



Show Commands

The commands in this chapter apply to the Cisco MDS 9000 Family of multilayer directors and fabric switches. All commands are shown here in alphabetical order regardless of command mode. See the “Command Modes” section to determine the appropriate mode for each command. For more information, refer to the *Cisco MDS 9000 Family Configuration Guide*.

- [show accounting, page 19-4](#)
- [show arp, page 19-5](#)
- [show authentication, page 19-6](#)
- [show auto-copy, page 19-7](#)
- [show boot, page 19-8](#)
- [show callhome, page 19-10](#)
- [show cdp, page 19-12](#)
- [show clock, page 19-16](#)
- [show cores, page 19-17](#)
- [show environment, page 19-18](#)
- [show fc2, page 19-20](#)
- [show fcalias, page 19-23](#)
- [show fcanalyzer, page 19-24](#)
- [show fcc, page 19-25](#)
- [show fcdomain, page 19-26](#)
- [show fcdroplateny, page 19-28](#)
- [show fcflow stats, page 19-29](#)
- [show fcflow, page 19-30](#)
- [show fcip profile, page 19-31](#)
- [show fens database, page 19-32](#)
- [show fens statistics, page 19-34](#)
- [show fcroute, page 19-35](#)
- [show fcs, page 19-38](#)
- [show fctimer, page 19-42](#)
- [show fc-tunnel, page 19-43](#)

- show file, page 19-44
- show flogi database, page 19-45
- show fspf, page 19-47
- show hardware, page 19-50
- show hosts, page 19-52
- show incompatibility, page 19-53
- show install all impact, page 19-54
- show in-order-gaurantee, page 19-56
- show interface, page 19-57
- show ip access-list, page 19-63
- show ip route, page 19-64
- show ip routing, page 19-65
- show ips arp, page 19-66
- show ips ip route, page 19-67
- show ips stats, page 19-68
- show ips status, page 19-71
- show iscsi global, page 19-72
- show iscsi initiator, page 19-73
- show iscsi session, page 19-76
- show iscsi stats, page 19-78
- show iscsi virtual-target, page 19-82
- show kernel core, page 19-83
- show license, page 19-84
- show line, page 19-86
- show logging, page 19-87
- show module, page 19-92
- show ntp, page 19-94
- show port-channel, page 19-96
- show port-security, page 19-98
- show processes, page 19-101
- show qos statistics, page 19-104
- show radius-server, page 19-105
- show role, page 19-106
- show rscn, page 19-107
- show running-config, page 19-109
- show scsi-target, page 19-110
- show snmp, page 19-113
- show span session, page 19-115

- [show sprom](#), page 19-117
- [show ssh](#), page 19-120
- [show startup-config](#), page 19-122
- [show switchname](#), page 19-126
- [show system](#), page 19-127
- [show tech-support](#), page 19-129
- [show telnet server](#), page 19-132
- [show terminal](#), page 19-133
- [show trunk protocol](#), page 19-136
- [show user-account](#), page 19-137
- [show users](#), page 19-138
- [show version](#), page 19-139
- [show vrrp](#), page 19-142
- [show vsan](#), page 19-144
- [show wwn](#), page 19-147
- [show zone](#), page 19-148
- [show zoneset](#), page 19-151

show accounting

To display configured accounting information, use the **show accounting** command.

```
show accounting {config | log | logsize}
```

| Syntax Description | config | Shows RADIUS accounting configuration information. |
|--------------------|---------|--|
| | log | Shows accounting log. |
| | logsize | Shows local accounting log file size. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples To display configured accounting parameters.

```
switch# show accounting config
RADIUS accounting not enabled
local accounting enabled
```

To display configured log size.

```
switch# show accounting logsize
maximum local accounting log size:29000
```

To display the entire log file.

```
switch# show accounting log
2002:stop:snmp_1033151784_171.71.49.83:admin:
Fri Sep 27 18:36:24 2002:start:_1033151784:root
Fri Sep 27 18:36:28 2002:update:::fcc configuration requested
Fri Sep 27 18:36:33 2002:start:snmp_1033151793_171.71.49.83:admin
Fri Sep 27 18:36:33 2002:stop:snmp_1033151793_171.71.49.83:admin:
Fri Sep 27 18:39:28 2002:start:snmp_1033151968_171.71.49.96:admin
Fri Sep 27 18:39:28 2002:stop:snmp_1033151968_171.71.49.96:admin:
Fri Sep 27 18:39:28 2002:start:_1033151968:root
Fri Sep 27 18:39:31 2002:update:::fcc configuration requested
Fri Sep 27 18:39:37 2002:start:snmp_1033151977_171.71.49.96:admin
Fri Sep 27 18:39:37 2002:stop:snmp_1033151977_171.71.49.96:admin:
Fri Sep 27 18:39:37 2002:start:snmp_1033151977_171.71.49.96:admin
Fri Sep 27 18:42:12 2002:start:snmp_1033152132_171.71.49.96:admin
Fri Sep 27 18:42:12 2002:stop:snmp_1033152132_171.71.49.96:admin:
Fri Sep 27 18:42:12 2002:start:snmp_1033152132_171.71.49.96:admin
Fri Sep 27 18:42:40 2002:start:snmp_1033152160_171.71.49.96:admin
```

show arp

To view Address Resolution Protocol (ARP) entries, use the **show arp** command.

show arp

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples This displays the ARP table.

```
switch# show arp
Protocol Address          Age (min)   Hardware Addr  Type   Interface
Internet 171.1.1.1             0           0006.5bec.699c  ARPA  mgmt0
Internet 172.2.0.1             4           0000.0c07.ac01  ARPA  mgmt0
```

| Related Commands | Command | Description |
|------------------|------------------------|-------------------------------------|
| | clear arp-cache | Clears the arp-cache table entries. |

show authentication

To display the configured authentication methods, use the **show authentication** command.

show authentication

| | |
|---------------------------|--|
| Syntax Description | This command has no arguments or keywords. |
| Defaults | None. |
| Command Modes | EXEC mode. |
| Command History | This command was introduced in Cisco MDS SAN-OS Release 1.0(2). |
| Usage Guidelines | None. |
| Examples | <p>The following example displays authentication information.</p> <pre>switch# show authentication authentication method:none console:not enabled telnet/ssh:not enabled authentication method:radius console:not enabled telnet/ssh:not enabled authentication method:local console:enabled telnet/ssh:enabled</pre> |

show auto-copy

To display state of the auto-copy feature, use the **show auto-copy** command.

show auto-copy [list]

| Syntax | Description |
|-----------------------|---|
| show auto-copy | Displays if the auto-copy feature is enabled or disabled. |
| list | Displays the list of files to be auto-copied |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines None.

Examples The following example displays the current state of the auto-copy feature.

```
switch# show boot auto-copy
Boot variables Auto-Copy ON
```

The following example displays the ilc1.bin image being copied to the standby supervisor module's bootflash, and once this is successful, the next file will be lasilc1.bin. This command only displays files on the active supervisor module.

```
switch# show boot auto-copy list
File: /bootflash/ilc1.bin
Bootvar: ilce
```

```
File:/bootflash/lasilc1.bin
Bootvar: lasilc
```

The following example displays a typical message when the auto-copy option is disabled or if no files are copied.

```
switch# show boot auto-copy list
No file currently being auto-copied
```

show boot

To display the boot variables or modules, use the **show boot** command.

```
show boot [ module ( slot-number ) | variables ]
```

| Syntax Description | show boot | Displays the boot variables in any Cisco MDS 9000 Family switch. |
|--------------------|-------------|--|
| | module | Displays the boot variables for all modules. |
| | slot-number | Displays the boot variable for the specified module. |
| | variables | Displays the list of boot variables. |

Defaults None.

Command Modes EXEC mode.

Command History This command was modified in Release 1.2(2).

Usage Guidelines None.

Examples The following example displays the current contents of the boot variable.

```
switch# show boot
kickstart variable = bootflash:/kickstart-image
system variable = bootflash:/system-image
Module 2
asm-sfn variable = bootflash:/asm-image
```

The following example displays the images on the specified ASM module.

```
switch# show boot module
Module 2
asm-sfn variable = bootflash:/asm-image
```

The following example displays a list of all boot variables. The ASM-SFN boot variable is used for the ASM.

```
switch# show boot variables
List of boot variables are:
  asm-sfn
  system
  kickstart
```


The following example displays image1.bin being copied to the standby supervisor module's bootflash, and once this is successful, the next file will be image2.bin. This command only displays files on the active supervisor module.

```
switch# show boot auto-copy list
File: /bootflash/image1.bin
Bootvar: IMAGE1_VARIABLE

File:/bootflash/image2.bin
Bootvar: IMAGE2_VARIABLE
```

The following example displays a typical message when the auto-copy option is disabled or if no files are copied.

```
switch# show boot auto-copy list
No file currently being auto-copied
```

show callhome

To display related Call Home information configured on a switch, use the **show callhome** command.

show callhome [**destination-profile** *profile*] [**transport-email**]

| | | |
|---------------------------|---|---|
| Syntax Description | destination-profile <i>profile</i> | Shows callhome destination profile information for the specified profile. |
| | transport-email | Shows callhome email transport information. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays configured callhome information.

```
switch# show callhome
callhome enabled
Callhome Information:
contact person name:who@where
contact person's email:person@place.com
contact person's phone number:310-408-4000
street addr:1234 Picaboo Street, Any city, Any state, 12345
site id:Site1ManhattanNewYork
customer id:Customer1234
contract id:Andiamo1234
switch priority:0
```

The following example displays destination profile information.

```
switch# show callhome destination-profile
XML destination profile information
maximum message size:250000
email addresses configured:
findout@.cisco.com

Short-txt destination profile information
maximum message size:4000
email addresses configured:
person1@epage.company.com

full-txt destination profile information
maximum message size:250000
email addresses configured:
person2@company2.com
```

The following example displays the full-text profile.

```
switch# show callhome destination-profile profile full-txt-destination
full-txt destination profile information
maximum message size:250000
email addresses configured:
person2@company2.com
```

The following example displays the short-text profile.

```
switch# show callhome destination-profile profile short-txt-destination
Short-txt destination profile information
maximum message size:4000
email addresses configured:
person2@company2.com
```

The following example displays the XML destination profile.

```
switch# show callhome destination-profile profile XML-destination
XML destination profile information
maximum message size:250000
email addresses configured:
findout@.cisco.com
```

The following example displays e-mail and SMTP information.

```
switch# show callhome transport-email
from email addr:user@company1.com
reply to email addr:pointer@company.com
return receipt email addr:user@company1.com
smtp server:server.company.com
smtp server port:25
```

show cdp

To display CDP parameters configured globally or for a specific interface, use the **show cdp** command.

```
show cdp { all | entry [ all | name cdp-name ] | global | interface [ gigabitethernet slot-port | mgmt
0 ] | neighbors [ detail | interface (gigabitethernet slot-port | mgmt 0 ) ] | traffic interface [
gigabitethernet slot-port | mgmt 0 ] }
```

| Syntax Description | | |
|------------------------|--|---|
| all | | Displays all enabled CDP interfaces. |
| entry | | Displays CDP database entries. |
| all | | Displays all CDP entries in the database |
| name | | Displays CDP entries that match a specified name. |
| <i>cdp-name</i> | | Specifies the name matching a CDP entry (restricted to 256 characters). |
| global | | Displays global CDP parameters. |
| interface | | Displays CDP parameters for an interface. |
| gigabitethernet | | Specifies the Gigabit Ethernet interface. |
| <i>slot-port</i> | | Specifies the slot number and port number separated by a slash (/). |
| mgmt 0 | | Specifies the Ethernet management interface. |
| neighbors | | Displays all CDP neighbors. |
| detail | | Displays detailed information for all CDP neighbors |
| interface | | Displays CDP information for neighbors on a specified interface. |
| traffic | | Displays CDP traffic statistics for an interface. |

Defaults None

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines This command is allowed only on the active supervisor module in the Cisco MDS 9500 Series.

