

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

Current configuration : 6019 bytes
!
! No configuration change since last restart
!
version 12.2
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname DSW2
!
no logging console
!
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
 metric weights 0 1 1 1 1 1
 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
```

```
!  
ntp clock-period 17179959  
ntp server 10.1.1.1  
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 = 224/228/236
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 = 224/226/228
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 = 192/194/196  
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 = 192/196/204  
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 = 128/130/132  
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 = 128/133/140  
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 = 64/64/68 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 = 64/65/68 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 = 1/2/4 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 = 1/1/4 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 = 1/2/4 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 = 1/3/4 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 = 1/2/4 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 = 4/4/4 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 = 1/3/4 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 80 percent (4/5), round-trip min/avg/max = 1/2/4 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 = 1/2/4 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 = 4/4/4 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 = 1/1/4 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 = 1/1/1 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 = 1/2/4 ms
```

```
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   unassigned     YES unset  down
down
FastEthernet0/4   unassigned     YES unset  administratively down
down
FastEthernet0/5   unassigned     YES unset  administratively down
down
FastEthernet0/6   unassigned     YES unset  administratively down
down
FastEthernet0/7   unassigned     YES unset  administratively down
down
FastEthernet0/8   unassigned     YES unset  administratively down
down
FastEthernet0/9   unassigned     YES unset  administratively down
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 up	unassigned	YES NVRAM	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 [170/1023] via 10.1.4.9, 00:44:35, 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 [90/111] via 10.2.2.2, 00:44:35, Vlan20  
        [90/111] via 10.2.1.1, 00:44:35, 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 [170/1023] via 10.1.4.9, 00:44:36, FastEthernet0/1
DSW2#
```

```
DSW2#show processes cpu
CPU utilization for five seconds: 1%/0%; one minute: 0%; five minutes: 0%
  PID Runtime(ms)   Invoked    uSecs   5Sec   1Min   5Min  TTY Process
    1         4         8         500  0.00%  0.00%  0.00%  0 Chunk
Manager
    2         0        547         0  0.00%  0.00%  0.00%  0 Load Meter
    3         4        25        160  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 00:00:00, 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: 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
  1936 packets input, 155531 bytes, 0 no buffer
  Received 0 broadcasts (591 IP multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  1720 packets output, 117941 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 00:00:01, 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
    703 packets input, 56064 bytes, 0 no buffer
    Received 0 broadcasts (590 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    756 packets output, 56439 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 never, output 00:45:11, 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
  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
  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 00:00:01, 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
  1351 packets input, 116790 bytes, 0 no buffer
  Received 793 broadcasts (598 IP multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 790 multicast, 0 pause input
  0 input packets with dribble condition detected
  1318 packets output, 127760 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 00:00:10, 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
  2651 packets input, 215161 bytes, 0 no buffer
  Received 2354 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 2352 multicast, 0 pause input
  0 input packets with dribble condition detected
  1291 packets output, 116321 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 00:00:11, output 00:00:05, 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 1000 bits/sec, 1 packets/sec
  528 packets input, 53695 bytes, 0 no buffer
  Received 251 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 251 multicast, 0 pause input
  0 input packets with dribble condition detected
  1923 packets output, 153712 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 00:00:12, output 00:00:05, 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
  527 packets input, 53605 bytes, 0 no buffer
  Received 250 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 250 multicast, 0 pause input
  0 input packets with dribble condition detected
  529 packets output, 53344 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 00:00:00, 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
  5520 packets input, 444731 bytes, 0 no buffer
  Received 5211 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 5024 multicast, 0 pause input
  0 input packets with dribble condition detected
  2273 packets output, 191201 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 00:00:15, 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
    534 packets input, 58321 bytes, 0 no buffer
    Received 251 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 251 multicast, 0 pause input
    0 input packets with dribble condition detected
    633 packets output, 65646 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 00:00:15, 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
  531 packets input, 57907 bytes, 0 no buffer
  Received 252 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 252 multicast, 0 pause input
  0 input packets with dribble condition detected
  533 packets output, 57722 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 00:00:23, 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
    1207 packets input, 116522 bytes, 0 no buffer
    Received 801 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 799 multicast, 0 pause input
    0 input packets with dribble condition detected
    1220 packets output, 110767 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 00:00:25, 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
  327 packets input, 36106 bytes, 0 no buffer
  Received 48 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 48 multicast, 0 pause input
  0 input packets with dribble condition detected
  329 packets output, 37856 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 00:00:26, 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
    326 packets input, 36032 bytes, 0 no buffer
    Received 48 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 48 multicast, 0 pause input
    0 input packets with dribble condition detected
    329 packets output, 37856 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 00:00:04, 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
  1865 packets input, 189124 bytes, 0 no buffer
  Received 898 broadcasts (611 IP multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 896 multicast, 0 pause input
  0 input packets with dribble condition detected
  1881 packets output, 186699 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 00:00:00, output 00:46:11, 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
  6585 packets input, 560587 bytes, 0 no buffer
  Received 5713 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 5523 multicast, 0 pause input
  0 input packets with dribble condition detected
  3417 packets output, 312113 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.ba12 (bia
000b.fd20.ba12)
  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 00:00:00, 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
    3713 packets input, 323103 bytes, 0 no buffer
    Received 2856 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 2854 multicast, 0 pause input
    0 input packets with dribble condition detected
    3745 packets output, 323539 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 00:00:09, output 00:00:24, 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
    109 packets input, 18492 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
    108 packets output, 10336 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	0	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	133	R S I	1841	Fas
DSW1	Fas 0/24	131	R S I	WS-C3550-	Fas
DSW1	Fas 0/23	131	R S I	WS-C3550-	Fas
DSW1	Fas 0/22	131	R S I	WS-C3550-	Fas
ASW1	Fas 0/21	119	S I	WS-C2950-	Fas
ASW1	Fas 0/20	119	S I	WS-C2950-	Fas
ASW1	Fas 0/19	119	S I	WS-C2950-	Fas
ASW2	Fas 0/17	120	S I	WS-C2950-	Fas
ASW2	Fas 0/18	120	S I	WS-C2950-	Fas
ASW2	Fas 0/16	120	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 : 125 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 : 122 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: FastEthernet0/23, Port ID (outgoing port): FastEthernet0/23  
Holdtime : 121 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 : 120 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 : 109 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 : 108 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 : 107 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
SOFTWARE (fc1)  
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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: FastEthernet0/17, Port ID (outgoing port): FastEthernet0/20  
Holdtime : 166 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
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advertisement version: 2  
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,  
value=00000000FFFFFFFFF0102250100000000000000015FAB82880FF0000  
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: FastEthernet0/18, Port ID (outgoing port): FastEthernet0/21  
Holdtime : 166 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
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VTP Management Domain: 'netlearning'  
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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 : 165 sec

