

```
DSW1#
DSW1#show running-config
Building configuration...

Current configuration : 6819 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 DSW1
!
no logging console
enable secret 5 $1$rODO$qAtdAg3h15SehH6GUuZwF/
!
no aaa new-model
ipv6 unicast-routing
ip subnet-zero
ip routing
!
ip multicast-routing
!
!
crypto pki trustpoint TP-self-signed-3185798656
  enrollment selfsigned
  subject-name cn=IOS-Self-Signed-Certificate-3185798656
  revocation-check none
  rsakeypair TP-self-signed-3185798656
!
!
crypto pki certificate chain TP-self-signed-3185798656
  certificate self-signed 01
    3082023D 308201A6 A0030201 02020101 300D0609 2A864886 F70D0101 04050030
    31312F30 2D060355 04031326 494F532D 53656C66 2D536967 6E65642D 43657274
    69666963 6174652D 33313835 37393836 3536301E 170D3933 30333031 30303031
    30305A17 0D323030 31303130 30303030 305A3031 312F302D 06035504 03132649
    4F532D53 656C662D 5369676E 65642D43 65727469 66696361 74652D33 31383537
    39383635 3630819F 300D0609 2A864886 F70D0101 01050003 818D0030 81890281
    8100B5A7 E06E306F 8CE03E7C 7F0A5ED4 F3E83B4D 84C44C79 53FFBF4B AD0AA040
    6F1B5F48 450A6605 064E98C8 F383BF35 7B1E930A 50CE8941 983A7541 00257105
    B72F88B5 9EFA7F55 1555F03C BB445809 46675034 6907395C 62E3997D C6AD08DE
    D5DA2E7A F8F1BCBF F5279179 178DDC57 0F0FC565 3D690CC3 CC342B98 192CDE4C
    FE5B0203 010001A3 65306330 0F060355 1D130101 FF040530 030101FF 30100603
    551D1104 09300782 05445357 312E301F 0603551D 23041830 168014F8 76AF7B7F
    ED73BF2B 4B98E0FA 521E848A 8A439230 1D060355 1D0E0416 0414F876 AF7B7FED
    73BF2B4B 98E0FA52 1E848A8A 4392300D 06092A86 4886F70D 01010405 00038181
    008E47B1 A4F77ADB 27CF55C5 17BB031C 15FE5D6F 1FCD9212 D925F95C 90244899
    1F97EAD1 89880DA0 BD0CCAC2 5DDAC877 BC6A5756 4B6B7389 6F74FF8C 97F41CCB
    4EF0975B CA5E1343 C8682DA1 D2D3EF12 7A9CF7AB C9C4F367 831798CC 4D182B50
```

```
4EF0D03C BBC28793 6A47C9D5 8E5960AD 8D4943CB 5D1A4B18 870DDEB6 E0DA2B3A
CB
quit
!
!
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
spanning-tree vlan 10,200 priority 4096
spanning-tree vlan 20 priority 8192
!
vlan internal allocation policy ascending
!
!
!
!
!
!
interface Tunnel46
no ip address
ipv6 address 2026::2:2/122
ipv6 enable
ipv6 rip RIPNG enable
tunnel source 10.1.4.6
tunnel destination 10.1.4.5
!
interface Tunnel67
no ip address
ipv6 address 2026::3:1/122
ipv6 enable
ipv6 rip RIPNG enable
tunnel source 10.2.4.13
tunnel destination 10.2.4.14
!
interface Port-channel12
no switchport
ip address 10.2.4.13 255.255.255.252
ip pim sparse-dense-mode
!
interface Port-channel13
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 10,200
switchport mode trunk
!
interface Port-channel14
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 20,200
switchport mode trunk
!
interface FastEthernet0/1
no switchport
ip address 10.1.4.6 255.255.255.252
ip pim sparse-dense-mode
spanning-tree portfast
```

```
!  
interface FastEthernet0/2  
  switchport access vlan 101  
  switchport mode access  
  switchport port-security maximum 2  
  switchport port-security  
  spanning-tree portfast  
!  
interface FastEthernet0/3  
  switchport access vlan 102  
  switchport mode access  
  spanning-tree portfast  
!  
interface FastEthernet0/4  
  switchport mode dynamic desirable  
!  
interface FastEthernet0/5  
  switchport access vlan 104  
  switchport mode access  
  spanning-tree portfast  
!  
interface FastEthernet0/6  
  switchport access vlan 105  
  switchport mode access  
  spanning-tree portfast  
!  
interface FastEthernet0/7  
  switchport access vlan 106  
  switchport mode access  
  spanning-tree portfast  
!  
interface FastEthernet0/8  
  switchport access vlan 109  
  switchport mode access  
  spanning-tree portfast  
!  
interface FastEthernet0/9  
  switchport access vlan 17  
  switchport mode access  
  spanning-tree portfast  
!  
interface FastEthernet0/10  
  switchport mode access  
  spanning-tree portfast  
!  
interface FastEthernet0/11  
  switchport mode access  
  spanning-tree portfast  
!  
interface FastEthernet0/12  
  switchport access vlan 123  
  switchport mode access  
  spanning-tree portfast  
!
```

```
interface FastEthernet0/13
  switchport mode access
  spanning-tree portfast
!
interface FastEthernet0/14
  switchport mode access
  spanning-tree portfast
!
interface FastEthernet0/15
  switchport mode access
!
interface FastEthernet0/16
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 20,200
  switchport mode trunk
  channel-group 14 mode auto
!
interface FastEthernet0/17
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 20,200
  switchport mode trunk
  channel-group 14 mode auto
!
interface FastEthernet0/18
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 20,200
  switchport mode trunk
  channel-group 14 mode auto
!
interface FastEthernet0/19
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 10,200
  switchport mode trunk
  channel-group 13 mode active
!
interface FastEthernet0/20
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 10,200
  switchport mode trunk
  channel-group 13 mode active
!
interface FastEthernet0/21
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 10,200
  switchport mode trunk
  channel-group 13 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 10.2.1.1 255.255.255.0
ip helper-address 10.1.4.5
ip pim sparse-dense-mode
standby 10 ip 10.2.1.254
standby 10 priority 110
standby 10 preempt
!
interface Vlan20
ip address 10.2.2.2 255.255.255.0
ip pim sparse-dense-mode
!
interface Vlan200
ip address 192.168.1.129 255.255.255.224
!
!
router eigrp 10
metric weights 0 1 1 1 1 1
no auto-summary
eigrp router-id 6.6.6.6
network 10.1.4.6 0.0.0.0
network 10.2.1.1 0.0.0.0
network 10.2.2.2 0.0.0.0
network 10.2.4.13 0.0.0.0
!
router ospf 1
log-adjacency-changes
network 10.3.3.2 0.0.0.0 area 0
network 10.17.17.1 0.0.0.0 area 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  
  password cisco  
  login  
line vty 5 15  
  password cisco  
  login  
!  
ntp clock-period 17179991  
ntp server 10.1.1.1  
end
```