Examples

The following example displays all CDP capable interfaces and parameters.

```
switch# show cdp all
GigabitEthernet4/1 is up
    CDP enabled on interface
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
GigabitEthernet4/8 is down
    CDP enabled on interface
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
mgmt0 is up
    CDP enabled on interface
    Sending CDP packets every 100 seconds
    Holdtime is 200 seconds
```

The following example displays all CDP neighbor entries.

```
switch# show cdp entry all
-----
Device ID:069038747(Kiowa3)
Entry address(es):
    IP Address: 172.22.92.5
Platform: WS-C5500, Capabilities: Trans-Bridge Switch
Interface: mgmt0, Port ID (outgoing port): 5/22
Holdtime: 136 sec

Version:
WS-C5500 Software, Version McpSW: 2.4(3) NmpSW: 2.4(3)
Copyright (c) 1995-1997 by Cisco Systems

Advertisement Version: 1
```

The following example displays the specified CDP neighbor.

```
switch# show cdp entry name 0
-----
Device ID:0
Entry address(es):
    IP Address: 0.0.0.0
Platform: DS-X9530-SF1-K9, Capabilities: Host
Interface: GigabitEthernet4/1, Port ID (outgoing port): GigabitEthernet4/1
Holdtime: 144 sec

Version:
1.1(0.144)

Advertisement Version: 2
Duplex: full
```

The following example displays global CDP parameters.

```
switch# show cdp global
Global CDP information:
    CDP enabled globally
    Sending CDP packets every 60 seconds
    Sending a holdtime value of 180 seconds
    Sending CDPv2 advertisements is enabled
```

The following example displays CDP parameters for the management interface.

```
switch# show cdp interface mgmt 0
mgmt0 is up
  CDP enabled on interface
  Sending CDP packets every 60 seconds
  Holdtime is 180 seconds
```

The following example displays CDP parameters for the Gigabit Ethernet interface.

```
switch# show cdp interface gigabitethernet 4/1
GigabitEthernet4/1 is up
  CDP enabled on interface
  Sending CDP packets every 80 seconds
  Holdtime is 200 seconds
```

The following example displays CDP Neighbors (brief).

```
switch# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater

Device ID          Local Intrfce  Hldtme  Capability  Platform  Port ID
0                  Gig4/1         135     H           DS-X9530-SF1-  Gig4/1
069038732(Kiowa2  mgmt0          132     T S         WS-C5500      8/11
069038747(Kiowa3  mgmt0          156     T S         WS-C5500      6/20
069038747(Kiowa3  mgmt0          158     T S         WS-C5500      5/22
```

The following example displays CDP neighbors (detail).

```
switch# show CDP neighbor detail
-----
Device ID:0
Entry address(es):
  IP Address: 0.0.0.0
Platform: DS-X9530-SF1-K9, Capabilities: Host
Interface: GigabitEthernet4/1, Port ID (outgoing port): GigabitEthernet4/1
Holdtime: 162 sec

Version:
1.1(0.144)

Advertisement Version: 2
Duplex: full
-----
Device ID:069038732(Kiowa2)
Entry address(es):
  IP Address: 172.22.91.5
Platform: WS-C5500, Capabilities: Trans-Bridge Switch
Interface: mgmt0, Port ID (outgoing port): 8/11
Holdtime: 132 sec

Version:
WS-C5500 Software, Version McpSW: 2.4(3) NmpSW: 2.4(3)
Copyright (c) 1995-1997 by Cisco Systems

Advertisement Version: 1
```

The following example displays the specified CDP neighbor (detail).

```
switch# show CDP neighbors interface gigabitethernet 4/1 detail
-----
Device ID:0
Entry address(es):
  IP Address: 0.0.0.0
Platform: DS-X9530-SF1-K9, Capabilities: Host
Interface: GigabitEthernet4/1, Port ID (outgoing port): GigabitEthernet4/1
Holdtime: 144 sec

Version:
1.1(0.144)

Advertisement Version: 2
Duplex: full
```

The following example displays CDP traffic statistics for the management interface.

```
switch# show cdp traffic interface mgmt 0
-----
Traffic statistics for mgmt0
Input Statistics:
  Total Packets: 1148
  Valid CDP Packets: 1148
    CDP v1 Packets: 1148
    CDP v2 Packets: 0
  Invalid CDP Packets: 0
    Unsupported Version: 0
    Checksum Errors: 0
    Malformed Packets: 0

Output Statistics:
  Total Packets: 2329
    CDP v1 Packets: 1164
    CDP v2 Packets: 1165
  Send Errors: 0
```

The following example displays CDP traffic statistics for the Gigabit Ethernet interface

```
switch# show cdp traffic interface gigabitethernet 4/1
-----
Traffic statistics for GigabitEthernet4/1
Input Statistics:
  Total Packets: 674
  Valid CDP Packets: 674
    CDP v1 Packets: 0
    CDP v2 Packets: 674
  Invalid CDP Packets: 0
    Unsupported Version: 0
    Checksum Errors: 0
    Malformed Packets: 0

Output Statistics:
  Total Packets: 674
    CDP v1 Packets: 0
    CDP v2 Packets: 674
  Send Errors: 0
```

show clock

To show the system date and time and verify the time zone configuration., use the **show clock** command.

show clock

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```
switch# show clock  
Fri Mar 14 01:31:48 UTC 2003
```


show cores

To show all the cores presently available for upload from active sup, use the **show cores** command.

show cores

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples In the following example, an FSPF core was generated on the active supervisor (slot 5), an FCC core on the standby supervisor (slot 6) and acltcam and fib on module (slot 8).

```
switch# show cores
```

| Module-num | Process-name | PID | Core-create-time |
|------------|--------------|------|------------------|
| ----- | ----- | --- | ----- |
| 5 | fspf | 1524 | Jan 9 03:11 |
| 6 | fcc | 919 | Jan 9 03:09 |
| 8 | acltcam | 285 | Jan 9 03:09 |
| 8 | fib | 283 | Jan 9 03:08 |

show environment

To display all environment-related switch information (status of chassis clock, chassis fan modules, power supply modules, power supply redundancy mode and power usage summary, module temperature thresholds and alarm status, use the **show environment** command.

show environment [clock | fan | power | temperature]

| Syntax Description | clock | Displays status of chassis clock modules |
|--------------------|--------------------|--|
| | fan | Displays status of chassis fan modules |
| | power | Displays status of power supply modules, power supply redundancy mode and power usage summary. |
| | temperature | Displays module temperature thresholds and alarm status of temperature sensors. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays the status and alarm states of the clock, fan, power supply and temperature sensors.

```
switch# show environment
switch-180# show env
Clock:
-----
Clock          Model                Hw          Status
-----
A              DS-C9500-CL         0.0        ok/active
B              DS-C9500-CL         0.0        ok/standby

Fan:
-----
Fan           Model                Hw          Status
-----
Chassis      WS-9SLOT-FAN        0.0        ok
PS-1         --                   --          ok
PS-2         --                   --          ok
```

Temperature:

| Module | Sensor | MajorThresh (Celsius) | MinorThres (Celsius) | CurTemp (Celsius) | Status |
|--------|--------|--------------------------|-------------------------|----------------------|--------|
| 1 | Outlet | 75 | 60 | 38 | ok |
| 1 | Intake | 65 | 50 | 35 | ok |
| 5 | Outlet | 75 | 60 | 36 | ok |
| 5 | Intake | 65 | 50 | 36 | ok |
| 6 | Outlet | 75 | 60 | 40 | ok |
| 6 | Intake | 65 | 50 | 33 | ok |
| 9 | Outlet | 75 | 60 | 28 | ok |
| 9 | Intake | 65 | 50 | 40 | ok |

Power Supply:

| PS | Model | Power (Watts) | Power (Amp @42V) | Status |
|----|--------------|------------------|---------------------|--------|
| 1 | DS-CAC-2500W | 1153.32 | 27.46 | ok |
| 2 | WS-CAC-2500W | 1153.32 | 27.46 | ok |

| Mod | Model | Power Requested (Watts) | Power Requested (Amp @42V) | Power Allocated (Watts) | Power Allocated (Amp @42V) | Status |
|-----|-----------------|-------------------------------|----------------------------------|-------------------------------|----------------------------------|------------|
| 1 | DS-X9016 | 220.08 | 5.24 | 220.08 | 5.24 | powered-up |
| 5 | DS-X9530-SF1-K9 | 220.08 | 5.24 | 220.08 | 5.24 | powered-up |
| 6 | DS-X9530-SF1-K9 | 220.08 | 5.24 | 220.08 | 5.24 | powered-up |
| 9 | DS-X9016 | 220.08 | 5.24 | 220.08 | 5.24 | powered-up |

Power Usage Summary:

| | |
|--------------------------------------|--------------------------|
| Power Supply redundancy mode: | non-redundant (combined) |
| Total Power Capacity | 2306.64 W |
| Power reserved for Supervisor(s) [-] | 440.16 W |
| Power reserved for Fan Module(s) [-] | 210.00 W |
| Power currently used by Modules [-] | 440.16 W |
| Total Power Available | 1216.32 W |

Related Commands

| Command | Description |
|----------------------|---|
| show hardware | Displays all hardware components on a system. |

show fc2

To display fc2 information, use the **show fc2** command.

```
show fc2 {bind | classf | exchange | exchresp | flogi | nport | plogi | plogi_pwwn | port | port brief
          | socket | sockexch | socknotify | socknport | vsan}
```

| Syntax | Description |
|--------------------------|---|
| bind | Shows fc2 socket bindings. |
| classf | Shows fc2 classf sessions. |
| exchange | Shows fc2 active exchanges. |
| exchresp | Shows fc2 active responder exchanges. |
| flogi | Shows fc2 flogi table. |
| nport | Shows fc2 local Nports. |
| plogi | Shows fc2 plogi sessions. |
| plogi_pwwn | Shows fc2 plogi pwwn entries. |
| port <i>brief</i> | Shows fc2 physical port table. |
| socket | Shows fc2 active sockets. |
| sockexch | Shows fc2 active exchanges for each socket. |
| socknotify | Shows fc2 local nport plogi/logo notifications per each socket. |
| socknport | Shows fc2 local nports per each socket. |
| vsan | Shows fc2 vsan table. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```

switch# show fc2 socket
SOCKET  REFcnt  PROTOCOL  PID  RCVBUF  RMEM_USED  QLEN  NOTSK
b2a64b20  2      0      1421  65535   0          0      0
b2a647e0  3      0      1418  262142  0          0      0
b2a644a0  3      0      1417  65535   0          0      0
b2a64160  3      0      1417  262142  0          0      0
b294b180  3      0      1411  65535   0          0      0
b294ae40  3      0      1411  65535   0          0      0
b294a7c0  3      0      1410  65535   0          0      0
b294a480  2      7      1410  65535   0          0      0
b294a140  3      0      1409  262142  0          0      0
b278bb20  3      0      1409  262142  0          0      0
b278b4a0  3      0      1407  65535   0          0      0
b278b160  3      0      1407  256000  0          0      0
b278ae20  3      0      1407  65535   0          0      0
b1435b00  3      0      1408  65535   0          0      0
b1434e00  3      0      1406  65535   0          0      0
b1434ac0  3      0      1406  131072  0          0      0
b1434780  3      0      1406  65535   0          0      0
b1434440  2      0      1405  131072  0          0      0
b1434100  3      0      1405  262142  0          0  b1434440
b22e2420  2      0      1372  65535   0          0      0
...
switch# show fc2 bind
SOCKET  RULE  SINDEX  VSAN  D_ID  MASK  TYPE  SUBTYPE  M_VALUES
b23ba0c0  16  6081000  1      0      0      0  00:00:00  00:00:00:00:00:00:00:00
b2a647e0  7  ffffffff 65535  fffffd ffffff 22 03:01:00 14:15:16:00:00:00:00:00
b294b180  7  ffffffff 65535  fffffd ffffff 1  02:01:00 61:62:00:00:00:00:00:00
b294ae40  7  ffffffff 65535  fffc00 ffff00 22 01:01:00 1b:00:00:00:00:00:00:00
b294a7c0  7  ffffffff 65535  fffffd ffffff 1  01:01:00 10:00:00:00:00:00:00:00
...
switch# show fc2 nport
REF  VSAN  D_ID  MASK  FL  ST  IFINDEX  CF  TC  2-SO  IC  RC  RS  CS
EE 3-SO  IC  RC  RS  CS  EE
1  65535  fffffd ffffff 3  0  ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
6  65535  fffc00 ffff00 18b 0  ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
2  65535  fffffa ffffff 3  0  ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
1  65535  fffffc ffffff 3  0  ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
...
switch# show fc2 plogi
HIX  ADDRESS  VSAN  S_ID  D_ID  IFINDEX  FL  STATE  CF  TC  2-SO  IC  RC
RS  CS  EE 3-SO  IC  RC  RS  CS  EE  EECNT  TCCNT  2CNT  3CNT  REFCNT
2157 af364064 1  fffc6c 123400 ffffffff 0000 0  0000 0001 8000 0000 2000
0256 0001 0001 8000 0000 2000 0256 0001 0000 0  0  0  0  1
...
switch# show fc2 port
IX  ST  MODE  EMUL  TXPKTS  TXDROP  TXERR  RXPKTS  RXDROP  R_A_TOV  E_D_TOV
F-SO  RC  RS  CS  EE  2-SO  RS  3-SO  RS
0  D  1  0  0  0  0  0  0
8000 0000 2112 0001 0001 8000 0256 8000 0256
1  D  1  0  0  0  0  0  0
8000 0000 2112 0001 0001 8000 0256 8000 0256
2  D  1  0  0  0  0  0  0
8000 0000 2112 0001 0001 8000 0256 8000 0256
3  D  1  0  0  0  0  0  0
8000 0000 2112 0001 0001 8000 0256 8000 0256
4  D  1  0  0  0  0  0  0
8000 0000 2112 0001 0001 8000 0256 8000 0256
...