Version :  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4a, RELEASE  
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value=00000000FFFFFFFFF010225010000000000000015FAB82880FF0000  
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              47         0019.5578.1cb3  ARPA
FastEthernet0/1
Internet 10.2.2.2             46         000d.bde3.6e00  ARPA   Vlan20
Internet 10.2.1.1             46         000d.bde3.6e00  ARPA   Vlan10
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          1 001c.238e.dbbc  ARPA  Vlan10
Internet 192.168.1.130    - 000b.fd20.ba00  ARPA  Vlan200
Internet 10.2.1.254       2 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	47	0019.5578.1cb3	ARPA	
FastEthernet0/1					
Internet	10.2.2.2	46	000d.bde3.6e00	ARPA	Vlan20
Internet	10.2.1.1	46	000d.bde3.6e00	ARPA	Vlan10
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	1	001c.238e.dbbc	ARPA	Vlan10
Internet	192.168.1.130	-	000b.fd20.ba00	ARPA	Vlan200
Internet	10.2.1.254	2	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         attached                Vlan10
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=1, K3=1, K4=1, K5=1
  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	00:47:07
10.1.4.9	90	00:47:07
10.2.1.1	90	00:47:07
10.2.2.2	90	00:47:07

```
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 [170/1023] via 10.1.4.9, 00:47:22, FastEthernet0/1
D      10.1.4.4/30 [90/111] via 10.2.2.2, 00:47:22, Vlan20
          [90/111] via 10.2.1.1, 00:47:22, Vlan10
D*EX 0.0.0.0/0 [170/1023] via 10.1.4.9, 00:47:22, 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	10.2.2.2	Vl20	12	00:47:33	419	2514	0
49							
2	10.2.1.1	Vl10	13	00:47:34	1	200	0
52							
1	10.1.4.9	Fa0/1	10	00:48:05	1	200	0
28							
0	10.2.4.13	Po12	14	00:48:13	1	200	0
50							

```
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
0					
Vl10	1	0/0	1	0/1	50
0					
Vl20	1	0/0	419	0/1	2096
0					
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#



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
-----------	------	-----	------	----------	------



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:49m:45s

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:49m:45s

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:49m:45s

Port-channels in the group:

-----

Port-channel: Po12

-----

Age of the Port-channel = 0d:00h:49m:53s  
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:49m:46s Fa0/24  
Time since last port Un-bundled: 0d:00h:49m:47s 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:

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

Age of the port in the current state: 0d:00h:49m:42s

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

Partner's information:

Port	Flags	Priority	LACP port	Admin	Oper	Port	
Port	Flags	Priority	Dev ID	Age	key	Key	Number
Fa0/20	SA	32768	0015.faac.46c0	15s	0x0	0x2	0x11
0x3D							

Age of the port in the current state: 0d:00h:49m:42s

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	Admin	Oper	Port
Port	Flags	State	Priority	Key	Key	Number



Fa0/21 SA bndl 32768 0x17 0x17 0x12  
0x3D

Partner's information:

Port	LACP port	Admin	Oper	Port			
Port	Flags	Priority	Dev ID	Age	key	Key	Number
State							
Fa0/21	SA	32768	0015.faac.46c0	7s	0x0	0x2	0x12
0x3D							