DSW1#

```
DSW1#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 = 224/226/228  
ms
```

```
DSW1#
```

```
DSW1#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 = 224/225/228  
ms
```

```
DSW1#
```

```
DSW1#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 = 192/197/212  
ms  
DSW1#
```

```
DSW1#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 = 192/195/196  
ms
```

```
DSW1#
```

```
DSW1#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 = 128/131/132  
ms
```

```
DSW1#
```

```
DSW1#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 = 128/132/140  
ms
```

```
DSW1#
```

```
DSW1#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
```

```
DSW1#
```

```
DSW1#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  
DSW1#
```

```
DSW1#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  
DSW1#
```

```
DSW1#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 = 4/4/4 ms
```

```
DSW1#
```

```
DSW1#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
```

```
DSW1#
```

```
DSW1#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 = 1/1/4 ms
```

```
DSW1#
```

```
DSW1#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  
DSW1#
```

```
DSW1#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 = 1/1/4 ms  
DSW1#
```

```
DSW1#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 = 1/2/4 ms
```

```
DSW1#
```

```
DSW1#ping 10.2.1.254
```

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

```
Sending 5, 100-byte ICMP Echos to 10.2.1.254, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms
```

```
DSW1#
```

```
DSW1#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 = 4/4/4 ms
```

```
DSW1#
```

```
DSW1#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 = 1/1/4 ms  
DSW1#
```

```
DSW1#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 = 4/4/4 ms  
DSW1#
```

```
DSW1#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 = 4/4/4 ms
```

```
DSW1#
```

```
DSW1#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
```

```
DSW1#
```

```

DSW1#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol
Vlan1              unassigned      YES NVRAM  administratively down
down
Vlan10            10.2.1.1        YES NVRAM  up
up
Vlan20            10.2.2.2        YES NVRAM  up
up
Vlan200           192.168.1.129   YES NVRAM  up
up
FastEthernet0/1   10.1.4.6        YES NVRAM  up
up
FastEthernet0/2   unassigned      YES unset  down
down
FastEthernet0/3   unassigned      YES unset  down
down
FastEthernet0/4   unassigned      YES unset  down
down
FastEthernet0/5   unassigned      YES unset  down
down
FastEthernet0/6   unassigned      YES unset  down
down
FastEthernet0/7   unassigned      YES unset  down
down
FastEthernet0/8   unassigned      YES unset  down
down
FastEthernet0/9   unassigned      YES unset  down
down
FastEthernet0/10  unassigned      YES unset  down
down
FastEthernet0/11  unassigned      YES unset  down
down
FastEthernet0/12  unassigned      YES unset  down
down
FastEthernet0/13  unassigned      YES unset  down
down
FastEthernet0/14  unassigned      YES unset  down
down
FastEthernet0/15  unassigned      YES unset  down
down
FastEthernet0/16  unassigned      YES unset  up
up
FastEthernet0/17  unassigned      YES unset  up
up
FastEthernet0/18  unassigned      YES unset  up
up

```



FastEthernet0/19	unassigned	YES	unset	up
up				
FastEthernet0/20	unassigned	YES	unset	up
up				
FastEthernet0/21	unassigned	YES	unset	up
up				
FastEthernet0/22	unassigned	YES	NVRAM	up
up				
FastEthernet0/23	unassigned	YES	NVRAM	up
up				
FastEthernet0/24	unassigned	YES	NVRAM	up
up				
GigabitEthernet0/1	unassigned	YES	unset	administratively down
down				
GigabitEthernet0/2	unassigned	YES	unset	administratively down
down				
Port-channel12	10.2.4.13	YES	NVRAM	up
up				
Port-channel13	unassigned	YES	unset	up
up				
Port-channel14	unassigned	YES	unset	up
up				
Tunnel46	unassigned	YES	NVRAM	up
up				
Tunnel67	unassigned	YES	NVRAM	up
up				
DSW1#				

```
DSW1#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 10.1.4.5 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 10.1.4.5, 00:44:57, FastEthernet0/1  
D      10.1.4.8/30 [90/111] via 10.2.2.1, 00:48:13, Vlan20  
                [90/111] via 10.2.1.2, 00:48:13, Vlan10  
C      10.2.1.0/24 is directly connected, Vlan10  
C      10.2.2.0/24 is directly connected, Vlan20  
C      10.1.4.4/30 is directly connected, FastEthernet0/1  
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 10.1.4.5, 00:44:43, FastEthernet0/1  
DSW1#
```





50	4	5988	0	0.00%	0.00%	0.00%	0 L3TM
51	12732	8873	1434	0.47%	0.42%	0.40%	0 Vegas
Statistics							
52	0	41551	0	0.00%	0.00%	0.00%	0 HMATM
Learn proc							
53	0	2996	0	0.00%	0.00%	0.00%	0 HMATM Age
proces							
54	40	58	689	0.00%	0.00%	0.00%	0 VL2MM
55	0	3022	0	0.00%	0.00%	0.00%	0 L3MD
56	168	7495	22	0.00%	0.00%	0.00%	0 L3MD_STAT
57	0	1	0	0.00%	0.00%	0.00%	0 Vegas
Bridging							
58	608	37421	16	0.00%	0.00%	0.00%	0 VegasPM
59	24	1556	15	0.00%	0.00%	0.00%	0 VUR_MGR bg
proce							
60	0	2996	0	0.00%	0.00%	0.00%	0 PI MATM
Aging Pr							
61	0	1	0	0.00%	0.00%	0.00%	0 Switch
Backup In							
62	0	51	0	0.00%	0.00%	0.00%	0 MMN bkgrd
proces							
63	0	2	0	0.00%	0.00%	0.00%	0 Dot1x Mgr
Proces							
64	0	2	0	0.00%	0.00%	0.00%	0 802.1x
Accountin							
65	0	1	0	0.00%	0.00%	0.00%	0 MAB
Framework							
66	0	7	0	0.00%	0.00%	0.00%	0 802.1x
switch							
67	0	1	0	0.00%	0.00%	0.00%	0 802.1x
Webauth F							
68	104	1199	86	0.00%	0.00%	0.00%	0 DTP
Protocol							
69	0	1	0	0.00%	0.00%	0.00%	0 EAP
Framework							
70	0	52	0	0.00%	0.00%	0.00%	0 Port-
Security							
71	0	8	0	0.00%	0.00%	0.00%	0 SpanTree
Flush							
72	0	33	0	0.00%	0.00%	0.00%	0 Switch IP
Host T							
73	0	302	0	0.00%	0.00%	0.00%	0 Ethchnl
74	0	2998	0	0.00%	0.00%	0.00%	0 UDLD
75	0	1	0	0.00%	0.00%	0.00%	0 Vegas IPSPG
Proce							
76	12	24	500	0.00%	0.00%	0.00%	0 VMATM
Callback							
77	0	47	0	0.00%	0.00%	0.00%	0 HL3U PBR
bkgrd p							
78	0	25	0	0.00%	0.00%	0.00%	0 Vegas PBR
n-h re							
79	0	2	0	0.00%	0.00%	0.00%	0 AAA Server
80	0	1	0	0.00%	0.00%	0.00%	0 AAA ACCT
Proc							