```

```
switch# show fc2 socknotify
SOCKET ADDRESS REF VSAN D_ID MASK FL ST IFINDEX
b2a64160 b27f01e4 6 65535 fffc00 ffff00 18b 0 ffffffff
b294a7c0 b27f01e4 6 65535 fffc00 ffff00 18b 0 ffffffff
af8a3a60 b27f01e4 6 65535 fffc00 ffff00 18b 0 ffffffff
```

```
switch# show fc2 socknport
SOCKET ADDRESS REF VSAN D_ID MASK FL ST IFINDEX
b2a64160 b27f01e4 6 65535 fffc00 ffff00 18b 0 ffffffff
b294b180 b27f0294 1 65535 fffffd ffffff 3 0 ffffffff
b294a7c0 b27f01e4 6 65535 fffc00 ffff00 18b 0 ffffffff
b278ae20 b27f0134 2 65535 fffffa ffffff 3 0 ffffffff
b1434e00 b27f0134 2 65535 fffffa ffffff 3 0 ffffffff
b1434780 b27f0084 1 65535 fffffc ffffff 3 0 ffffffff
af8a3a60 b27f01e4 6 65535 fffc00 ffff00 18b 0 ffffffff
```

```
switch# show fc2 vsan
VSAN X_ID E_D_TOV R_A_TOV WWN
1 4 2000 10000 20:01:00:05:30:00:58:1f
2 1 2000 10000 20:02:00:05:30:00:58:1f
3 1 2000 10000 20:03:00:05:30:00:58:1f
4 1 2000 10000 20:04:00:05:30:00:58:1f
5 1 2000 10000 20:05:00:05:30:00:58:1f
6 1 2000 10000 20:06:00:05:30:00:58:1f
7 1 2000 10000 20:07:00:05:30:00:58:1f
8 1 2000 10000 20:08:00:05:30:00:58:1f
9 1 2000 10000 20:09:00:05:30:00:58:1f
10 1 2000 10000 20:0a:00:05:30:00:58:1f
11 1 2000 10000 20:0b:00:05:30:00:58:1f
12 1 2000 10000 20:0c:00:05:30:00:58:1f
13 1 2000 10000 20:0d:00:05:30:00:58:1f
14 1 2000 10000 20:0e:00:05:30:00:58:1f
15 1 2000 10000 20:0f:00:05:30:00:58:1f
16 1 2000 10000 20:10:00:05:30:00:58:1f
17 1 2000 10000 20:11:00:05:30:00:58:1f
18 1 2000 10000 20:12:00:05:30:00:58:1f
```

....

show fcalias

Use the **show fcalias** command to display fcalias configuration.

```
show fcalias [name string] [active] [vsan vsan-range]
```

| Syntax Description | name <i>string</i> | Shows members of a specified fcalias |
|--------------------|-------------------------------|---|
| | active | Shows aliases which are part of active zoneset |
| | vsan <i>vsan-range</i> | Shows aliases belonging to the specified VSAN range. The VSAN ID range is from 1 to 4093. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays fcalias configuration.

```
switch# show fcalias vsan 1
fcalias name Alias2 vsan 1

fcalias name Alias1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
```

show fcanalyzer

Use the **show fcanalyzer** command to display the list of hosts configured for a remote capture.

show fcanalyzer

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines The `DEFAULT` keyword shown with an `ActiveClient` entry specifies that the default port is used in attempting the connection to the client.

Examples Displays Configured Hosts

```
switch# show fcanalyzer
PassiveClient = 10.21.0.3
PassiveClient = 10.21.0.3
ActiveClient = 10.21.0.3, DEFAULT
```


show fcc

Use the **show fcc** commands to view FCC settings.

show fcc

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples Displays Configured FCC Information

```
switch# show fcc  
fcc is disabled  
fcc is applied to frames with priority up to 4
```

show fcdomain

To show the fcdomain information, use the **show fcdomain** command.

```
show fcdomain {address-allocation [cache] | domain-list | fcd persistent | statistics | interface
| vsan [vsan-id | vsan-range]}
```

| Syntax Description | | |
|--------------------|----------------------------------|--|
| | address-allocation | Shows statistics for the fcd allocation |
| | cache | The cache is used by the principle switch to reassign the FC IDs for a device (disk or host) that exited and reentered the fabric. In the cache content, VSAN refers to the VSAN that contains the device, WWN refers to the device that owned the FC IDs, and mask refers to a single or entire area of FC IDs. |
| | domain-list | Shows list of domain ids granted by the principal sw |
| | fcd persistent | Shows persistent FCIDs (across reboot) |
| | statistics interface | Shows the statistics of fcdomain |
| | vsan vsan-id vsan-range | The ID or range of the VSAN (from 1 to 4093). |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines Issuing the **show fcdomain** with no arguments shows all VSANs. The VSANs should be active or you will get an error.

Examples

```
switch# show fcdomain vsan 1
```

The local switch is a Subordinated Switch.

Local switch run time information:

```
State: Stable
Local switch WWN: 20:01:00:05:30:00:51:1f
Running fabric name: 10:00:00:60:69:22:32:91
Running priority: 128
Current domain ID: 0x64(100) β verify domain id
```

Local switch configuration information:

```
State: Enabled
Auto-reconfiguration: Disabled
Contiguous-allocation: Disabled
Configured fabric name: 41:6e:64:69:61:6d:6f:21
Configured priority: 128
Configured domain ID: 0x64(100) (preferred)
```

Principal switch run time information:
Running priority: 2

| Interface | Role | RCF-reject |
|-----------|------------|------------|
| fc2/1 | Downstream | Disabled |
| fc2/2 | Downstream | Disabled |
| fc2/7 | Upstream | Disabled |

switch# **show fcdomain domain-list vsan 1**

Number of domains: 5

| Domain ID | WWN |
|-----------|-------------------------------------|
| 0x61(97) | 10:00:00:60:69:50:0c:fe |
| 0x62(98) | 20:01:00:05:30:00:47:9f |
| 0x63(99) | 10:00:00:60:69:c0:0c:1d |
| 0x64(100) | 20:01:00:05:30:00:51:1f [Local] |
| 0x65(101) | 10:00:00:60:69:22:32:91 [Principal] |

switch# **show fcdomain vsan 1**

The local switch is a Subordinated Switch.

Local switch run time information:

State: Stable
Local switch WWN: 20:01:00:05:30:00:47:9f
Running fabric name: 10:00:00:60:69:22:32:91
Running priority: 128
Current domain ID: 0x62(98) & verify domain

Local switch configuration information:

State: Enabled
Auto-reconfiguration: Disabled
Contiguous-allocation: Disabled
Configured fabric name: 41:6e:64:69:61:6d:6f:21
Configured priority: 128
Configured domain ID: 0x62(98) (preferred)

Principal switch run time information:

Running priority: 2

| Interface | Role | RCF-reject |
|-----------|---------------|------------|
| fc1/1 | Upstream | Disabled |
| fc1/3 | Non-principal | Disabled |
| fc1/6 | Non-principal | Disabled |

show fcdroplateny

To view the configured latency parameters, use the **show fcdroplateny** command.

```
show fcdroplateny [network | switch]
```

| Syntax Description | network | Network latency in milliseconds. |
|--------------------|---------|----------------------------------|
| | switch | Switch latency in milliseconds. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```
switch# show fcdroplateny
switch latency value:4000 milliseconds
network latency value:5000 milliseconds
```

show fcflow stats

To view the configured fcflow information, use the **show fcflow stats** command.

show fcflow stats

| Syntax Description | aggregated | Shows aggregated fcflow statistics. |
|--------------------|------------------------------------|---|
| | module <i>module-number</i> | Shows fcflow statistics for a specified module. The module number is a number from 1-9. |
| | usage | Shows flow index usage |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays aggregated fcflow details for the specified module.

```
switch# show fcflow stats aggregated module 2
Idx  VSAN # frames # bytes
----  ----  -
0000 4    387,653  674,235,875
0001 6     34,402   2,896,628
```

The following example displays fcflow details for the specified module.

```
switch# show fcflow stats module 2
Idx  VSAN D ID      S ID      mask      # frames # bytes
----  ----  -
0000 4    032.001.002  007.081.012 ff.ff.ff   387,653  674,235,875
0001 6    004.002.001  019.002.004 ff.00.00   34,402   2,896,628
```

The following example displays fcflow index usage for the specified module.

```
switch# show fcflow stats usage module 2
2 flows configured
configured flow : 3,7
```

show fcfwd

To view the configured fcfwd tables and statistics, use the **show fcfwd** command.

```
show fcfwd {idxmap [interface-toport | port-to-interface | statistics] | pemap [interface] |sfib
[multicast | statistics | unicast] | spanmap [rx | tx]}
```

| Syntax | Description |
|--------------------------|---|
| idxmap | Shows FC fwd index tables. |
| interface-to-port | Shows interface index to port index table. |
| port-to-interface | Shows port index to interface index table. |
| statistics | Shows index table statistics. |
| pemap | Shows FC fwd PortChannel table. |
| interface | Shows PortChannel table for an interface. |
| sfib | Shows software forwarding tables. |
| multicast | Shows multicast software forwarding tables. |
| statistics | Shows software forwarding statistics. |
| unicast | Shows unicast software forwarding tables. |
| spanmap | Shows spanmap tables. |
| rx | Shows spanmap table in ingress -rx direction. |
| tx | Shows spanmap table in egress -tx direction. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```
switch# show fcfwd spanmap rx
SPAN source information: size [c8]
dir source          vsan    bit    drop_thresh destination

switch# show fcfwd idxmap statistics
idxmap statistics:
```

show fcip profile

You can check the status of an interface at any time by using the **show interface** command.

show fcip profile [*profile-id*]

| Syntax Description | fcip profile | Shows the information for all FCIP profiles. |
|--------------------|-------------------|--|
| | <i>profile-id</i> | Shows the information for the specified profile from 1 to 255. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines None.

Examples The following example displays all FCIP profiles.

```
switch# show fcip profile
-----
ProfileId      Ipaddr          TcpPort
-----
1              41.1.1.2        3225
2              10.10.100.154   3225
3              43.1.1.2        3225
4              44.1.1.100      3225
6              46.1.1.2        3225
7              47.1.1.2        3225
```

The following example displays information for a specified FCIP profile.

```
switch# show fcip profile 7
FCIP Profile 7
  Internet Address is 47.1.1.2 (interface GigabitEthernet4/7)
  Listen Port is 3225
  TCP parameters
    SACK is disabled
    PMTU discovery is enabled, reset timeout is 3600 sec
    Keep alive is 60 sec
    Minimum retransmission timeout is 300 ms
    Maximum number of re-transmissions is 4
    Send buffer size is 0 KB
    Maximum allowed bandwidth is 1000000 kbps
    Minimum available bandwidth is 15000 kbps
    Estimated round trip time is 1000 usec
```

show fcns database

Use the **show fcns database** command to display the results of the discovery, or to display the name server database for a specified VSAN or for all VSANs.

```
show fcns database {detail [vsan vsan-id] | domain domain-id [detail] vsan vsan-range | fcid
fcid-id | local [detail]vsan vsan-range} | vsan vsan-id}
```

| Syntax Description | | |
|--------------------------------|--|--|
| detail | | Shows all objects in each entry. |
| vsan <i>vsan-id</i> | | Shows entries for a specified VSAN or VSANs (from 1 to 4093.). |
| domain <i>domain-id</i> | | Shows entries in a domain. |
| fcid <i>fcid-id</i> | | Shows entry for the given port. |
| local | | Shows local entries. |

Defaults None.

Command Modes EXEC mode.

Command History This command was modified in Cisco MDS SAN-OS Release 1.2(2).

Usage Guidelines The discovery can take several minutes to complete, especially if the fabric is large fabric or if several devices are slow to respond.

Virtual enclosure ports can be viewed using the **show fcns database** command.

Examples

```
switch# show fcns database
VSAN 1:
```

```
-----
FCID          TYPE  PWWN                               (VENDOR)          FC4-TYPE:FEATURE
-----
0x9c0000      N     21:00:00:e0:8b:08:96:22 (Company 1)       scsi-fcp:init
0x9c0100      N     10:00:00:05:30:00:59:1f (Company 2)       ipfc
0x9c0200      N     21:00:00:e0:8b:07:91:36 (Company 3)       scsi-fcp:init
0x9c03d6      NL    21:00:00:20:37:46:78:97 (Company 4)       scsi-fcp:target
0x9c03d9      NL    21:00:00:20:37:5b:cf:b9 (Company 4)       scsi-fcp:target
0x9c03da      NL    21:00:00:20:37:18:6f:90 (Company 4)       scsi-fcp:target
0x9c03dc      NL    21:00:00:20:37:5a:5b:27 (Company 4)       scsi-fcp:target
0x9c03e0      NL    21:00:00:20:37:36:0b:4d (Company 4)       scsi-fcp:target
0x9c03e1      NL    21:00:00:20:37:39:90:6a (Company 4)       scsi-fcp:target
0x9c03e2      NL    21:00:00:20:37:18:d2:45 (Company 4)       scsi-fcp:target
0x9c03e4      NL    21:00:00:20:37:6b:d7:18 (Company 4)       scsi-fcp:target
0x9c03e8      NL    21:00:00:20:37:38:a7:c1 (Company 4)       scsi-fcp:target
0x9c03ef      NL    21:00:00:20:37:18:17:d2 (Company 4)       scsi-fcp:target
-----
```

Total number of entries = 13

The following example displays the management VSAN (VSAN 2).

```
switch# show fcns database vsan 2
VSAN 2:
-----
FCID          TYPE  PWWN                               (VENDOR)      FC4-TYPE:FEATURE
-----
0x6d0001     N    10:00:00:05:30:00:94:9f (Cisco)      ipfc
0x6d0002     N    10:00:00:05:30:00:94:a0 (Cisco)      ipfc virtual:...c_port
0x6d0003     N    24:15:00:05:30:00:94:a0 (Cisco)      virtual:volume_owner
...
Total number of entries = 24
```

The following example displays the database for all configured VSANs.

```
switch# show fcns database
VSAN 2:
-----
FCID          TYPE  PWWN                               (VENDOR)      FC4-TYPE:FEATURE
-----
0x6d0001     N    10:00:00:05:30:00:94:9f (Cisco)      ipfc
0x6d0002     N    10:00:00:05:30:00:94:a0 (Cisco)      ipfc virtual:...c_port
0x6d0003     N    24:15:00:05:30:00:94:a0 (Cisco)      virtual:volume_owner
...
Total number of entries = 24
VSAN 3:
-----
FCID          TYPE  PWWN                               (VENDOR)      FC4-TYPE:FEATURE
-----
0x650001     N    24:0c:00:05:30:00:94:a0 (Cisco)      scsi-fcp:init vir..t
...
0x720101     NL   21:00:00:20:37:65:1c:cb (Company)    scsi-fcp
...
Total number of entries = 30
VSAN 4:
-----
FCID          TYPE  PWWN                               (VENDOR)      FC4-TYPE:FEATURE
-----
0x6b0001     N    23:26:00:05:30:00:59:20 (Cisco)      scsi-fcp:init vir..t
...
0x7800b5     NL   22:00:00:20:37:46:78:97 (Company)    scsi-fcp
...
0x780100     N    50:06:04:82:bf:d0:cf:4b (Company)      scsi-fcp 250
...
Total number of entries = 27
VSAN 5:
-----
FCID          TYPE  PWWN                               (VENDOR)      FC4-TYPE:FEATURE
-----
0x6f0001     N    23:43:00:05:30:00:59:20 (Cisco)      scsi-fcp:target vi..
...