Age of the port in the current state: 0d:00h:49m:42s

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

Port-channel: Po23 (Primary Aggregator)

-----

Age of the Port-channel = 0d:00h:49m:58s  
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:00h:49m:44s 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-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	Hello Interval	Partner Count	PAgP Priority	Learning Method
	Fa0/16	SC	U6/S7	H	30s	1	128	Any 32

Partner's information:

Group	Partner Port	Partner Name	Partner Device ID	Partner Port	Partner Age	Partner Flags
	Fa0/16	ASW2	0015.fab8.2880	Fa0/19	11s	SC

Age of the port in the current state: 0d:00h:49m:47s

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	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	26s SC

Age of the port in the current state: 0d:00h:49m:48s

Port: Fa0/18

-----

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
Fa0/18	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 10001	ASW2	0015.fab8.2880	Fa0/21	14s SC

Age of the port in the current state: 0d:00h:49m:49s

Port-channels in the group:

-----

Port-channel: Po24

-----

Age of the Port-channel = 0d:00h:50m:03s

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:00h:49m:51s    Fa0/17

DSW2#

```
DSW2#show standby
Vlan10 - Group 10
  State is Standby
    1 state change, last state change 00:48:57
  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 2.076 secs
  Preemption disabled
  Active router is 10.2.1.1, priority 110 (expires in 9.584 sec)
  Standby router is local
  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		Standby	10.2.1.1	local	

IP  
10.2.1.254  
DSW2#

```
DSW2#show power inline
Available:360(w)  Used:0(w)  Remaining:360(w)
```

Interface	Admin	Oper	Power (Watts)	Device	Class	Max
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#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
Port-channel    = Po12         GC   =  -
Po12
Port index      = 0           Load = 0x00
Gcchange        =  -
Pseudo port-channel =
Protocol        =  -
```



Age of the port in the current state: 0d:00h:51m:04s

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:51m:04s

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:51m:04s

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 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
Fa0/19	SA	bndl	32768	0x17	0x17	0x10
0x3D						

Partner's information:

Port	Flags	LACP port	Priority	Dev ID	Age	Admin key	Oper Key	Port Number
Fa0/19	SA		32768	0015.faac.46c0	16s	0x0	0x2	0x100x3D

Age of the port in the current state: 0d:00h:51m:00s

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	LACP port	Priority	Admin Key	Oper Key	Port Number
Fa0/20	SA	bndl		32768	0x17	0x17	0x110x3D

Partner's information:

Port	Flags	LACP port	Priority	Dev ID	Age	Admin key	Oper Key	Port Number
Fa0/20	SA		32768	0015.faac.46c0	6s	0x0	0x2	0x110x3D

Age of the port in the current state: 0d:00h:50m:59s

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	State	LACP port Priority	Dev ID	Admin Age	Oper key	Port Key	Port Number
Fa0/21 0x3D	SA		32768	0015.faac.46c0	1s	0x0	0x2	0x12

Age of the port in the current state: 0d:00h:51m:00s

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
Cap.				Flags
Fa0/16	ASW2	0015.fab8.2880	Fa0/19	2s SC
10001				

Age of the port in the current state: 0d:00h:51m:04s

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
Cap.				Flags
Fa0/17	ASW2	0015.fab8.2880	Fa0/20	21s SC
10001				

Age of the port in the current state: 0d:00h:51m:05s

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	Hello Interval	Partner Count	PAgP Priority	Learning Method	
	Fa0/18	SC	U6/S7	H	30s	1	128	Any	32

Partner's information:

Group	Partner Name	Partner Device ID	Partner Port	Partner Age	Partner Flags
	Fa0/18 Cap. 10001	ASW2	0015.fab8.2880	Fa0/21	12s SC

Age of the port in the current state: 0d:00h:51m:07s

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:00h:51m:31s
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:51m:24s   Fa0/24
Time since last port Un-bundled: 0d:00h:51m:25s   Fa0/24
```

```
Group: 23
-----
```

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

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

-----

Age of the Port-channel = 0d:00h:51m:32s  
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:00h:51m:18s      Fa0/21

Group: 24

-----

Port-channels in the group:

-----

Port-channel: Po24

-----

Age of the Port-channel = 0d:00h:51m:33s  
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:00h:51m:21s      Fa0/17

DSW2#



```
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	25s	SC
10001					
Fa0/17	ASW2	0015.fab8.2880	Fa0/20	15s	SC
10001					
Fa0/18	ASW2	0015.fab8.2880	Fa0/21	4s	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	LACP port	Admin	Oper	Port			
Port	Flags	Priority	Dev ID	Age	key	Key	Number
State							

```
Fa0/19 SA 32768 0015.faac.46c0 25s 0x0 0x2 0x10
0x3D
Fa0/20 SA 32768 0015.faac.46c0 12s 0x0 0x2 0x11
0x3D
Fa0/21 SA 32768 0015.faac.46c0 4s 0x0 0x2 0x12
0x3D
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
```