114	0	1	0	0.00%	0.00%	0.00%	0 Vegas wccp
manag							
115	4	4	1000	0.00%	0.00%	0.00%	0 Crypto ACL
116	32	72	444	0.00%	0.00%	0.00%	0 IP RIB
Update							
117	12	16	750	0.00%	0.00%	0.00%	0 DHCPD
Receive							
118	0	1	0	0.00%	0.00%	0.00%	0 Transport
Port A							
119	0	26	0	0.00%	0.00%	0.00%	0 DHCPD
Timer							
120	0	2	0	0.00%	0.00%	0.00%	0 Crypto
Support							
121	0	2	0	0.00%	0.00%	0.00%	0 LOCAL AAA
122	0	2	0	0.00%	0.00%	0.00%	0 ENABLE AAA
123	0	2	0	0.00%	0.00%	0.00%	0 LINE AAA
125	0	2	0	0.00%	0.00%	0.00%	0 TPLUS
126	0	1	0	0.00%	0.00%	0.00%	0 CRYPTO QoS
proce							
127	0	1	0	0.00%	0.00%	0.00%	0 Crypto INT
128	0	4	0	0.00%	0.00%	0.00%	0 Crypto
IKMP							
129	100	153	653	0.00%	0.00%	0.00%	0 IPSEC key
engine							
130	0	1	0	0.00%	0.00%	0.00%	0 IPSEC
manual key							
131	0	1	0	0.00%	0.00%	0.00%	0 Crypto PAS
Proc							
132	0	12	0	0.00%	0.00%	0.00%	0 crypto
engine pr							
133	24	4	6000	0.00%	0.00%	0.00%	0 Crypto CA
134	0	1	0	0.00%	0.00%	0.00%	0 Crypto
PKI-CRL							
135	0	1	0	0.00%	0.00%	0.00%	0 Crypto SSL
136	0	1	0	0.00%	0.00%	0.00%	0 encrypt
proc							
137	4	3003	1	0.00%	0.00%	0.00%	0 Vegas
EnvMon Pro							
138	0	2	0	0.00%	0.00%	0.00%	0 VTPMIB
EDIT BUFF							
139	0	2	0	0.00%	0.00%	0.00%	0 DHCP
Security He							
140	20	7523	2	0.00%	0.00%	0.00%	0 PM
Callback							
141	40	25	1600	0.00%	0.00%	0.00%	0 VLAN
Manager							
142	0	835	0	0.00%	0.00%	0.00%	0 DHCPD
Database							
143	0	242	0	0.00%	0.00%	0.00%	0 dhcp
snooping sw							
144	0	1	0	0.00%	0.00%	0.00%	0 VFM Queue
Proces							
145	4	1	4000	0.00%	0.00%	0.00%	0 VFM/VQM
Merge Pr							





```
180          468          3179          147  0.00%  0.00%  0.00%  0 EIGRP-
IPv4:
181          12          2954           4  0.00%  0.00%  0.00%  0 OSPF-1
Router
182          200          5285           37  0.00%  0.00%  0.00%  0 EIGRP-
IPv4: Hell
DSW1#
```

```
DSW1#show interfaces
```

```
Vlan1 is administratively down, line protocol is down
  Hardware is EtherSVI, address is 000d.bde3.6e00 (bia 000d.bde3.6e00)
  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 000d.bde3.6e00 (bia 000d.bde3.6e00)
  Internet address is 10.2.1.1/24
  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 00:00:00, 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: 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
    2174 packets input, 170372 bytes, 0 no buffer
    Received 0 broadcasts (646 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    1940 packets output, 132815 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 000d.bde3.6e00 (bia 000d.bde3.6e00)
  Internet address is 10.2.2.2/24
  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 00:00:03, output 00:00:03, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 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
    811 packets input, 65247 bytes, 0 no buffer
    Received 0 broadcasts (649 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    796 packets output, 59908 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 000d.bde3.6e00 (bia 000d.bde3.6e00)
Internet address is 192.168.1.129/27
MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive not supported
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:48:50, output 00:49:40, 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
    1 packets input, 64 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 000d.bde3.6e00 (bia
000d.bde3.6e00)
Internet address is 10.1.4.6/30
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 00:00:00, 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 1000 bits/sec, 1 packets/sec
    3763 packets input, 450246 bytes, 0 no buffer
    Received 927 broadcasts (676 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 924 multicast, 0 pause input
    0 input packets with dribble condition detected
    6654 packets output, 688071 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 down, line protocol is down (notconnect)
```

```
Hardware is Fast Ethernet, address is 000d.bde3.6e02 (bia
000d.bde3.6e02)
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 000d.bde3.6e03 (bia
000d.bde3.6e03)
```

```
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 down, line protocol is down (notconnect)  
Hardware is Fast Ethernet, address is 000d.bde3.6e04 (bia 000d.bde3.6e04)  
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)  
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 00:50:18, 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  
12 packets output, 1821 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 down, line protocol is down (notconnect)  
Hardware is Fast Ethernet, address is 000d.bde3.6e05 (bia 000d.bde3.6e05)  
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)  
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 down, line protocol is down (notconnect)
  Hardware is Fast Ethernet, address is 000d.bde3.6e06 (bia
000d.bde3.6e06)
  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)
  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 down, line protocol is down (notconnect)
  Hardware is Fast Ethernet, address is 000d.bde3.6e07 (bia
000d.bde3.6e07)
  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 down, line protocol is down (notconnect)
  Hardware is Fast Ethernet, address is 000d.bde3.6e08 (bia
000d.bde3.6e08)
  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 down, line protocol is down (notconnect)
  Hardware is Fast Ethernet, address is 000d.bde3.6e09 (bia
000d.bde3.6e09)
  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 down, line protocol is down (notconnect)
Hardware is Fast Ethernet, address is 000d.bde3.6e0a (bia
000d.bde3.6e0a)
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 down, line protocol is down (notconnect)
Hardware is Fast Ethernet, address is 000d.bde3.6e0b (bia
000d.bde3.6e0b)
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 down, line protocol is down (notconnect)
Hardware is Fast Ethernet, address is 000d.bde3.6e0c (bia
000d.bde3.6e0c)
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 down, line protocol is down (notconnect)
Hardware is Fast Ethernet, address is 000d.bde3.6e0d (bia
000d.bde3.6e0d)
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 down, line protocol is down (notconnect)
Hardware is Fast Ethernet, address is 000d.bde3.6e0e (bia
000d.bde3.6e0e)
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 000d.bde3.6e0f (bia
000d.bde3.6e0f)
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 000d.bde3.6e10 (bia
000d.bde3.6e10)
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is 10/100BaseTX
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:04, output 00:00:07, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  577 packets input, 58872 bytes, 0 no buffer
  Received 273 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 273 multicast, 0 pause input
  0 input packets with dribble condition detected
  2931 packets output, 235608 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 000d.bde3.6e11 (bia
000d.bde3.6e11)
  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 00:00:02, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 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
  578 packets input, 58962 bytes, 0 no buffer
  Received 274 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 274 multicast, 0 pause input
  0 input packets with dribble condition detected
  575 packets output, 56808 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 000d.bde3.6e12 (bia
000d.bde3.6e12)
  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 00:00:03, 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 1000 bits/sec, 1 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    2966 packets input, 241539 bytes, 0 no buffer
    Received 2592 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 2592 multicast, 0 pause input
    0 input packets with dribble condition detected
    577 packets output, 56974 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 000d.bde3.6e13 (bia
000d.bde3.6e13)
  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 00:00:09, 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
  2873 packets input, 253331 bytes, 0 no buffer
  Received 2520 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 2404 multicast, 0 pause input
  0 input packets with dribble condition detected
  2644 packets output, 220187 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 000d.bde3.6e14 (bia
000d.bde3.6e14)
  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 00:00:02, 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
    3692 packets input, 321357 bytes, 0 no buffer
    Received 271 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 271 multicast, 0 pause input
    0 input packets with dribble condition detected
    593 packets output, 64972 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 000d.bde3.6e15 (bia
000d.bde3.6e15)
  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 00:00:06, 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
  575 packets input, 62986 bytes, 0 no buffer
  Received 271 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 271 multicast, 0 pause input
  0 input packets with dribble condition detected
  3628 packets output, 281204 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 000d.bde3.6e00 (bia
000d.bde3.6e00)
  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 00:00:05, output 00:00:03, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    3387 packets input, 412951 bytes, 0 no buffer
    Received 884 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 881 multicast, 0 pause input
    0 input packets with dribble condition detected
    3399 packets output, 418074 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 000d.bde3.6e00 (bia
000d.bde3.6e00)
  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 00:00:07, 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
  355 packets input, 40864 bytes, 0 no buffer
  Received 54 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 54 multicast, 0 pause input
  0 input packets with dribble condition detected
  364 packets output, 41578 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 000d.bde3.6e00 (bia
000d.bde3.6e00)
  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 00:00:08, output 00:00:06, 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
  355 packets input, 40864 bytes, 0 no buffer
  Received 54 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 54 multicast, 0 pause input
  0 input packets with dribble condition detected
  359 packets output, 40988 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 000d.bde3.6e19 (bia
000d.bde3.6e19)
  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 000d.bde3.6e1a (bia
000d.bde3.6e1a)
    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 000d.bde3.6e00 (bia
000d.bde3.6e00)
Internet address is 10.2.4.13/30
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 00:00:03, 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
  4099 packets input, 494835 bytes, 0 no buffer
  Received 994 broadcasts (670 IP multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 991 multicast, 0 pause input
  0 input packets with dribble condition detected
  4128 packets output, 501064 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-channel13 is up, line protocol is up (connected)
Hardware is EtherChannel, address is 000d.bde3.6e13 (bia
000d.bde3.6e13)
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 00:04:59, 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 1000 bits/sec, 2 packets/sec
5 minute output rate 1000 bits/sec, 2 packets/sec
  7155 packets input, 638592 bytes, 0 no buffer
  Received 3055 broadcasts (0 multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 watchdog, 2939 multicast, 0 pause input
  0 input packets with dribble condition detected
  6867 packets output, 565955 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-channel14 is up, line protocol is up (connected)
  Hardware is EtherChannel, address is 000d.bde3.6e12 (bia
000d.bde3.6e12)
  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 00:00:01, 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
    4125 packets input, 359617 bytes, 0 no buffer
  Received 3137 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 3136 multicast, 0 pause input
    0 input packets with dribble condition detected
  4091 packets output, 350028 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
Tunnel46 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 10.1.4.6, destination 10.1.4.5
  Tunnel protocol/transport GRE/IP, key disabled, sequencing disabled
  Tunnel TTL 255
  Checksumming of packets disabled
  Last input 00:00:25, output 00:00:22, 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
    2161 packets input, 267148 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
```

```
    2173 packets output, 268348 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    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 10.2.4.13, destination 10.2.4.14
  Tunnel protocol/transport GRE/IP, key disabled, sequencing disabled
  Tunnel TTL 255
  Checksumming of packets disabled
  Last input 00:00:15, output 00:00:23, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 10
  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
    2163 packets input, 265160 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
    2171 packets output, 270004 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 output buffer failures, 0 output buffers swapped out
DSW1#
```