```

Related Commands

| Command | Description |
|----------------------|---|
| asm mgmt-vsan | Displays the CPP interface configuration for a specified interface. |

show fcns statistics

Use the **show fcns statistics** command to display the statistical information for a specified VSAN or for all VSANs.

show fcns statistics [detail] vsan *vsan-range*

| | | |
|---------------------------|-------------------------------|--|
| Syntax Description | detail | Shows detailed statistics. |
| | vsan <i>vsan-range</i> | Shows statistics for the specified VSAN or VSANs (from 1 to 4093). |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```
switch# show fcns statistics
registration requests received = 27
deregistration requests received = 0
queries received = 57
queries sent = 10
reject responses sent = 14
RSCNs received = 0
RSCNs sent = 0
switch#
```

show fcroute

Use the **show fcroute** command to view specific information about existing Fibre Channel and FSPF configurations.

```
show fcroute [distance | label [label] vsan vsan-id | multicast vsan vsan-id | summary vsan
vsan-id | unicast fc-id vsan vsan-id | unicast vsan vsan-id]
```

| Syntax Description | | |
|----------------------------|--|--------------------------------------|
| distance | | Shows FC route preference. |
| label | | Shows label routes. |
| multicast | | Shows FC multicast routes. |
| summary | | Shows FC routes summary. |
| unicast | | Shows FC unicast routes. |
| vsan <i>vsan-id</i> | | The ID of the VSAN (from 1 to 4093). |
| <i>fcid-id</i> | | The Fibre Channel ID. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines When the number of routes are displayed in the command output, both visible and hidden routes are included in the total number of routes.

Examples The following example displays administrative distance.

```
switch# show fcroute distance
```

| UUID | Route Distance | Name |
|------|----------------|------------|
| 10 | 20 | RIB |
| 22 | 40 | FCDOMAIN |
| 39 | 80 | RIB-CONFIG |
| 12 | 100 | FSPF |
| 17 | 120 | FLOGI |
| 21 | 140 | TLPM |
| 14 | 180 | MCAST |
| 64 | 200 | RIB-TEST |

The following example displays multicast routing information.

```
switch# show fcroute multicast
VSAN FC ID    # Interfaces
-----
1      0xffffffff 0
2      0xffffffff 1
3      0xffffffff 1
4      0xffffffff 0
5      0xffffffff 0
6      0xffffffff 0
7      0xffffffff 0
8      0xffffffff 0
9      0xffffffff 0
10     0xffffffff 0
```

The following example displays FCID information for a specified VSAN.

```
switch# show fcroute multicast vsan 3

VSAN FC ID    # Interfaces
-----
3      0xffffffff 1
```

The following example displays FCID and interface information for a specified VSAN.

```
switch# show fcroute multicast 0xffffffff vsan 2

VSAN FC ID    # Interfaces
-----
2      0xffffffff 1
      fc1/1
```

The following example displays unicast routing information.

```
switch# show fcroute unicast
D:direct R:remote P:permanent V:volatile A:active N:non-active
# Next
Protocol VSAN    FC ID/Mask      Rctl/Mask  Flags  Hops  Cost
-----
static   1      0x010101 0xffffffff 0x00 0x00 D P A 1    10
static   2      0x111211 0xffffffff 0x00 0x00 R P A 1    10
fspf     2      0x730000 0xff0000 0x00 0x00 D P A 4    500
fspf     3      0x610000 0xff0000 0x00 0x00 D P A 4    500
static   4      0x040101 0xffffffff 0x00 0x00 R P A 1    103
static   4      0x040102 0xffffffff 0x00 0x00 R P A 1    103
static   4      0x040103 0xffffffff 0x00 0x00 R P A 1    103
static   4      0x040104 0xffffffff 0x00 0x00 R P A 1    103
static   4      0x111211 0xffffffff 0x00 0x00 D P A 1    10
```

The following example displays unicast routing information for a specified VSAN.

```
switch# show fcroute unicast vsan 4

D:direct R:remote P:permanent V:volatile A:active N:non-active
# Next
Protocol VSAN    FC ID/Mask      Rctl/Mask  Flags  Hops  Cost
-----
static   4      0x040101 0xffffffff 0x00 0x00 R P A 1    103
static   4      0x040102 0xffffffff 0x00 0x00 R P A 1    103
static   4      0x040103 0xffffffff 0x00 0x00 R P A 1    103
static   4      0x040104 0xffffffff 0x00 0x00 R P A 1    103
static   4      0x111211 0xffffffff 0x00 0x00 D P A 1    10
```

The following example displays unicast routing information for a specified FCID.

```
switch# show fcroute unicast 0x040101 0xffffffff vsan 4

D:direct R:remote P:permanent V:volatile A:active N:non-active
# Next
Protocol VSAN    FC ID/Mask      Rctl/Mask  Flags  Hops  Cost
-----
static   4      0x040101 0xffffffff 0x00 0x00 R P A 1      103
fc1/2 Domain 0xa6(166)
```

The following example displays route database information.

```
switch# show fcroute summary

FC route database created Tue Oct 29 01:24:23 2002
VSAN    Ucast    Mcast    Label    Last Modified Time
-----
1       2        1        0        Tue Oct 29 18:07:02 2002
2       3        1        0        Tue Oct 29 18:33:24 2002
3       2        1        0        Tue Oct 29 18:10:07 2002
4       6        1        0        Tue Oct 29 18:31:16 2002
5       1        1        0        Tue Oct 29 01:34:39 2002
6       1        1        0        Tue Oct 29 01:34:39 2002
7       1        1        0        Tue Oct 29 01:34:39 2002
8       1        1        0        Tue Oct 29 01:34:39 2002
9       1        1        0        Tue Oct 29 01:34:39 2002
10      1        1        0        Tue Oct 29 01:34:39 2002
Total   19       10       0
```

The following example displays route database information for a specified VSAN.

```
switch# show fcroute summary vsan 4

FC route database created Tue Oct 29 01:24:23 2002
VSAN    Ucast    Mcast    Label    Last Modified Time
-----
4       6        1        0        Tue Oct 29 18:31:16 2002
Total   6        1        0
```

show fcs

Use the **show fcs** commands to display the status of the fabric configuration.

```
show fcs {database vsan vsan-range | ie [nwwn wwn vsan vsan-range | vsan vsan-range] |
platform [name string vsan vsan-range | vsan vsan-range] | port [pwwn wwn vsan
vsan-range | vsan vsan-range] | statistics vsan vsan-range | vsan}
```

| Syntax Description | Parameter | Description |
|--------------------|-------------------|---|
| | database | Shows local database of FCS. |
| | ie | Shows Interconnect Element Objects Information. |
| | platform | Shows Platform Objects Information. |
| | port | Shows Port Objects Information. |
| | statistics | Shows statistics for FCS packets. |
| | vsan | Shows list of all the VSANs and plat-check-mode for each. |
| | <i>vsan-range</i> | Range of the required VSANs (from 1 to 4093) |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays FCS database information.

```
switch# show fcs database

FCS Local Database in VSAN: 1
-----
Switch WWN                : 20:01:00:05:30:00:16:df
Switch Domain Id         : 0x7f(127)
Switch Mgmt-Addresses    : snmp://172.22.92.58/eth-ip
                        : http://172.22.92.58/eth-ip
Fabric-Name              : 20:01:00:05:30:00:16:df
Switch Logical-Name      : 172.22.92.58
Switch Information List   : [Cisco Systems*DS-C9509*0*20:00:00:05:30:00
Switch Ports:
-----
Interface  pWWN                Type      Attached-pWWNs
-----
fc2/1      20:41:00:05:30:00:16:de  TE        20:01:00:05:30:00:20:de
fc2/2      20:42:00:05:30:00:16:de  Unknown   None
fc2/17     20:51:00:05:30:00:16:de  TE        20:0a:00:05:30:00:20:de
```

```

FCS Local Database in VSAN: 5
-----
Switch WWN                : 20:05:00:05:30:00:12:5f
Switch Domain Id          : 0xef(239)
Switch Mgmt-Addresses     : http://172.22.90.171/eth-ip
                          : snmp://172.22.90.171/eth-ip
                          : http://10.10.15.10/vsan-ip
                          : snmp://10.10.15.10/vsan-ip
Fabric-Name                : 20:05:00:05:30:00:12:5f
Switch Logical-Name       : 172.22.90.171
Switch Information List    : [Cisco Systems*DS-C9509**20:00:00:05:30:00:12:5e]
Switch Ports:
-----
Interface  pWWN                Type      Attached-pWWNs
-----
fc3/1      20:81:00:05:30:00:12:5e  TE        22:01:00:05:30:00:12:9e
fc3/2      20:82:00:05:30:00:12:5e  TE        22:02:00:05:30:00:12:9e
fc3/3      20:83:00:05:30:00:12:5e  TE        22:03:00:05:30:00:12:9e

```

The following example displays Interconnect Element object information for a specific VSAN.

```

switch# show fcs ie vsan 1

IE List for VSAN: 1
-----
IE-WWN                IE-Type                Mgmt-Id
-----
20:01:00:05:30:00:16:df  Switch (Local)         0xffffc7f
20:01:00:05:30:00:20:df  Switch (Adjacent)     0xffffc64
[Total 2 IEs in Fabric]

```

This command displays Interconnect Element object information for a specific WWN.

```

switch# show fcs ie nwnn 20:01:00:05:30:00:16:df vsan 1
IE Attributes
-----
Domain-Id = 0x7f(127)
Management-Id = 0xffffc7f
Fabric-Name = 20:01:00:05:30:00:16:df
Logical-Name = 172.22.92.58
Management Address List =
    snmp://172.22.92.58/eth-ip
    http://172.22.92.58/eth-ip
Information List:
    Vendor-Name = Cisco Systems
    Model Name/Number = DS-C9509
    Release-Code = 0

```

This command displays platform information.

```

switch# show fcs platform name SamplePlatform vsan 1
Platform Attributes
-----
Platform Node Names:
    11:22:33:44:55:66:77:88
Platform Type = Gateway
Platform Management Addresses:
    1.1.1.1

```

This command displays platform information within a specified VSAN.

```
switch# show fcs platform vsan 1
Platform List for VSAN: 1
Platform-Names
-----
SamplePlatform
[Total 1 Platforms in Fabric]
```

This command displays FCS port information within a specified VSAN.

```
switch# show fcs port vsan 24
Port List in VSAN: 24
-- IE WWN: 20:18:00:05:30:00:16:df --
-----
Port-WWN                Type      Module-Type      Tx-Type
-----
20:41:00:05:30:00:16:de  TE_Port   SFP with Serial Id  Shortwave Laser
20:51:00:05:30:00:16:de  TE_Port   SFP with Serial Id  Shortwave Laser

[Total 2 switch-ports in IE]
-- IE WWN: 20:18:00:05:30:00:20:df --
-----
Port-WWN                Type      Module-Type      Tx-Type
-----
20:01:00:05:30:00:20:de  TE_Port   SFP with Serial Id  Shortwave Laser
20:0a:00:05:30:00:20:de  TE_Port   SFP with Serial Id  Shortwave Laser

[Total 2 switch-ports in IE]
```

This command displays ports within a specified WWN.

```
switch# show fcs port pwwn 20:51:00:05:30:00:16:de vsan 24
Port Attributes
-----
Port Type = TE_Port
Port Number = 0x1090000
Attached-Port-WWNs:
    20:0a:00:05:30:00:20:de
Port State = Online
```


This command displays FCS statistics.

```
switch# show fcs statistics
```

```
FCS Statistics for VSAN: 1
```

```
-----  
FCS Rx Get Reqs    :2  
FCS Tx Get Reqs    :7  
FCS Rx Reg Reqs    :0  
FCS Tx Reg Reqs    :0  
FCS Rx Dereg Reqs  :0  
FCS Tx Dereg Reqs  :0  
FCS Rx RSCNs       :0  
FCS Tx RSCNs       :3  
FCS Rx RJTs        :3  
FCS Tx RJTs        :0  
FCS Rx ACCs        :4  
FCS Tx ACCs        :2  
FCS No Response    :0  
FCS Retransmit     :0
```

```
FCS Statistics for VSAN: 30
```

```
-----  
FCS Rx Get Reqs    :2  
FCS Tx Get Reqs    :2  
FCS Rx Reg Reqs    :0  
FCS Tx Reg Reqs    :0  
FCS Rx Dereg Reqs  :0  
FCS Tx Dereg Reqs  :0  
FCS Rx RSCNs       :0  
FCS Tx RSCNs       :0  
FCS Rx RJTs        :0  
FCS Tx RJTs        :0  
FCS Rx ACCs        :2  
FCS Tx ACCs        :2  
FCS No Response    :0  
FCS Retransmit     :0
```

show fctimer

To view the Fibre Channel timers, use the **show fctimer** command.

```
show fctimer [D_S_TOV | E_D_TOV | F_S_TOV | R_A_TOV]
```

| Syntax Description | D_S_TOV | D_S_TOV in milliseconds |
|--------------------|---------|-------------------------|
| | E_D_TOV | E_D_TOV in milliseconds |
| | F_S_TOV | F_S_TOV in milliseconds |
| | R_A_TOV | R_A_TOV in milliseconds |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```
switch# show fctimer
F_S_TOV : 5000 milliseconds
D_S_TOV : 5000 milliseconds
E_D_TOV : 2000 milliseconds
R_A_TOV : 10000 milliseconds
```

show fc-tunnel

To view configured Fibre Channel tunnel information, use the **show fc-tunnel** command.

```
show fc-tunnel [ explicit-path ( name ) | tunnel-id-map ]
```

| Syntax Description | fc-tunnel | Displays the configured state of the FC tunnel feature |
|--------------------|----------------------|--|
| | explicit-path | Displays all configured explicit paths. |
| | <i>name</i> | Displays the specified explicit path. |
| | tunnel-id-map | Displays the mapping information for the outgoing interface. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines Multiple tunnel IDs can terminate at the same interface.

