0d:01h:53m:56s Fa0/21

Group: 24

-----

Port-channels in the group:

-----

Port-channel: Po24

-----

Age of the Port-channel = 0d:01h:54m:11s  
Logical slot/port = 1/2 Number of ports = 3  
GC = 0x00180001 HotStandBy port = null  
Port state = Port-channel Ag-Inuse  
Protocol = PAgP  
Port security = Disabled

Ports in the Port-channel:

```

Index   Load   Port      EC state           No of bits
-----+-----+-----+-----+-----
 0      00      Fa0/16   Desirable-S1      0
 0      00      Fa0/17   Desirable-S1      0
 0      00      Fa0/18   Desirable-S1      0

```

Time since last port bundled: 0d:01h:53m:59s Fa0/18

```
DSW2#show pagp neighbor
```

```
Flags: S - Device is sending Slow hello. C - Device is in Consistent state.
```

```
A - Device is in Auto mode. P - Device learns on physical port.
```

```
Channel group 24 neighbors
```

Group	Partner	Partner	Partner	Partner	
Port	Name	Device ID	Port	Age	Flags
Fa0/16	ASW2	0015.fab8.2880	Fa0/19	13s	SC
10001					
Fa0/17	ASW2	0015.fab8.2880	Fa0/20	23s	SC
10001					
Fa0/18	ASW2	0015.fab8.2880	Fa0/21	14s	SC
10001					

```
DSW2#
```

DSW2#show lacp neighbor

Flags: S - Device is requesting Slow LACPDUs

F - Device is requesting Fast LACPDUs

A - Device is in Active mode P - Device is in Passive mode

Channel group 23 neighbors

Partner's information:

Port	Flags	LACP port Priority	Dev ID	Age	Admin key	Oper Key	Port Number
Fa0/19 0x3D	SA	32768	0015.faac.46c0	0s	0x0	0x2	0x10
Fa0/20 0x3D	SA	32768	0015.faac.46c0	16s	0x0	0x2	0x11
Fa0/21 0x3D	SA	32768	0015.faac.46c0	2s	0x0	0x2	0x12

DSW2#

DSW2#show port-security

Secure Port	MaxSecureAddr	CurrentAddr	SecurityViolation	Security
Action	(Count)	(Count)	(Count)	

-----

--

-----

--

Total Addresses in System (excluding one mac per port) : 0

Max Addresses limit in System (excluding one mac per port) : 5120

DSW2#

DSW2#show port-security address  
Secure Mac Address Table

```
-----  
Vlan      Mac Address      Type                Ports      Remaining Age  
          -----  
-----  
-----  
-----
```

```
Total Addresses in System (excluding one mac per port) : 0  
Max Addresses limit in System (excluding one mac per port) : 5120  
DSW2#
```