DSW1#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
Pol2	0	0	0	0	0
Pol3	0	0	0	0	0
Pol4	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
Po13 0	0	0	0	0	0	0
Po14 0	0	0	0	0	0	0
DSW1#						

```
DSW1#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 0/0	Fas 0/1	160	R S I	1841	Fas
DSW2 0/24	Fas 0/24	142	R S I	WS-C3550-	Fas
DSW2 0/23	Fas 0/23	142	R S I	WS-C3550-	Fas
DSW2 0/22	Fas 0/22	142	R S I	WS-C3550-	Fas
ASW1 0/21	Fas 0/21	133	S I	WS-C2950-	Fas
ASW1 0/20	Fas 0/20	133	S I	WS-C2950-	Fas
ASW1 0/19	Fas 0/19	133	S I	WS-C2950-	Fas

ASW2	Fas 0/16	133	S I	WS-C2950- Fas
0/16				
ASW2	Fas 0/17	133	S I	WS-C2950- Fas
0/17				
ASW2	Fas 0/18	133	S I	WS-C2950- Fas
0/18				
DSW1#				

DSW1#show cdp neighbors detail

-----  
Device ID: R4  
Entry address(es):  
  IP address: 10.1.4.5  
Platform: Cisco 1841, Capabilities: Router Switch IGMP  
Interface: FastEthernet0/1, Port ID (outgoing port): FastEthernet0/0  
Holdtime : 151 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: DSW2  
Entry address(es):  
  IP address: 10.2.4.14  
Platform: Cisco WS-C3550-24-PWR, Capabilities: Router Switch IGMP  
Interface: FastEthernet0/24, Port ID (outgoing port): FastEthernet0/24  
Holdtime : 133 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=00000000FFFFFFFF0102250C0000000000000000BFD20BA00FF0000  
VTP Management Domain: 'netlearning'  
Duplex: full  
Management address(es):  
  IP address: 10.2.4.14

-----  
Device ID: DSW2  
Entry address(es):  
  IP address: 10.2.4.14  
Platform: Cisco WS-C3550-24-PWR, Capabilities: Router Switch IGMP  
Interface: FastEthernet0/23, Port ID (outgoing port): FastEthernet0/23  
Holdtime : 132 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=00000000FFFFFFFF0102250C0000000000000000BFD20BA00FF0000  
VTP Management Domain: 'netlearning'  
Duplex: full  
Management address(es):  
  IP address: 10.2.4.14



-----  
Device ID: DSW2  
Entry address(es):  
 IP address: 10.2.4.14  
Platform: Cisco WS-C3550-24-PWR, Capabilities: Router Switch IGMP  
Interface: FastEthernet0/22, Port ID (outgoing port): FastEthernet0/22  
Holdtime : 132 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=00000000FFFFFFFFF0102250C0000000000000000BFD20BA00FF0000  
VTP Management Domain: 'netlearning'  
Duplex: full  
Management address(es):  
 IP address: 10.2.4.14

-----  
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): FastEthernet0/21  
Holdtime : 122 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=00000000FFFFFFFFF010225010000000000000015FAAC46C0FF0000  
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): FastEthernet0/20  
Holdtime : 121 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=00000000FFFFFFFFF010225010000000000000015FAAC46C0FF0000  
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): FastEthernet0/19  
Holdtime : 120 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=00000000FFFFFFFFF010225010000000000000015FAAC46C0FF0000  
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: FastEthernet0/16, Port ID (outgoing port): FastEthernet0/16  
Holdtime : 119 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=00000000FFFFFFFFF0102250200000000000000015FAB82880FF0000  
VTP Management Domain: 'netlearning'  
Native VLAN: 1  
Duplex: full  
Management address(es):  
IP address: 192.168.1.132

-----  
Device ID: ASW2  
Entry address(es):  
IP address: 192.168.1.132  
Platform: cisco WS-C2950-24, Capabilities: Switch IGMP  
Interface: FastEthernet0/17, Port ID (outgoing port): FastEthernet0/17  
Holdtime : 119 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=00000000FFFFFFFFF0102250200000000000000015FAB82880FF0000  
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): FastEthernet0/18  
Holdtime : 118 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=00000000FFFFFFFFF0102250200000000000000015FAB82880FF0000  
VTP Management Domain: 'netlearning'

Native VLAN: 1  
Duplex: full  
Management address(es):  
  IP address: 192.168.1.132

DSW1#