Examples The following example displays the FC tunnel status

```
switch# show fc-tunnel
fc-tunnel is enabled
```

The following example displays the FC tunnel egress mapping information.

```
switch# show fc-tunnel tunnel-id-map
tunnel id egress interface
    150    fc3/1
    100    fc3/1
```

The following example displays explicit mapping information of the FC tunnel.

```
switch# show fc-tunnel explicit-path
Explicit path name: Alternatel
    10.20.1.2 loose
    10.20.1.3 strict
Explicit path name: User2
    10.20.50.1 strict
    10.20.50.4 loose
```

show file

To display the contents of a specified file in the file system, use the **show file** command.

show file *filename*

| | | |
|---------------------------|-----------------|--|
| Syntax Description | <i>filename</i> | The name of the file for which you want to display contents. |
|---------------------------|-----------------|--|

| | |
|-----------------|-------|
| Defaults | None. |
|-----------------|-------|

| | |
|----------------------|------------|
| Command Modes | EXEC mode. |
|----------------------|------------|

| | |
|------------------------|---|
| Command History | This command was introduced in Cisco MDS SAN-OS Release 1.0(2). |
|------------------------|---|

| | |
|-------------------------|-------|
| Usage Guidelines | None. |
|-------------------------|-------|

| | |
|-----------------|---|
| Examples | The following example displays the contents of the test file that resides in the slot0 directory. |
|-----------------|---|

```
switch# show file slot0:test
config t
Int fc1/1
no shut
end
show int
```

The following example displays the contents of a file residing in the current directory.

```
switch# show file myfile
```

show flogi database

To list all the flogi sessions through all interfaces across all vsans, use the **show flogi database** command.

show flogi database [**fcid** *fcid-id* | **interface** *interface* | **vsan** *vsan-id*]

| Syntax Description | Parameter | Description |
|--------------------|------------------|--|
| | fcid | Optional - filters flogi based on the fcid allocated. |
| | interface | Optional - filters flogi based on the logged in interface. |
| | vsan | Optional - filters flogi based on the vsan. |
| | <i>vsan-id</i> | The ID of the VSAN is from 1 to 4093. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines Output of this command is first sorted on interface and then on vsans.

In a Fibre Channel fabric, each host or disk requires an FC ID. Use the **show flogi** command to verify if a storage device is displayed in the Fabric login (FLOGI) table as in the examples below. If the required device is displayed in the FLOGI table, the fabric login is successful. Examine the flogi database on a switch that is directly connected to the host HBA and connected ports.

Examples This command displays details on the FLOGI database.

```
switch# show flogi database
-----
INTERFACE  VSAN    FCID          PORT NAME          NODE NAME
-----
sup-fc0    2       0xb30100     10:00:00:05:30:00:49:63  20:00:00:05:30:00:49:5e
fc9/13     1       0xb200e2     21:00:00:04:cf:27:25:2c  20:00:00:04:cf:27:25:2c
fc9/13     1       0xb200e1     21:00:00:04:cf:4c:18:61  20:00:00:04:cf:4c:18:61
fc9/13     1       0xb200d1     21:00:00:04:cf:4c:18:64  20:00:00:04:cf:4c:18:64
fc9/13     1       0xb200ce     21:00:00:04:cf:4c:16:fb  20:00:00:04:cf:4c:16:fb
fc9/13     1       0xb200cd     21:00:00:04:cf:4c:18:f7  20:00:00:04:cf:4c:18:f7

Total number of flogi = 6.
```

This command displays the FLOGI interface.

```
switch# show flogi database interface fc1/11
INTERFACE      VSAN    FCID      PORT NAME      NODE NAME
-----
fc9/13         1 0xa002ef 21:00:00:20:37:18:17:d2 20:00:00:20:37:18:17:d2
fc9/13         1 0xa002e8 21:00:00:20:37:38:a7:c1 20:00:00:20:37:38:a7:c1
fc9/13         1 0xa002e4 21:00:00:20:37:6b:d7:18 20:00:00:20:37:6b:d7:18
fc9/13         1 0xa002e2 21:00:00:20:37:18:d2:45 20:00:00:20:37:18:d2:45
fc9/13         1 0xa002e1 21:00:00:20:37:39:90:6a 20:00:00:20:37:39:90:6a
fc9/13         1 0xa002e0 21:00:00:20:37:36:0b:4d 20:00:00:20:37:36:0b:4d
fc9/13         1 0xa002dc 21:00:00:20:37:5a:5b:27 20:00:00:20:37:5a:5b:27
fc9/13         1 0xa002da 21:00:00:20:37:18:6f:90 20:00:00:20:37:18:6f:90
fc9/13         1 0xa002d9 21:00:00:20:37:5b:cf:b9 20:00:00:20:37:5b:cf:b9
fc9/13         1 0xa002d6 21:00:00:20:37:46:78:97 20:00:00:20:37:46:78:97
```

Total number of flogi = 10.

This command displays the FLOGI VSAN.

```
switch# show flogi database vsan 1
-----
INTERFACE      VSAN    FCID      PORT NAME      NODE NAME
-----
fc9/13         1 0xef02ef 22:00:00:20:37:18:17:d2 20:00:00:20:37:18:17:d2
fc9/13         1 0xef02e8 22:00:00:20:37:38:a7:c1 20:00:00:20:37:38:a7:c1
fc9/13         1 0xef02e4 22:00:00:20:37:6b:d7:18 20:00:00:20:37:6b:d7:18
fc9/13         1 0xef02e2 22:00:00:20:37:18:d2:45 20:00:00:20:37:18:d2:45
fc9/13         1 0xef02e1 22:00:00:20:37:39:90:6a 20:00:00:20:37:39:90:6a
fc9/13         1 0xef02e0 22:00:00:20:37:36:0b:4d 20:00:00:20:37:36:0b:4d
fc9/13         1 0xef02dc 22:00:00:20:37:5a:5b:27 20:00:00:20:37:5a:5b:27
fc9/13         1 0xef02da 22:00:00:20:37:18:6f:90 20:00:00:20:37:18:6f:90
fc9/13         1 0xef02d9 22:00:00:20:37:5b:cf:b9 20:00:00:20:37:5b:cf:b9
fc9/13         1 0xef02d6 22:00:00:20:37:46:78:97 20:00:00:20:37:46:78:97
```

Total number of flogi = 10.

This command displays the FLOGI FCID.

```
switch# show flogi database fcid 0xef02e2
-----
INTERFACE      VSAN    FCID      PORT NAME      NODE NAME
-----
fc9/13         1 0xef02e2 22:00:00:20:37:18:d2:45 20:00:00:20:37:18:d2:45
```

Total number of flogi = 1.

Related Commands

| Command | Description |
|---------------------------|--|
| show fcns database | Shows all the local and remote name server entries |

show fspf

To display global FSPF information, use the **show fspf** command. This information includes:

- the domain number of the switch
- the autonomous region for the switch
- Min_LS_arrival: the minimum time that must elapse before the switch accepts LSR updates
- Min_LS_interval: the minimum time that must elapse before the switch can transmit an LSR
- LS_refresh_time: the interval lapse between refresh LSR transmissions
- Max_age: the maximum time aa LSR can stay before being deleted

show fspf database [vsan vsan-id] [domain domain-id [detail]]

show fspf interface

show fspf [vsan vsan-id] [interface [interface range]]

Syntax Description

| | |
|-----------------------------------|---|
| database | To display information of fspf database for a VSAN. If no other parameters are given all the LSRs in the database are displayed. If more specific information is required then the domain number of the owner of the LSR may be given. Detail gives more detailed information on each LSR. |
| domain <i>domain-id</i> | The domain of the database. The parameter <i>domain_num</i> is unsigned integers in the range 0-255. |
| interface <i>interface</i> | Display FSPF interface information for a given VSAN. If the interface number is specified information on the neighbor on that interface is displayed. If no interface is specified information on all interfaces are displayed. The parameter <i>interface_range</i> is of the format fcslot/port - fcslot/port |
| vsan | Specifies the VSAN. |
| <i>vsan-id</i> | The ID of the VSAN is from 1 to 4093. |

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

```
switch# show fspf vsan 1 interface fc 2/14
FSPF interface fc2/14 in VSAN 1
FSPF routing administrative state is active
Interface cost is 500
Timer intervals configured, Hello 20 s, Dead 80 s, Retransmit 5 s
FSPF State is FULL
Neighbor Domain Id is 0x03(3), Neighbor Interface index is 0x0001060d

Statistics counters :
  Number of packets received :LSU 184 LSA 184 Hello 5477 Error packets 0
  Number of packets transmitted :LSU 184 LSA 184 Hello 5478 Retransmitted
LSU 0
  Number of times inactivity timer expired for the interface = 0
```

The following example displays FSPF interface information.

```
switch# show fspf interface vsan 1 fc1/1
FSPF interface fc1/1 in VSAN 1
FSPF routing administrative state is active
Interface cost is 500
Timer intervals configured, Hello 20 s, Dead 80 s, Retransmit 5 s
FSPF State is FULL
Neighbor Domain Id is 0x0c(12), Neighbor Interface index is 0x0f100000

Statistics counters :
  Number of packets received : LSU 8 LSA 8 Hello 118 Error packets 0
  Number of packets transmitted : LSU 8 LSA 8 Hello 119 Retransmitted LSU
0
  Number of times inactivity timer expired for the interface = 0
```

The following example displays FSPF database information.

```
switch# show fspf database vsan 1

FSPF Link State Database for VSAN 1 Domain 0x0c(12)
LSR Type = 1
Advertising domain ID = 0x0c(12)
LSR Age = 1686
LSR Incarnation number = 0x80000024
LSR Checksum = 0x3caf
Number of links = 2
  NbrDomainId      IfIndex  NbrIfIndex  Link Type      Cost
-----
  0x65(101) 0x0000100e  0x00001081  1              500
  0x65(101) 0x0000100f  0x00001080  1              500

FSPF Link State Database for VSAN 1 Domain 0x65(101)
LSR Type = 1
Advertising domain ID = 0x65(101)
LSR Age = 1685
LSR Incarnation number = 0x80000028
LSR Checksum = 0x8443
Number of links = 6
  NbrDomainId      IfIndex  NbrIfIndex  Link Type      Cost
-----
  0xc3(195) 0x00001085  0x00001095  1              500
  0xc3(195) 0x00001086  0x00001096  1              500
  0xc3(195) 0x00001087  0x00001097  1              500
  0xc3(195) 0x00001084  0x00001094  1              500
  0x0c(12) 0x00001081  0x0000100e  1              500
  0x0c(12) 0x00001080  0x0000100f  1              500
```



```

FSPF Link State Database for VSAN 1 Domain 0xc3(195)
LSR Type = 1
Advertising domain ID = 0xc3(195)
LSR Age = 1686
LSR Incarnation number = 0x80000033
LSR Checksum = 0x6799
Number of links = 4

```

| NbrDomainId | IfIndex | NbrIfIndex | Link Type | Cost |
|-------------|------------|------------|-----------|------|
| 0x65(101) | 0x00001095 | 0x00001085 | 1 | 500 |
| 0x65(101) | 0x00001096 | 0x00001086 | 1 | 500 |
| 0x65(101) | 0x00001097 | 0x00001087 | 1 | 500 |
| 0x65(101) | 0x00001094 | 0x00001084 | 1 | 500 |

This command displays FSPF information for a specified VSAN.

```

switch# show fspf vsan 1
FSPF routing for VSAN 1
FSPF routing administration status is enabled
FSPF routing operational status is UP
It is an intra-domain router
Autonomous region is 0
SPF hold time is 0 msec
MinLsArrival = 1000 msec , MinLsInterval = 5000 msec
Local Domain is 0x65(101)
Number of LSRs = 3, Total Checksum = 0x0001288b

Protocol constants :
  LS_REFRESH_TIME = 1800 sec
  MAX_AGE          = 3600 sec

Statistics counters :
  Number of LSR that reached MaxAge = 0
  Number of SPF computations        = 7
  Number of Checksum Errors         = 0
  Number of Transmitted packets :   LSU 65 LSA 55 Hello 474 Retranmsitted LSU 0
  Number of received packets :     LSU 55 LSA 60 Hello 464 Error packets 10

```

show hardware

Use the **show hardware** command to display switch hardware inventory details.

show hardware [ipc-channel status]

| Syntax Description | ipc-channel | Identifies the interprocess communication (IPC) channels. |
|--------------------|-------------|---|
| | status | Displays the status of the IPC channels. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines None.