```
DSW1#show arp
```

Protocol	Address	Age (min)	Hardware Addr	Type	Interface
Internet	10.2.4.13	-	000d.bde3.6e00	ARPA	Port-
channel12					
Internet	10.2.4.14	50	000b.fd20.ba00	ARPA	Port-
channel12					
Internet	10.2.2.2	-	000d.bde3.6e00	ARPA	Vlan20
Internet	10.2.1.1	-	000d.bde3.6e00	ARPA	Vlan10
Internet	10.1.4.6	-	000d.bde3.6e00	ARPA	
FastEthernet0/1					
Internet	10.1.4.5	51	0019.5578.1cb2	ARPA	
FastEthernet0/1					

```

Internet 10.2.1.2          39  000b.fd20.ba00  ARPA  Vlan10
Internet 10.2.2.1          50  000b.fd20.ba00  ARPA  Vlan20
Internet 10.2.1.4            0   001c.238e.dbbc  ARPA  Vlan10
Internet 192.168.1.129    -   000d.bde3.6e00  ARPA  Vlan200
Internet 10.2.1.254       -   0000.0c07.ac0a  ARPA  Vlan10
DSW1#

```

```

DSW1#show ip arp
Protocol Address          Age (min)  Hardware Addr  Type   Interface
-----
Internet 10.2.4.13         -          000d.bde3.6e00 ARPA   Port-
channel12
Internet 10.2.4.14         51         000b.fd20.ba00 ARPA   Port-
channel12
Internet 10.2.2.2         -          000d.bde3.6e00 ARPA   Vlan20
Internet 10.2.1.1         -          000d.bde3.6e00 ARPA   Vlan10
Internet 10.1.4.6         -          000d.bde3.6e00 ARPA
FastEthernet0/1
Internet 10.1.4.5         51         0019.5578.1cb2 ARPA
FastEthernet0/1

```

```
Internet 10.2.1.2          40  000b.fd20.ba00  ARPA  Vlan10
Internet 10.2.2.1          50  000b.fd20.ba00  ARPA  Vlan20
Internet 10.2.1.4          0   001c.238e.dbbc  ARPA  Vlan10
Internet 192.168.1.129    -   000d.bde3.6e00  ARPA  Vlan200
Internet 10.2.1.254       -   0000.0c07.ac0a  ARPA  Vlan10
DSW1#
```

```
DSW1#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 10.2.1.1/24
  Broadcast address is 255.255.255.255
  Address determined by non-volatile memory
  MTU is 1500 bytes
  Helper address is 10.1.4.5
  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 10.2.2.2/24
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 192.168.1.129/27  
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 10.1.4.6/30  
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 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 down, line protocol is down
    Inbound access list is not set
FastEthernet0/5 is down, line protocol is down
    Inbound access list is not set
FastEthernet0/6 is down, line protocol is down
    Inbound access list is not set
FastEthernet0/7 is down, line protocol is down
    Inbound access list is not set
FastEthernet0/8 is down, line protocol is down
    Inbound access list is not set
FastEthernet0/9 is down, line protocol is down
    Inbound access list is not set
FastEthernet0/10 is down, line protocol is down
    Inbound access list is not set
FastEthernet0/11 is down, line protocol is down
    Inbound access list is not set
FastEthernet0/12 is down, line protocol is down
    Inbound access list is not set
```

```
FastEthernet0/13 is down, line protocol is down
  Inbound access list is not set
FastEthernet0/14 is 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 10.2.4.13/30
  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-channel13 is up, line protocol is up
Port-channel14 is up, line protocol is up
Tunnel46 is up, line protocol is up
  Internet protocol processing disabled
Tunnel67 is up, line protocol is up
  Internet protocol processing disabled
DSW1#
```

```

DSW1#show ip cef
Prefix          Next Hop          Interface
0.0.0.0/0       10.1.4.5          FastEthernet0/1
0.0.0.0/32      receive
10.1.1.8/30     10.1.4.5          FastEthernet0/1
10.1.4.4/30     attached          FastEthernet0/1
10.1.4.4/32     receive          FastEthernet0/1
10.1.4.5/32     attached          FastEthernet0/1
10.1.4.6/32     receive          FastEthernet0/1
10.1.4.7/32     receive          FastEthernet0/1
10.1.4.8/30     10.2.1.2          Vlan10
                10.2.2.1          Vlan20
10.2.1.0/24     attached          Vlan10
10.2.1.0/32     receive          Vlan10
10.2.1.1/32     receive          Vlan10
10.2.1.2/32     attached          Vlan10
10.2.1.4/32     attached          Vlan10
10.2.1.254/32   receive
10.2.1.255/32   receive          Vlan10
10.2.2.0/24     attached          Vlan20
10.2.2.0/32     receive          Vlan20
10.2.2.1/32     attached          Vlan20
10.2.2.2/32     receive          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    receive          Port-channel12
10.2.4.14/32    attached          Port-channel12
10.2.4.15/32    receive          Port-channel12
192.168.1.128/27 attached          Vlan200
192.168.1.128/32 receive          Vlan200
192.168.1.129/32 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
DSW1#

```

```
DSW1#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
DSW1#
```

```
DSW1#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:
  10.1.4.6/32
  10.2.1.1/32
  10.2.2.2/32
  10.2.4.13/32
Routing Information Sources:
```

Gateway	Distance	Last Update
10.2.4.14	90	00:47:24
10.1.4.5	90	00:47:24
10.2.1.2	90	00:47:24
10.2.2.1	90	00:47:24

Distance: internal 90 external 170

Routing Protocol is "ospf 1"

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Router ID 192.168.1.129

Number of areas in this router is 1. 1 normal 0 stub 0 nssa

Maximum path: 4

Routing for Networks:

10.3.3.2 0.0.0.0 area 0

10.17.17.1 0.0.0.0 area 0

Routing Information Sources:

Gateway	Distance	Last Update
Distance: (default is 110)		

DSW1#

```
DSW1#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
DSW1#
```

```
DSW1#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 10.1.4.5, 00:47:54, FastEthernet0/1
D    10.1.4.8/30 [90/111] via 10.2.2.1, 00:51:10, Vlan20
```



```
[90/111] via 10.2.1.2, 00:51:10, Vlan10
D*EX 0.0.0.0/0 [170/1023] via 10.1.4.5, 00:47:39, FastEthernet0/1
DSW1#
```

```
DSW1#show ip eigrp neighbors
EIGRP-IPv4:(10) neighbors for process 10
H   Address                Interface      Hold Uptime    SRTT    RTO   Q
Seq                                     (sec)         (ms)          Cnt
Num
3   10.2.1.2                 V110          14 00:51:19    1    200   0
86
2   10.2.2.1                 V120          14 00:51:20    1    200   0
87
1   10.2.4.14                Po12          10 00:52:00    1    200   0
89
0   10.1.4.5                 Fa0/1         12 00:52:37    1    200   0
48
DSW1#
```

```
DSW1#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 0	1	0/0	1	0/1	50
Vl10 0	1	0/0	1	0/1	50
Vl20 0	1	0/0	1	0/1	50
Po12 0	1	0/0	1	0/1	50

```
DSW1#
```



```

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

```

DSW1#

DSW1#show spanning-tree

VLAN0010

```
Spanning tree enabled protocol rstp
Root ID    Priority    4106
           Address    000d.bde3.6e00
           This bridge is the root
           Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

Bridge ID  Priority    4106    (priority 4096 sys-id-ext 10)
           Address    000d.bde3.6e00
           Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
           Aging Time 300
```