Examples

```
switch# show hardware
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support:http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc. All rights reserved.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.

Software
  BIOS:      version 0.0.0
  loader:    version 1.0(0.259)
  kickstart:version 1.0(2) [build 1.0(0.280)]
  system:    version 1.0(2) [build 1.0(0.280)]

  BIOS compile time:      10/10/02
  kickstart image file is:bootflash:/boot-280
  kickstart compile time: 11/20/2002 6:00:00
  system image file is:   isan-280
  system compile time:    11/20/2002 6:00:00

Hardware
  RAM 963108 kB

  bootflash:503808 blocks (block size 512b)
  slot0:          0 blocks (block size 512b)

172.22.92.28 uptime is 0 days 0 hour 31 minute(s) 23 second(s)

Last reset
  Reason:Watchdog Timeout/External Reset
  System version:1.0(2)
```

```
This supervisor carries Pentium processor with 963108 kB of memory
Intel(R) Pentium(R) III CPU at 800MHz with 512 KB L2 Cache
Rev:Family 6, Model 11 stepping 1
```

```
512K bytes of non-volatile memory.
503808 blocks of internal bootflash (block size 512b)
```

Displays the status of the IPC channel:

```
switch# show hardware ipc-channel status
Active IPC-Channel:          A
```

show hosts

Use the **show hosts** command to display configured DNS host configuration details details.

show hosts

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays the configured hosts including the default domain, domain list, and name servers.

```
switch# show hosts
Default domain is cisco.com
Domain list: ucsc.edu harvard.edu yale.edu stanford.edu
Name/address lookup uses domain service
Name servers are 15.1.0.1 15.2.0.0
```

show incompatibility

To display the HA compatibility status between the two supervisor modules, use the **show incompatibility** command.

```
show incompatibility [ system ( bootflash: | slot0: | volatile: ) image-filename]
```

| | | |
|---------------------------|-----------------------------|--|
| Syntax Description | show incompatibility | Displays the switch configuration incompatibilities. |
| | bootflash: | Source or destination location for internal bootflash memory |
| | slot0: | Source or destination location for the CompactFlash memory or PCMCIA card. |
| | volatile: | Source or destination location for the volatile directory. |
| | <i>image-filename</i> | The name of the system or kickstart image. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

If the HA compatibility is `strict` on an active supervisor module, the standby supervisor module synchronization may not succeed and may move into an inconsistent state.

If the HA compatibility is `loose`, the synchronization may happen without errors, but some resources may become unusable when a switchover happens.

Examples The following examples display kernel core settings.

```
switch# show incompatibility system bootflash:old-image-y
The following configurations on active are incompatible with the system image
1) Feature Index : 67 , Capability : CAP_FEATURE_SPAN_FC_TUNNEL_CFG
Description : SPAN - Remote SPAN feature using fc-tunnels
Capability requirement : STRICT
2) Feature Index : 119 , Capability : CAP_FEATURE_FC_TUNNEL_CFG
Description : fc-tunnel is enabled
Capability requirement : STRICT
```

show install all impact

To view the software compatibility matrix of a specific image, use the **show install all impact** command.

show install all impact *image-filename* [**bootflash:** | **slot0:**]

| | | |
|---------------------------|-----------------------|---|
| Syntax Description | <i>image-filename</i> | The name of the system or kickstart image. |
| | bootflash: | Source location for internal bootflash memory |
| | slot0: | Source location for the CompactFlash memory or PCMCIA card. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines None.

Examples Use the **show install all impact** command to view the effect of updating the system from the running image to another specified image.

```
switch# show install all impact

Verifying image bootflash:/ilc1.bin
[#####] 100% -- SUCCESS

Verifying image bootflash:/vk73a
[#####] 100% -- SUCCESS

Verifying image bootflash:/vs73a
[#####] 100% -- SUCCESS

Extracting "slc" version from image bootflash:/vs73a.
[#####] 100% -- SUCCESS

Extracting "slc" version from image bootflash:/vs73a.
[#####] 100% -- SUCCESS

Extracting "system" version from image bootflash:/vs73a.
[#####] 100% -- SUCCESS

Extracting "kickstart" version from image bootflash:/vk73a.
[#####] 100% -- SUCCESS

Extracting "loader" version from image bootflash:/vk73a.
[#####] 100% -- SUCCESS
```

```
Extracting "slc" version from image bootflash:/vs73a.
[#####] 100% -- SUCCESS
```

Compatibility check is done:

| Module | bootable | Impact | Install-type | Reason |
|--------|----------|----------------|--------------|--------|
| 2 | yes | non-disruptive | none | |
| 4 | yes | non-disruptive | none | |
| 6 | yes | non-disruptive | none | |
| 9 | yes | non-disruptive | none | |

Images will be upgraded according to following table:

| Module | Image | Running-Version | New-Version | Upg-Required |
|--------|-----------|------------------|------------------|--------------|
| 2 | slc | 1.2(1) | 1.2(1) | no |
| 2 | bios | v1.0.7(03/20/03) | v1.0.7(03/20/03) | no |
| 4 | slc | 1.2(1) | 1.2(1) | no |
| 4 | ilce | 1.2(1) | 1.2(1) | no |
| 4 | bios | v1.0.7(03/20/03) | v1.0.7(03/20/03) | no |
| 6 | system | 1.2(1) | 1.2(1) | no |
| 6 | kickstart | 1.2(1) | 1.2(1) | no |
| 6 | bios | v1.0.7(03/20/03) | v1.0.7(03/20/03) | no |
| 6 | loader | 1.0(3a) | 1.0(3a) | no |
| 9 | slc | 1.2(1) | 1.2(1) | no |
| 9 | bios | v1.0.7(03/20/03) | v1.0.7(03/20/03) | no |

The following command displays the error message that is displayed if a wrong image is provided.

```
switch# show install all impact system_image bootflash:
Compatibility check failed. Return code 0x40930003 (Invalid bootvar specified in
the input).
```

show in-order-gaurantee

Use the **show in-order-gaurantee** command to display the present configured state of the in-order delivery feature.

show in-order-gaurantee

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays the present configuration status of the in-order delivery feature.

```
switch# show in-order-guarantee  
inorder delivery is not guaranteed
```


show interface

You can check the status of an interface at any time by using the **show interface** command.

show interface

fc slot/port | **fc-tunnel tunnel-id** | **fcip interface-number** | **gigabitethernet** | **iscsi** | **mgmt** | **port-channel** | **sup-fc** | **transceiver** | **trunk vsan [vsan-id]** | **vsan vsan-id [interface range]** [**brief** | **counters** | **description**]

| Syntax | Description |
|----------------------------------|--|
| <i>interface range</i> | Displays the interfaces in the specified range. |
| brief | Displays brief info of interface. |
| counters | Displays the interface counter information. |
| description | Displays a description of interface. |
| fc slot/port | Displays the Fibre Channel interface in the specified slot/port. |
| fc-tunnel tunnel-id | Displays description of the specified FC tunnel from 1 to 4095. |
| fcip interface-number | Displays the description of the specified FCIP interface from 1 to 255. |
| gigabitethernet slot/port | Displays the description of the Gigabit Ethernet interface in the specified slot/ port. |
| iscsi slot/port | Displays the description of the iSCSI interface in the specified slot/ port. |
| mgmt | Displays the description of the management interface. |
| port-channel | Displays the description of the PortChannel interface. |
| sup-fc | Displays the inband interface details. |
| transceiver | Displays the transceiver information for interface. |
| trunk vsan | Displays the the trunking status of all VSANs. |
| <i>vsan-id</i> | Displays the the trunking status of the specified VSANs. |
| vsan vsan-id | Displays the VSAN interface (brief, counters, or description for a specified interface or a range of interfaces) |

Defaults None.

Command Modes EXEC

Command History This command was modified in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines None.

Examples

```

switch# show interface fc1/11
fc1/11 is up
  Hardware is Fibre Channel
  Port WWN is 20:0b:00:05:30:00:59:de
  Admin port mode is ST
  Port mode is ST
  Port vsan is 1
  Speed is 1 Gbps
  Rspan tunnel is fc-tunnel 100
  Beacon is turned off
  5 minutes input rate 248 bits/sec, 31 bytes/sec, 0 frames/sec
  5 minutes output rate 176 bits/sec, 22 bytes/sec, 0 frames/sec
    6862 frames input, 444232 bytes
      0 discards, 0 errors
      0 CRC, 0 unknown class
      0 too long, 0 too short
    6862 frames output, 307072 bytes
      0 discards, 0 errors
      0 input OLS, 0 LRR, 0 NOS, 0 loop inits
      0 output OLS, 0 LRR, 0 NOS, 0 loop inits

switch# show int sup-fc0
sup-fc0 is up
  Hardware is FastEthernet, address is 0000.0000.0000
  MTU 2596 bytes, BW 1000000 Kbit
  66 packets input, 7316 bytes
  Received 0 multicast frames, 0 compressed
  0 input errors, 0 frame, 0 overrun 0 fifo
  64 packets output, 28068 bytes, 0 underruns
  0 output errors, 0 collisions, 0 fifo
  0 carrier errors

switch# show int vsan 2
vsan2 is up, line protocol is up
  WWPN is 10:00:00:05:30:00:59:1f, FCID is 0xb90100
  Internet address is 10.1.1.1/24
  MTU 1500 bytes, BW 1000000 Kbit
  0 packets input, 0 bytes, 0 errors, 0 multicast
  0 packets output, 0 bytes, 0 errors, 0 dropped

switch# show interface description
fc1/1
  no description
fc1/2
  no description
fc1/15
fcAn1

sup-fc0 is up

mgmt0 is up

vsan1 - IPFC interface

port-channel 15
no description

port-channel 98
no description

```

```
switch# show interface fc2/1 - 5 brief
```

```
-----
Interface Vsan Admin Admin Status Oper Oper Port-channel
          Mode Trunk Mode Mode Speed
          Mode (Gbps)
-----
fc1/1 1 auto on down -- -- --
fc1/2 1 auto on fcotAbsent -- -- --
fc1/3 1 F -- notConnected -- -- --
fc1/4 1 auto on fcotAbsent -- -- --
fc1/5 1 F -- up F 2 --
fc1/6 1 auto on fcotAbsent -- -- --
fc1/7 1 auto on down -- -- --
fc1/8 1 auto on fcotAbsent -- -- --
fc1/9 1 auto on fcotAbsent -- -- --
fc1/10 1 auto on fcotAbsent -- -- --
fc1/11 1 auto on down -- -- --
fc1/12 1 auto on fcotAbsent -- -- --
fc1/13 1 auto on down -- -- --
fc1/14 1 auto on fcotAbsent -- -- --
fc1/15 1 auto on down -- -- --
fc1/16 1 auto on fcotAbsent -- -- --
-----
```

```
-----
Interface Status IP Address Speed MTU
-----
sup-fc0 up -- 1 Gbps 2596
-----
```

```
-----
Interface Status IP Address Speed MTU
-----
mgmt0 up 173.95.112/24 100 Mbps 1500
-----
```

```
-----
Interface Status IP Address Speed MTU
-----
vsan1 up 10.1.1.1/24 1 Gbps 1500
-----
```

```
switch# show interface fcip 3 counters
```

```
fcip3
```

```
TCP Connection Information
```

```
2 Active TCP connections
```

```
Control connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65532
```

```
Data connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65534
```

```
30 Attempts for active connections, 0 close of connections
```

```
TCP Parameters
```

```
Path MTU 1500 bytes
```

```
Current retransmission timeout is 300 ms
```

```
Round trip time: Smoothed 10 ms, Variance: 5
```

```
Advertized window: Current: 122 KB, Maximum: 122 KB, Scale: 1
```

```
Peer receive window: Current: 114 KB, Maximum: 114 KB, Scale: 1
```

```
Congestion window: Current: 2 KB, Slow start threshold: 1048560 KB
```

```
5 minutes input rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
```

```
5 minutes output rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
```

```
910 frames input, 84652 bytes
```

```
910 Class F frames input, 84652 bytes
```

```
0 Class 2/3 frames input, 0 bytes
```

```
0 Error frames timestamp error 0
```

```
908 frames output, 84096 bytes
```

```
908 Class F frames output, 84096 bytes
```

```
0 Class 2/3 frames output, 0 bytes
```

```
0 Error frames 0 reass frames
```

```
switch# show interface counters brief
```

```
-----
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
-----
Rate              Total                          Rate              Total
MB/s              Frames                          MB/s              Frames
-----
fc9/1              0              0                          0              0
fc9/2              0              0                          0              0
fc9/3              0              0                          0              0
fc9/4              0              0                          0              0
...
-----
```

```
-----
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
-----
Rate              Total                          Rate              Total
MB/s              Frames                          MB/s              Frames
-----
iscsi4/1          0              0                          0              0
iscsi4/2          0              0                          0              0
iscsi4/3          0              0                          0              0
iscsi4/4          0              0                          0              0
...
-----
```

```
vsan10 is up, line protocol is up
  WWPN is 10:00:00:05:30:00:07:23, FCID is 0xee0001
  Internet address is 10.1.1.5/24
  MTU 1500 bytes, BW 1000000 Kbit
  0 packets input, 0 bytes, 0 errors, 0 multicast
  0 packets output, 0 bytes, 0 errors, 0 dropped
-----
```

```
-----
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
-----
Rate              Total                          Rate              Total
MB/s              Frames                          MB/s              Frames
-----
port-channel 100  0              0                          0              0
-----
```

```
-----
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
-----
Rate              Total                          Rate              Total
Mbits/s          Frames                          Mbits/s          Frames
-----
fcip2              0              0                          0              0
fcip3              9              0                          9              0

fcip6              8              0                          8              0
fcip7              8              0                          8              0
-----
```

```

switch# show interface fcip 3
fcip3 is trunking
  Hardware is GigabitEthernet
  Port WWN is 20:ca:00:05:30:00:07:1e
  Peer port WWN is 20:ca:00:00:53:00:18:1e
  Admin port mode is auto, trunk mode is on
  Port mode is TE
  vsan is 1
  Trunk vsans (allowed active) (1,10)
  Trunk vsans (operational) (1)
  Trunk vsans (up) (1)
  Trunk vsans (isolated) (10)
  Trunk vsans (initializing) ()
  Using Profile id 3 (interface GigabitEthernet4/3)
  Peer Information
    Peer Internet address is 43.1.1.1 and port is 3225
    Special Frame is disabled
  Maximum number of TCP connections is 2
  Time Stamp is disabled
  B-port mode disabled
  TCP Connection Information
    2 Active TCP connections
    Control connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65532
    Data connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65534
    30 Attempts for active connections, 0 close of connections
  TCP Parameters
    Path MTU 1500 bytes
    Current retransmission timeout is 300 ms
    Round trip time: Smoothed 10 ms, Variance: 5
    Advertized window: Current: 122 KB, Maximum: 122 KB, Scale: 1
    Peer receive window: Current: 114 KB, Maximum: 114 KB, Scale: 1
    Congestion window: Current: 2 KB, Slow start threshold: 1048560 KB
  5 minutes input rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
  5 minutes output rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
  866 frames input, 80604 bytes
    866 Class F frames input, 80604 bytes
    0 Class 2/3 frames input, 0 bytes
    0 Error frames timestamp error 0
  864 frames output, 80048 bytes
    864 Class F frames output, 80048 bytes
    0 Class 2/3 frames output, 0 bytes
    0 Error frames 0 reass frames

switch# show interface gigabitethernet 4/1
GigabitEthernet4/1 is up
  Hardware is GigabitEthernet, address is 0005.3000.2e12
  Internet address is 100.1.1.2/24
  MTU 1500 bytes, BW 1000000 Kbit
  Port mode is IPS
  Speed is 1 Gbps
  Beacon is turned off
  5 minutes input rate 32 bits/sec, 4 bytes/sec, 0 frames/sec
  5 minutes output rate 88 bits/sec, 11 bytes/sec, 0 frames/sec
  637 packets input, 49950 bytes
    0 multicast frames, 0 compressed
    0 input errors, 0 frame, 0 overrun 0 fifo
  659 packets output, 101474 bytes, 0 underruns
    0 output errors, 0 collisions, 0 fifo
    0 carrier errors

```

```

switch# show interface iscsi 2/1
iscsi2/1 is up
  Hardware is GigabitEthernet
  Port WWN is 20:41:00:05:30:00:50:de
  Admin port mode is ISCSI
  Port mode is ISCSI
  Speed is 1 Gbps
  iSCSI initiator is identified by name
  Number of iSCSI session: 7, Number of TCP connection: 7
  Configured TCP parameters
    Local Port is 3260
    PMTU discover is disabled
    Keepalive-timeout is 1 sec
    Minimum-retransmit-time is 300 ms
    Max-retransmissions 8
    Sack is disabled
    Minimum available bandwidth is 0 kbps
    Estimated round trip time is 0 usec
  5 minutes input rate 265184 bits/sec, 33148 bytes/sec, 690 frames/sec
  5 minutes output rate 375002168 bits/sec, 46875271 bytes/sec, 33833 frames/sec
  iSCSI statistics
    6202235 packets input, 299732864 bytes
      Command 6189718 pdus, Data-out 1937 pdus, 1983488 bytes, 0 fragments
    146738794 packets output, 196613551108 bytes
      Response 6184282 pdus (with sense 4), R2T 547 pdus
      Data-in 140543388 pdus, 189570075420 bytes

switch# show interface transceiver
fc1/1 fcot is present but not supported
  name is IBM
  part number is IBM42P21SNY
  revision is AA20
  serial number is 53P148700109D
  vendor specific data (bytes 96-127)
    0x49 0x42 0x4D 0x20 0x53 0x46 0x50 0x53
    0x20 0x41 0x52 0x45 0x20 0x43 0x4C 0x41
    0x53 0x53 0x20 0x31 0x20 0x4C 0x41 0x53
    0x45 0x52 0x20 0x53 0x41 0x46 0x45 0x20
fc1/2 fcot not present
fc1/3 fcot is present but not supported
  name is IBM
  part number is IBM42P21SNY
  revision is AA20
  serial number is 53P1487000ZXR
  vendor specific data (bytes 96-127)
    0x49 0x42 0x4D 0x20 0x53 0x46 0x50 0x53
    0x20 0x41 0x52 0x45 0x20 0x43 0x4C 0x41
    0x53 0x53 0x20 0x31 0x20 0x4C 0x41 0x53
    0x45 0x52 0x20 0x53 0x41 0x46 0x45 0x20

switch# show interface fc-tunnel 200
fc-tunnel 200 is up
Dest   IP Addr: 200.200.200.7   Tunnel ID: 200
Source IP Addr: 200.200.200.4   LSP ID: 1
Explicit Path Name:

```

show ip access-list

To display the IP access control lists (IP-ACLs) currently active, use the **show ip access-list** command.

show ip access-list *list-number* | **usage**

| Syntax Description | ip access-list | Displays the information for all IP-ACLs |
|--------------------|--------------------|--|
| | <i>list-number</i> | Identifies the IP-ACL with an integer ranging from 1 to 256. |
| | usage | Specifies the interface type |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines None.

Examples The following example displays configured IP-ACLs

```
switch# show ip access-list usage
Access List Name/Number      Filters IF   Status      Creation Time
-----
abc                          3          7    active     Tue Jun 24 17:51:40 2003
x1                            3          1    active     Tue Jun 24 18:32:25 2003
x3                            0          1    not-ready  Tue Jun 24 18:32:28 2003
```

The following example displays a summary of the specified IP-ACL

```
switch# show ip access-list abc
ip access-list abc permit tcp any any (0 matches)
ip access-list abc permit udp any any (0 matches)
ip access-list abc permit icmp any any (0 matches)
ip access-list abc permit ip 10.1.1.0 0.0.0.255 (2 matches)
ip access-list abc permit ip 10.3.70.0 0.0.0.255 (7 matches)
```

show ip route

To display the ip routes currently active, use the **show ip route** command.

show ip route

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```
switch# show ip route

Codes: C - connected, S - static

Default gateway is 172.22.95.1

C 10.0.0.0/24 is directly connected, vsan1
C 172.22.95.0/24 is directly connected, mgmt0
```


show ip routing

To display the ip routing state, use the **show ip routing** command.

show ip routing

show ips arp interface gigabitethernet *slot-number*

| | | |
|---------------------------|----------------------------------|--|
| Syntax Description | ips | Displays the information for all IP storage configurations. |
| | arp | Displays the ARP table. |
| | interface gigabitethernet | Specifies the interface type |
| | <i>slot-number</i> | Specifies the slot number and port number of the required interface. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```
switch# show ip routing
ip routing is disabled
```

show ips arp

You can check the status of an interface at any time by using the **show ips arp** command.

show ips arp interface gigabitethernet *slot-number*

| Syntax Description | | |
|----------------------------------|--|--|
| ips | | Displays the information for all IP storage configurations. |
| arp | | Displays the ARP table. |
| interface gigabitethernet | | Specifies the interface type |
| <i>slot-number</i> | | Specifies the slot number and port number of the required interface. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines Use the **show ips arp interface gigabitethernet** command to display the ARP cache on the Gigabit Ethernet interfaces. This command takes the main Ethernet interface and as a parameter and returns the ARP cache for that interface.

Examples The following example displays ARP caches in the specified interface:

```
switch# show ips arp interface gigabitethernet 4/4
Protocol      Address      Age (min)    Hardware Addr  Type   Interface
Protocol      Address      Age (min)    Hardware Addr  Type   Interface
Internet      172.22.91.1  2           - 00:00:0c:07:ac:01  ARPA   GigabitEthernet4/4
Internet      172.22.91.2  0           - 00:02:7e:6b:a8:08  ARPA   GigabitEthernet4/4
Internet      172.22.91.17 0           - 00:e0:81:20:45:f5  ARPA   GigabitEthernet4/4
Internet      172.22.91.18 0           - 00:e0:81:05:f7:64  ARPA   GigabitEthernet4/4
Internet      172.22.91.30 0           - 00:e0:18:2e:9d:19  ARPA   GigabitEthernet4/4
...
```

show ips ip route

You can check the status of an interface at any time by using the **show ips ip route** command.

show ips ip route interface gigabitethernet *slot-number*

| Syntax Description | | |
|----------------------------------|--|--|
| ips | | Displays the information for all IP storage configurations. |
| ip route | | Displays the IP route table. |
| interface gigabitethernet | | Specifies the interface type |
| <i>slot-number</i> | | Specifies the slot number and port number of the required interface. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines None.

Examples The following example displays all FCIP profiles.

```
switch# show ips ip route interface gigabitethernet 8/1
Codes: C - connected, S - static

No default gateway

C 10.1.3.0/24 is directly connected, GigabitEthernet8/1
```

show ips stats

You can check the status of an interface at any time by using the **show ips stats** command.

```
show ips stats [buffer | dma-bridge | icmp | ip | mac | tcp (detail) ] interface gigabitethernet
slot-number
```

| Syntax Description | | |
|----------------------------------|--|--|
| ips | | Displays the information for all IP storage configurations. |
| stats | | Displays IP storage statistics for the specified interface. |
| buffer | | Displays IP storage buffer information. |
| dma-bridge | | Displays the direct memory access (DMA) statistics. |
| icmp | | Displays ICMP statistics. |
| ip | | Displays IP statistics. |
| mac | | Displays MAC statistics, |
| tcp | | Displays TCP statistics |
| detail | | Displays all statistical information maintained by the interface. |
| interface gigabitethernet | | Specifies the interface type |
| <i>slot-number</i> | | Specifies the slot number and port number of the required interface. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

Use the **show ips stats icmp interface gigabitethernet** command to obtain ICMP statistics for the selected interface.

Use the **show IPS stats IP interface gigabitethernet 2/1** command to obtain IP statistics for the selected interface.

Use the **show ips stats mac interface gigabitethernet** command to obtain Ethernet statistics for the selected interface.

Use the **show ips stats tcp interface gigabitethernet** command to obtain TCP stats along with the connection list and TCP state or the selected interface.

Examples

The following example displays iSCSI buffer statistics.

```
switch# show ips stats buffer interface gigabitethernet 8/1
```

The following example displays ICMP statistics.

```
switch# show ips stats icmp interface gigabitethernet 8/1
ICMP Statistics for port GigabitEthernet8/1
  2 ICMP messages received
  0 ICMP messages dropped due to errors
  ICMP input histogram
    2 echo request
  ICMP output histogram
    2 echo reply
```

The following example displays IP statistics.

```
switch# show ips stats ip interface gigabitethernet 8/1
Internet Protocol Statistics for port GigabitEthernet8/1
  22511807 total received, 22509468 good, 2459 error
  0 reassembly required, 0 reassembled ok, 0 dropped after timeout
  27935633 packets sent, 0 outgoing dropped, 0 dropped no route
  0 fragments created, 0 cannot fragment
```

The following example displays MAC statistics.

```
switch# show ips stats mac interface gigabitethernet 8/1
Ethernet MAC statistics for port GigabitEthernet8/1
  Hardware Transmit Counters
    28335543 frame 37251751286 bytes
    0 collisions, 0 late collisions, 0 excess collisions
    0 bad frames, 0 FCS error, 0 abort, 0 runt, 0 oversize
  Hardware Receive Counters
    18992406778 bytes, 22835370 frames, 0 multicasts, 2584 broadcasts
    0 bad, 0 runt, 0 CRC error, 0 length error
    0 code error, 0 align error, 0 oversize error
  Software Counters
    22835370 received frames, 28335543 transmit frames
    0 frames soft queued, 0 current queue, 0 max queue
    0 dropped, 0 low memory
```

The following example displays TCP statistics.

```
switch# show ips stats tcp interface gigabitethernet 8/1
TCP Statistics for port GigabitEthernet8/1
  Connection Stats
    0 active openings, 0 accepts
    0 failed attempts, 0 reset received, 0 established
  Segment stats
    23657893 received, 29361174 sent, 0 retransmitted
    0 bad segments received, 0 reset sent

TCP Active Connections
  Local Address      Remote Address      State      Send-Q  Recv-Q
10.1.3.3:3260       10.1.3.106:51935   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51936   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51937   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51938   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51939   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51940   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51941   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51942   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51943   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.106:51944   ESTABLISH  0        0
10.1.3.3:3260       10.1.3.115:1026    ESTABLISH  0        0
10.1.3.3:3260       10.1.3.115:1027    ESTABLISH  0        0
10.1.3.3:3260       10.1.3.115:1028    ESTABLISH  0        0
10.1.3.3:3260       10.1.3.115:1029    ESTABLISH  0        0
10.1.3.3:3260       10.1.3.115:1030    ESTABLISH  48       0
10.1.3.3:3260       10.1.3.115:1031    ESTABLISH  48       0
10.1.3.3:3260       10.1.3.115:1032    ESTABLISH  0        0
10.1.3.3:3260       10.1.3.115:1033    ESTABLISH  0        0
10.1.3.3:3260       10.1.3.115:1034    ESTABLISH  0        0
0.0.0.0:3260        0.0.0.0:0          LISTEN     0        0
```

show ips status

You can check the status of an interface at any time by using the **show ips status** command.

```
show ips status [module slot-number]
```

| Syntax Description | Command | Description |
|--------------------|----------------------------------|---|
| | ips | Displays the information for all IP storage configurations. |
| | status | Displays the ARP table. |
| | module <i>slot-number</i> | Identifies the module in the specified slot. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines None.