Interface	Role	Sts	Cost	Prio.Nbr	Type
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----
Pol3	Desg	FWD	9	128.66	P2p Peer (STP)

VLAN0020

```
Spanning tree enabled protocol rstp
Root ID    Priority    4116
           Address    000b.fd20.ba00
           Cost        18
           Port        67 (Port-channel14)
           Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

Bridge ID  Priority    8212    (priority 8192 sys-id-ext 20)
           Address    000d.bde3.6e00
           Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
           Aging Time 300
```

Interface	Role	Sts	Cost	Prio.Nbr	Type
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----
Pol4	Root	FWD	9	128.67	P2p Peer (STP)

VLAN0200

```
Spanning tree enabled protocol rstp
Root ID    Priority    4296
           Address    000d.bde3.6e00
           This bridge is the root
           Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
```

Bridge ID Priority 4296 (priority 4096 sys-id-ext 200)  
Address 000d.bde3.6e00  
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec  
Aging Time 300

Interface	Role	Sts	Cost	Prio.	Nbr	Type
-----	-----	---	-----	-----	-----	-----
Po13	Desg	FWD	9	128.66	P2p	Peer (STP)
Po14	Desg	FWD	9	128.67	P2p	Peer (STP)

DSW1#

DSW1#show interfaces status

Port	Name	Status	Vlan	Duplex	Speed	Type
Fa0/1		connected	routed	a-full	a-100	
10/100BaseTX						

Fa0/2	notconnect	101	auto	auto
10/100BaseTX				
Fa0/3	notconnect	102	auto	auto
10/100BaseTX				
Fa0/4	notconnect	1	auto	auto
10/100BaseTX				
Fa0/5	notconnect	104	auto	auto
10/100BaseTX				
Fa0/6	notconnect	105	auto	auto
10/100BaseTX				
Fa0/7	notconnect	106	auto	auto
10/100BaseTX				
Fa0/8	notconnect	109	auto	auto
10/100BaseTX				
Fa0/9	notconnect	17	auto	auto
10/100BaseTX				
Fa0/10	notconnect	1	auto	auto
10/100BaseTX				
Fa0/11	notconnect	1	auto	auto
10/100BaseTX				
Fa0/12	notconnect	123	auto	auto
10/100BaseTX				
Fa0/13	notconnect	1	auto	auto
10/100BaseTX				
Fa0/14	notconnect	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
Po13	connected	trunk	a-full	a-100
Po14	connected	trunk	a-full	a-100
DSW1#				

```
DSW1#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: 101 (Inactive)  
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: 102 (Inactive)  
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: 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: Fa0/5  
Switchport: Enabled  
Administrative Mode: static access  
Operational Mode: down  
Administrative Trunking Encapsulation: negotiate  
Negotiation of Trunking: Off  
Access Mode VLAN: 104 (Inactive)  
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: 105 (Inactive)  
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: 106 (Inactive)  
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: 109 (Inactive)  
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: 17 (Inactive)  
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: 123 (Inactive)  
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 Po14)  
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 Po14)  
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 Po14)  
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 Po13)  
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 Po13)  
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 Po13)  
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: Po13  
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: Po14  
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  
DSW1#

```
DSW1#show interfaces trunk
```

Port	Mode	Encapsulation	Status	Native vlan
Po13	on	802.1q	trunking	1
Po14	on	802.1q	trunking	1

Port	Vlans allowed on trunk
Po13	10,200
Po14	20,200

Port	Vlans allowed and active in management domain
Po13	10,200
Po14	20,200

Port	Vlans in spanning tree forwarding state and not pruned
Po13	10,200
Po14	20,200

```
DSW1#
```

```
DSW1#show vtp status
VTP Version                : running VTP2
Configuration Revision     : 36
Maximum VLANs supported locally : 1005
Number of existing VLANs   : 8
VTP Operating Mode        : Server
VTP Domain Name           : netlearning
VTP Pruning Mode          : Disabled
VTP V2 Mode                : Enabled
VTP Traps Generation      : Disabled
MD5 digest                 : 0x3A 0xD8 0x7D 0x4B 0xF5 0x78 0x54 0xCE
Configuration last modified by 10.2.1.1 at 3-1-93 00:50:15
Local updater ID is 10.2.1.1 on interface Vl10 (lowest numbered VLAN
interface found)
DSW1#
```

```
DSW1#show vtp password
VTP Password: cisco
DSW1#
```



```
DSW1#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:53m:34s
```

```
-----
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:53m:35s
```

```
-----
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:53m:35s
```

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

```
-----
Port-channel: Po12
```

```
-----
Age of the Port-channel = 0d:00h:54m:27s
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:53m:36s Fa0/24
Time since last port Un-bundled: 0d:00h:53m:37s Fa0/24

```

Group: 13

```

-----
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 = 13 Mode = Active Gcchange = -
Port-channel = Po13 GC = - Pseudo port-channel =
Po13
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	0xD	0xD	0x10

Partner's information:

Port	Flags	Priority	LACP port Dev ID	Admin Age	Oper key	Port Key	Port Number
Fa0/19	SA	bndl	32768	0xD	0xD	0x10	0x3D

Fa0/19 SP 32768 0015.faac.46c0 13s 0x0 0x1 0x13  
0x3C

Age of the port in the current state: 0d:00h:54m:17s

Port: Fa0/20

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 13 Mode = Active Gcchange = -  
Port-channel = Po13 GC = - Pseudo port-channel =  
Po13  
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 0x3D	SA	bndl	32768	0xD	0xD	0x11

Partner's information:

Port	Flags	State	LACP port Priority	Dev ID	Admin Age	Oper key	Port Key	Port Number
Fa0/20 0x3C	SP		32768	0015.faac.46c0	3s	0x0	0x1	0x14

Age of the port in the current state: 0d:00h:54m:18s

Port: Fa0/21

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 13 Mode = Active Gcchange = -  
Port-channel = Po13 GC = - Pseudo port-channel =  
Po13  
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	Oper	Port
Fa0/21	SA	bndl	32768	0xD	0xD	0x12	0x3D

Partner's information:

Port	Flags	State	LACP port	Priority	Dev ID	Age	key	Oper	Port
Fa0/21	SP		32768	0015.faac.46c0	19s	0x0	0x1	0x15	0x3C

Age of the port in the current state: 0d:00h:54m:19s

Port-channels in the group:

Port-channel: Po13 (Primary Aggregator)

Age of the Port-channel = 0d:00h:54m:31s  
 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:54m:21s Fa0/21

Group: 14

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 = 14 Mode = Automatic-Sl Gcchange = 0  
Port-channel = Po14 GC = 0x000E0001 Pseudo port-channel =  
Po14  
Port index = 0 Load = 0x00 Protocol = PAgP

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

Local information:

Group				Hello	Partner	PAgP	Learning	
Port	Flags	State	Timers	Interval	Count	Priority	Method	
Ifindex								
Fa0/16	SAC	U6/S7	HQ	30s	1	128	Any	33

Partner's information:

Group	Partner	Partner	Partner	Partner	
Port	Name	Device ID	Port	Age	Flags
Cap.					
Fa0/16	ASW2	0015.fab8.2880	Fa0/16	12s	SC
20001					

Age of the port in the current state: 0d:00h:54m:24s

Port: Fa0/17

-----

Port state = Up Mstr In-Bndl  
Channel group = 14 Mode = Automatic-Sl Gcchange = 0  
Port-channel = Po14 GC = 0x000E0001 Pseudo port-channel =  
Po14  
Port index = 0 Load = 0x00 Protocol = PAgP

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

Local information:

Group				Hello	Partner	PAgP	Learning
-------	--	--	--	-------	---------	------	----------

Port	Flags	State	Timers	Interval	Count	Priority	Method	
Fa0/17	SAC	U6/S7	HQ	30s	1	128	Any	33

Partner's information:

Group	Partner	Partner	Partner	Partner
Port	Name	Device ID	Port	Age
Cap.				Flags
Fa0/17	ASW2	0015.fab8.2880	Fa0/17	9s
20001				SC

Age of the port in the current state: 0d:00h:54m:26s

Port: Fa0/18

-----

Port state = Up Mstr In-Bndl  
Channel group = 14 Mode = Automatic-Sl Gcchange = 0  
Port-channel = Po14 GC = 0x000E0001 Pseudo port-channel = Po14  
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	Interval	Count	Priority	Method	
Fa0/18	SAC	U6/S7	HQ	30s	1	128	Any	33

Partner's information:

Group	Partner	Partner	Partner	Partner
Port	Name	Device ID	Port	Age
Cap.				Flags
Fa0/18	ASW2	0015.fab8.2880	Fa0/18	12s
20001				SC

Age of the port in the current state: 0d:00h:54m:27s

Port-channels in the group:

-----

Port-channel: Po14

-----

Age of the Port-channel = 0d:00h:54m:37s  
Logical slot/port = 1/2                      Number of ports = 3  
GC = 0x000E0001                      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	Automatic-S1	0
0	00	Fa0/17	Automatic-S1	0
0	00	Fa0/18	Automatic-S1	0

Time since last port bundled:      0d:00h:54m:28s      Fa0/16

DSW1#

```
DSW1#show standby
Vlan10 - Group 10
  State is Active
    2 state changes, last state change 00:53:33
  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 2.136 secs
  Preemption enabled
  Active router is local
  Standby router is 10.2.1.2, priority 20 (expires in 9.952 sec)
  Priority 110 (configured 110)
  IP redundancy name is "hsrp-V110-10" (default)
DSW1#
```



DSW1#show standby brief

P indicates configured to preempt.

Interface	Grp	Prio	P	State	Active	Standby	Virtual
Vl10	10	110	P	Active	local	10.2.1.2	

IP  
10.2.1.254  
DSW1#

DSW1#show spanning-tree inconsistentports

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

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

DSW1#

```
DSW1#show spanning-tree summary
Switch is in rapid-pvst mode
Root bridge for: VLAN0010, VLAN0200
```

```
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	0	0	0	2	2
3 vlans	0	0	0	4	4

DSW1#

DSW1#show uddl

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

DSW1#

DSW1#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)
13	Po13 (SU)	LACP	Fa0/19 (P)	Fa0/20 (P)	Fa0/21 (P)
14	Po14 (SU)	PAgP	Fa0/16 (P)	Fa0/17 (P)	Fa0/18 (P)

DSW1#

```
DSW1#show etherchannel protocol
      Channel-group listing:
      -----
```

```
Group: 12
```

```
-----
```

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

```
Group: 13
```

```
-----
```

```
Protocol: LACP
```

```
Group: 14
```

```
-----
```

```
Protocol: PAgP
```

```
DSW1#
```



```
DSW1#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           Gchange = -
Port-channel    = Po12        GC   = -           Pseudo port-channel =
Po12
Port index      = 0           Load = 0x00          Protocol = -
```

```
Age of the port in the current state: 0d:00h:54m:41s
```

```
Port: Fa0/23
-----
```

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

```
Age of the port in the current state: 0d:00h:54m:41s
```

```
Port: Fa0/24
-----
```

```
Port state      = Up Mstr In-Bndl
```

Channel group = 12                    Mode = On                    Gcchange = -  
Port-channel = Po12                  GC = -                    Pseudo port-channel =  
Po12  
Port index = 0                    Load = 0x00                  Protocol = -

Age of the port in the current state: 0d:00h:54m:42s

Group: 13

-----

Ports in the group:

-----

Port: Fa0/19

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 13                  Mode = Active                  Gcchange = -  
Port-channel = Po13                  GC = -                    Pseudo port-channel =  
Po13  
Port index = 0                    Load = 0x00                  Protocol = LACP

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

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

Local information:

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

Partner's information:

Port	Flags	Priority	LACP port Dev ID	Admin Age	Oper key	Port Key	Port Number
Fa0/19 0x3C	SP	32768	0015.faac.46c0	24s	0x0	0x1	0x13

Age of the port in the current state: 0d:00h:55m:23s

Port: Fa0/20

-----

Port state = Up Mstr Assoc In-Bndl  
Channel group = 13                  Mode = Active                  Gcchange = -  
Port-channel = Po13                  GC = -                    Pseudo port-channel =  
Po13  
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 0x3D	SA	bndl	32768	0xD	0xD	0x11

Partner's information:

Port	Flags	State	LACP port Priority	Dev ID	Admin Age	Oper key	Port Key	Port Number
Fa0/20 0x3C	SP		32768	0015.faac.46c0	10s	0x0	0x1	0x14

Age of the port in the current state: 0d:00h:55m:24s

Port: Fa0/21

-----

Port state        = Up Mstr Assoc In-Bndl  
 Channel group = 13                    Mode = Active                    Gcchange = -  
 Port-channel   = Po13                GC    =    -                    Pseudo port-channel =  
 Po13  
 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	0xD	0xD	0x12

Partner's information:

Port	Flags	State	LACP port Priority	Dev ID	Admin Age	Oper key	Port Key	Port Number
Fa0/21 0x3C	SP		32768	0015.faac.46c0	2s	0x0	0x1	0x15

Age of the port in the current state: 0d:00h:55m:25s

Group: 14

-----

Ports in the group:

-----

Port: Fa0/16

-----

Port state = Up Mstr In-Bndl  
Channel group = 14 Mode = Automatic-S1 Gcchange = 0  
Port-channel = Po14 GC = 0x000E0001 Pseudo port-channel =  
Po14  
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	SAC	U6/S7	HQ	30s	1	128	Any	33

Partner's information:

Group	Partner Name	Partner Device ID	Partner Port	Partner Age	Partner Flags
Fa0/16 20001	ASW2	0015.fab8.2880	Fa0/16	22s	SC

Age of the port in the current state: 0d:00h:55m:29s

Port: Fa0/17

-----

Port state = Up Mstr In-Bndl  
Channel group = 14 Mode = Automatic-S1 Gcchange = 0  
Port-channel = Po14 GC = 0x000E0001 Pseudo port-channel =  
Po14  
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	SAC	U6/S7	HQ	30s	1	128	Any	33

Partner's information:

Group	Port	Partner Name	Partner Device ID	Partner Port	Partner Age	Partner Flags
	Fa0/17	ASW2	0015.fab8.2880	Fa0/17	15s	SC

Age of the port in the current state: 0d:00h:55m:30s

Port: Fa0/18

-----

Port state = Up Mstr In-Bndl  
 Channel group = 14 Mode = Automatic-S1 Gcchange = 0  
 Port-channel = Po14 GC = 0x000E0001 Pseudo port-channel = Po14  
 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	SAC	U6/S7	HQ	30s	1	128	Any	33

Partner's information:

Group	Partner	Partner	Partner	Partner
Port	Name	Device ID	Port	Age
Cap.				Flags
Fa0/18	ASW2	0015.fab8.2880	Fa0/18	22s
20001				SC

Age of the port in the current state: 0d:00h:55m:32s

DSW1#

```
DSW1#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
```

DSW1#

```
DSW1#show etherchannel port-channel
      Channel-group listing:
      -----
```

```
Group: 12
-----
```

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

```
Port-channel: Po12
-----
```

```
Age of the Port-channel    = 0d:00h:55m:57s
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:55m:05s Fa0/24  
Time since last port Un-bundled: 0d:00h:55m:07s Fa0/24

Group: 13

-----

Port-channels in the group:

-----

Port-channel: Po13 (Primary Aggregator)

-----

Age of the Port-channel = 0d:00h:55m: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:55m:47s Fa0/21

Group: 14

-----

Port-channels in the group:

-----

Port-channel: Po14

-----

Age of the Port-channel = 0d:00h:55m:58s  
Logical slot/port = 1/2 Number of ports = 3  
GC = 0x000E0001 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	Automatic-S1	0
0	00	Fa0/17	Automatic-S1	0
0	00	Fa0/18	Automatic-S1	0

Time since last port bundled: 0d:00h:55m:50s Fa0/16

DSW1#

DSW1#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 14 neighbors

Group	Partner	Partner	Partner	Partner	
Port	Name	Device ID	Port	Age	Flags
Fa0/16	ASW2	0015.fab8.2880	Fa0/16	20s	SC
20001					
Fa0/17	ASW2	0015.fab8.2880	Fa0/17	14s	SC
20001					
Fa0/18	ASW2	0015.fab8.2880	Fa0/18	20s	SC
20001					
DSW1#					

DSW1#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 13 neighbors

Partner's information:

Port	Flags	LACP port Priority	Dev ID	Age	Admin key	Oper Key	Port Number
Fa0/19 0x3C	SP	32768	0015.faac.46c0	8s	0x0	0x1	0x13
Fa0/20 0x3C	SP	32768	0015.faac.46c0	21s	0x0	0x1	0x14
Fa0/21 0x3C	SP	32768	0015.faac.46c0	12s	0x0	0x1	0x15

DSW1#

```
DSW1#show port-security
Secure Port  MaxSecureAddr  CurrentAddr  SecurityViolation  Security
Action
```

```

                (Count)      (Count)      (Count)
-----
--
    Fa0/2                2          0          0
Shutdown
-----
--
Total Addresses in System (excluding one mac per port)    : 0
Max Addresses limit in System (excluding one mac per port) : 5120
DSW1#

```

```

DSW1#show port-security address
      Secure Mac Address Table

```

```

-----
Vlan    Mac Address      Type                Ports    Remaining Age
-----  -
(mins)
-----
-----
Total Addresses in System (excluding one mac per port)    : 0

```

Max Addresses limit in System (excluding one mac per port) : 5120  
DSW1#

```
DSW1#show ipv6 interface brief
Vlan1          [administratively down/down]
  unassigned
Vlan10         [up/up]
  unassigned
Vlan20         [up/up]
  unassigned
Vlan200        [up/up]
  unassigned
FastEthernet0/1 [up/up]
  unassigned
FastEthernet0/2 [down/down]
  unassigned
FastEthernet0/3 [down/down]
  unassigned
FastEthernet0/4 [down/down]
```

unassigned	
FastEthernet0/5	[down/down]
unassigned	
FastEthernet0/6	[down/down]
unassigned	
FastEthernet0/7	[down/down]
unassigned	
FastEthernet0/8	[down/down]
unassigned	
FastEthernet0/9	[down/down]
unassigned	
FastEthernet0/10	[down/down]
unassigned	
FastEthernet0/11	[down/down]
unassigned	
FastEthernet0/12	[down/down]
unassigned	
FastEthernet0/13	[down/down]
unassigned	
FastEthernet0/14	[down/down]
unassigned	
FastEthernet0/15	[down/down]
unassigned	
FastEthernet0/16	[up/up]
unassigned	
FastEthernet0/17	[up/up]
unassigned	
FastEthernet0/18	[up/up]
unassigned	
FastEthernet0/19	[up/up]
unassigned	
FastEthernet0/20	[up/up]
unassigned	
FastEthernet0/21	[up/up]
unassigned	
FastEthernet0/22	[up/up]
unassigned	
FastEthernet0/23	[up/up]
unassigned	
FastEthernet0/24	[up/up]
unassigned	
GigabitEthernet0/1	[administratively down/down]
unassigned	
GigabitEthernet0/2	[administratively down/down]
unassigned	
Port-channel12	[up/up]
unassigned	
Port-channel13	[up/up]
unassigned	
Port-channel14	[up/up]
unassigned	
Tunnel46	[up/up]
FE80::20D:BDFF:FEE3:6E00	
2026::2:2	

```
Tunnel67 [up/up]
FE80::20D:BDFF:FEE3:6E00
2026::3:1
DSW1#
```

```
DSW1#ping ipv6 2026::12:1
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::12:1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
DSW1#
```

```
DSW1#ping ipv6 2026::12:2
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::12:2, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
DSW1#
```



```
DSW1#ping ipv6 2026::1:1
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::1:1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
DSW1#
```

```
DSW1#ping ipv6 2026::1:2
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::1:2, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
DSW1#
```

```
DSW1#ping ipv6 2026::34:1
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::34:1, timeout is 2 seconds:
```

```
.....  
Success rate is 0 percent (0/5)  
DSW1#
```

```
DSW1#ping ipv6 2026::34:2
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 2026::34:2, timeout is 2 seconds:  
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/2/4 ms  
DSW1#
```

```
DSW1#ping ipv6 2026::2:1
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::2:1, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/2/4 ms
```

```
DSW1#
```

```
DSW1#ping ipv6 2026::2:2
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::2:2, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/4 ms
```

```
DSW1#
```

```
DSW1#ping ipv6 2026::3:1
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::3:1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms
```

```
DSW1#
```

```
DSW1#ping ipv6 2026::3:2
```

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

```
Sending 5, 100-byte ICMP Echos to 2026::3:2, timeout is 2 seconds:
```

```
!!!!!
```

Success rate is 100 percent (5/5), round-trip min/avg/max = 0/1/4 ms  
DSW1#

```
DSW1#show ipv6 route
IPv6 Routing Table - Default - 6 entries
Codes: C - Connected, L - Local, S - Static, U - Per-user Static route
       R - RIP, D - EIGRP, EX - EIGRP external
C    2026::2:0/128 [0/0]
     via Tunnel46, directly connected
L    2026::2:2/128 [0/0]
     via Tunnel46, receive
C    2026::3:0/122 [0/0]
     via Tunnel67, directly connected
L    2026::3:1/128 [0/0]
     via Tunnel67, receive
R    2026::34:0/122 [120/6]
     via FE80::219:55FF:FE78:1CB2, Tunnel46
L    FF00::/8 [0/0]
     via Null0, receive
```

DSW1#

```
DSW1#show ipv6 rip RIPNG
RIP process "RIPNG", port 521, multicast-group FF02::9, pid 169
  Administrative distance is 120. Maximum paths is 16
  Updates every 30 seconds, expire after 180
  Holddown lasts 0 seconds, garbage collect after 120
  Split horizon is on; poison reverse is off
  Default routes are not generated
  Periodic updates 130, trigger updates 6
Interfaces:
  Tunnel67
  Tunnel46
Redistribution:
  None
DSW1#
```