Examples The following example displays all FCIP profiles.

```
switch# show ips status
Port 8/1 READY
Port 8/2 READY
Port 8/3 READY
Port 8/4 READY
Port 8/5 READY
Port 8/6 READY
Port 8/7 READY
Port 8/8 READY

switch# show ips status module 9
Port 9/1 READY
Port 98/2 READY
Port 9/3 READY
Port 9/4 READY
Port 9/5 READY
Port 9/6 READY
Port 9/7 READY
Port 9/8 READY
...
```

show iscsi global

The **show iscsi global** command shows all the iSCSI initiators that are configured by the user.

show iscsi global

| Syntax Description | iscsi global | Displays information for all configured iSCSI initiators. |
|--------------------|--------------|---|
|--------------------|--------------|---|

| | |
|----------|-------|
| Defaults | None. |
|----------|-------|

| | |
|---------------|------|
| Command Modes | EXEC |
|---------------|------|

| | |
|-----------------|---|
| Command History | This command was introduced in Cisco MDS SAN-OS Release 1.1(1). |
|-----------------|---|

| | |
|------------------|-------|
| Usage Guidelines | None. |
|------------------|-------|

| | |
|----------|--|
| Examples | The following example displays all configured iSCSI initiators |
|----------|--|

```
switch# show iscsi global
iSCSI Global information
  Authentication:CHAP, NONE
  Import FC Target:Enabled
  Number of target nodes:11
  Number of portals:8
  Number of sessions:10
  Failed sessions:9, Last failed initiator
name:iqn.1987-05.com.cisco:02.0163c91bbc28.host1
```


show iscsi initiator

The **show iscsi initiator** commands shows all the iSCSI nodes that are remote to the switch.

show iscsi initiator [configured | detail | fcp-session | iscsi-session]

| Syntax Description | iscsi initiator | Displays iSCSI information for the initiators. |
|--------------------|----------------------|--|
| | configured | Displays the configured information for the iSCSI initiator. |
| | detail | Displays detailed iSCSI initiator information. |
| | fcp-session | Specifies the Fibre Channel session details. |
| | iscsi-session | Specifies iSCSI session details. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines If no parameter is provided the command lists all the active iSCSI virtual-targets. If the iSCSI node name is provided then the command lists the details of that iscsi virtual-target.

Examples The following example displays all iSCSI initiators

```
switch# show iscsi initiator
iSCSI Node name is iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  iSCSI alias name: iscsi7-lnx
  Node WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
  Member of vsans: 1
  Number of Virtual n_ports: 1
  Virtual Port WWN is 23:12:00:05:30:00:7e:a0 (dynamic)
    Interface iSCSI 8/3, Portal group tag: 0x382
      VSAN ID 1, FCID 0xdc0100

iSCSI Node name is iqn.1987-05.com.cisco.02.91b0ee2e8aa1.iscsi16-w2k
  iSCSI alias name: ISCSI16-W2K
  Node WWN is 23:1f:00:05:30:00:7e:a0 (dynamic)
  Member of vsans: 1
  Number of Virtual n_ports: 1
  Virtual Port WWN is 23:28:00:05:30:00:7e:a0 (dynamic)
    Interface iSCSI 8/3, Portal group tag: 0x382
      VSAN ID 1, FCID 0xdc0101
```

```

iSCSI Node name is iqn.1987-05.com.cisco.01.b6ca466f8b4d8e848ab17e92f24bf9cc
  iSCSI alias name: iscsi6-lnx
  Node WWN is 23:29:00:05:30:00:7e:a0 (dynamic)
  Member of vsans: 1, 2, 3, 4
  Number of Virtual n_ports: 1
  Virtual Port WWN is 23:2a:00:05:30:00:7e:a0 (dynamic)
    Interface iSCSI 8/3, Portal group tag: 0x382
      VSAN ID 4, FCID 0xee0000
      VSAN ID 3, FCID 0xee0100
      VSAN ID 2, FCID 0xee0000
      VSAN ID 1, FCID 0xdc0102
  ...

```

The following example displays detailed Information for all iSCSI initiators

```

switch# show iscsi initiator detail
iSCSI Node name is iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  iSCSI alias name: iscsi7-lnx
  Node WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
  Member of vsans: 1
  Number of Virtual n_ports: 1

  Virtual Port WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
    Interface iSCSI 8/3, Portal group tag is 0x382
      VSAN ID 1, FCID 0xdc0100
      No. of FC sessions: 3
      No. of iSCSI sessions: 2

  iSCSI session details

    Target node: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
    Statistics:
      PDU: Command: 0, Response: 0
      Bytes: TX: 0, RX: 0
      Number of connection: 1
    TCP parameters
      Connection Local 10.1.3.3:3260, Remote 10.1.3.107:34112
      Path MTU 1500 bytes
      Current retransmission timeout is 300 ms
      Round trip time: Smoothed 2 ms, Variance: 1
      Advertised window: Current: 6 KB, Maximum: 6 KB, Scale: 3
      Peer receive window: Current: 250 KB, Maximum: 250 KB, Scale: 2
      Congestion window: Current: 8 KB

    Target node: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
    Statistics:
      PDU: Command: 0, Response: 0
      Bytes: TX: 0, RX: 0
      Number of connection: 1
    TCP parameters
      Connection Local 10.1.3.3:3260, Remote 10.1.3.107:34112
      Path MTU 1500 bytes
      Current retransmission timeout is 300 ms
      Round trip time: Smoothed 2 ms, Variance: 1
      Advertised window: Current: 6 KB, Maximum: 6 KB, Scale: 3
      Peer receive window: Current: 250 KB, Maximum: 250 KB, Scale: 2
      Congestion window: Current: 8 KB
  ...

```

The following example displays the iSCSI initiator information

```
switch# show iscsi initiator
iSCSI Node name is iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed9637
  iSCSI alias name: iscsi7-lnx
  Node WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
  Member of vsans: 1
  Number of Virtual n_ports: 1
  Virtual Port WWN is 23:12:00:05:30:00:7e:a0 (dynamic)
  Interface iSCSI 8/3, Portal group tag: 0x382
  VSAN ID 1, FCID 0xdc0100

iSCSI Node name is iqn.1987-05.com.cisco.02.91b0ee2e8aa1.iscsi16-w2k
  iSCSI alias name: ISCSI16-W2K
  Node WWN is 23:1f:00:05:30:00:7e:a0 (dynamic)
  Member of vsans: 1
  Number of Virtual n_ports: 1
  Virtual Port WWN is 23:28:00:05:30:00:7e:a0 (dynamic)
  Interface iSCSI 8/3, Portal group tag: 0x382
  VSAN ID 1, FCID 0xdc0101

iSCSI Node name is iqn.1987-05.com.cisco.01.b6ca466f8b4d8e848ab17e92f
  iSCSI alias name: iscsi6-lnx
  Node WWN is 23:29:00:05:30:00:7e:a0 (dynamic)
  Member of vsans: 1, 2, 3, 4
  Number of Virtual n_ports: 1
...
```

show iscsi session

You can check the iSCSI port information by using the **show iscsi port** command.

show iscsi session [**detail** | **incoming** | **initiator** | **outgoing** | **target** *word*]

| Syntax Description | iscsi session | Shows the information for all iSCSI ports. |
|--------------------|------------------|--|
| | detail | Shows detailed iSCSI session information. |
| | incoming | Shows incoming iscsi sessions |
| | initiator | Shows specific iscsi initiator's session information |
| | outgoing | Shows outgoing iscsi sessions |
| | target | Shows specific iscsi target's session information |
| | <i>word</i> | Specify an existing target name from 1 to 80 characters. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines All the parameters are optional in the **show iscsi session** commands. If no parameter is provided the command lists all the active iSCSI initiator or target sessions. If the IP address or iSCSI node name is provided, then the command lists details of all sessions from that initiator or to that target.

Examples The following command displays the iSCSI Session.

```
switch# show iscsi session
Initiator iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  Session #1
    Target iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
    VSAN 1, ISID 000000000000, Status active, no reservation

  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
    VSAN 1, ISID 000000000000, Status active, no reservation

Initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
  Session #1
    Discovery session, ISID 00023d00022f, Status active

  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388bc2
    VSAN 1, ISID 00023d000230, Status active, no reservation
...
```

The following command displays the Specified iSCSI Target.

```
switch# show iscsi session target
iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
Initiator iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  Session #1
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
    VSAN 1, ISID 000000000000, Status active, no reservation
```



Note

On the IPS module, you can verify what iSCSI initiator iqn has been assigned which pWWN when it logs in by using the **show zone active vsan vsan-no** command.

```
switch# zone name iscsi_16_A vsan 16
* fcid 0x7700d4 [pwwn 21:00:00:20:37:c5:2d:6d]
* fcid 0x7700d5 [pwwn 21:00:00:20:37:c5:2e:2e]
* fcid 0x770100 [symbolic-nodename
iqn.1987-05.com.cisco.02.BC3FEEFC431B199F81F33E97E2809C14.NUYEAR]
```

The following command displays the Specified iSCSI Initiator.

```
switch# show iscsi session initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
Initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
  Session #1
    Discovery session, ISID 00023d00022f, Status active

  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388bc2
    VSAN 1, ISID 00023d000230, Status active, no reservation

  Session #3
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739ad7f
    VSAN 1, ISID 00023d000235, Status active, no reservation

  Session #4
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739aa3a
    VSAN 1, ISID 00023d000236, Status active, no reservation

  Session #5
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739ada7
    VSAN 1, ISID 00023d000237, Status active, no reservation

  Session #6
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037381ccb
    VSAN 1, ISID 00023d000370, Status active, no reservation

  Session #7
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388b54
    VSAN 1, ISID 00023d000371, Status active, no reservation

  Session #8
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738a194
    VSAN 1, ISID 00023d000372, Status active, no reservation

  Session #9
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037360053
    VSAN 1, ISID 00023d000373, Status active, no reservation
```

show iscsi stats

You can check the iSCSI port information by using the **show iscsi port** command.

show iscsi stats [clear session| detail | iscsi]

| Syntax Description | |
|----------------------|---|
| iscsi stats | Shows iSCSI statistics. |
| clear session | Clears iSCSI statistics for a session. |
| detail | Shows detailed iSCSI statistics. |
| iscsi | Shows statistics for the specified iSCSI interface. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines None.

Examples The following command displays brief iSCSI statistics.

```
switch# show iscsi stats
iscsi8/1
  5 minutes input rate 23334800 bits/sec, 2916850 bytes/sec, 2841 frames/sec
  5 minutes output rate 45318424 bits/sec, 5664803 bytes/sec, 4170 frames/sec
  iSCSI statistics
    86382665 packets input, 2689441036 bytes
      3916933 Command pdus, 82463404 Data-out pdus, 2837976576 Data-out bytes,
0 fragments
    131109319 packets output, 2091677936 bytes
      3916876 Response pdus (with sense 0), 1289224 R2T pdus
      125900891 Data-in pdus, 93381152 Data-in bytes

iscsi8/2
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  iSCSI statistics
    0 packets input, 0 bytes
      0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
    0 packets output, 0 bytes
      0 Response pdus (with sense 0), 0 R2T pdus
      0 Data-in pdus, 0 Data-in bytes
```

```
iscsi8/3
  5 minutes input rate 272 bits/sec, 34 bytes/sec, 0 frames/sec
  5 minutes output rate 40 bits/sec, 5 bytes/sec, 0 frames/sec
  iSCSI statistics
    30 packets input, 10228 bytes
      0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
    30 packets output, 1744 bytes
      0 Response pdus (with sense 0), 0 R2T pdus
      0 Data-in pdus, 0 Data-in bytes

iscsi8/4
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  iSCSI statistics
    0 packets input, 0 bytes
      0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
    0 packets output, 0 bytes
      0 Response pdus (with sense 0), 0 R2T pdus
      0 Data-in pdus, 0 Data-in bytes

iscsi8/5
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  iSCSI statistics
    0 packets input, 0 bytes
      0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
    0 packets output, 0 bytes
      0 Response pdus (with sense 0), 0 R2T pdus
      0 Data-in pdus, 0 Data-in bytes

iscsi8/6
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  iSCSI statistics
    0 packets input, 0 bytes
      0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
    0 packets output, 0 bytes
      0 Response pdus (with sense 0), 0 R2T pdus
      0 Data-in pdus, 0 Data-in bytes

iscsi8/7
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  iSCSI statistics
    0 packets input, 0 bytes
      0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
    0 packets output, 0 bytes
      0 Response pdus (with sense 0), 0 R2T pdus
      0 Data-in pdus, 0 Data-in bytes

iscsi8/8
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  iSCSI statistics
    0 packets input, 0 bytes
      0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
    0 packets output, 0 bytes
      0 Response pdus (with sense 0), 0 R2T pdus
      0 Data-in pdus, 0 Data-in bytes
```

The following command displays detailed iSCSI statistics.

```
switch# show iscsi stats detail
iscsi8/1
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  iSCSI statistics
    0 packets input, 0 bytes
    0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
    0 packets output, 0 bytes
    0 Response pdus (with sense 0), 0 R2T pdus
    0 Data-in pdus, 0 Data-in bytes
  iSCSI Forward:
    Command: 0 PDUs (Received: 0)
    Data-Out (Write): 0 PDUs (Received 0), 0 fragments, 0 bytes
  FCP Forward:
    Xfer_rdy: 0 (Received: 0)
    Data-In: 0 (Received: 0), 0 bytes
    Response: 0 (Received: 0), with sense 0
    TMF Resp: 0

  iSCSI Stats:
    Login: attempt: 0, succeed: 0, fail: 0, authen fail: 0
    Rcvd: NOP-Out: 0, Sent: NOP-In: 0
      NOP-In: 0, Sent: NOP-Out: 0
      TMF-REQ: 0, Sent: TMF-RESP: 0
      Text-REQ: 0, Sent: Text-RESP: 0
      SNACK: 0
      Unrecognized Opcode: 0, Bad header digest: 0
      Command in window but not next: 0, exceed wait queue limit: 0
      Received PDU in wrong phase: 0
  FCP Stats:
    Total: Sent: 0
      Received: 0 (Error: 0, Unknown: 0)
    Sent: PLOGI: 0, Rcvd: PLOGI_ACC: 0, PLOGI_RJT: 0
      PRLI: 0, Rcvd: PRLI_ACC: 0, PRLI_RJT: 0, Error resp: 0
      LOGO: 0, Rcvd: LOGO_ACC: 0, LOGO_RJT: 0
      ABTS: 0, Rcvd: ABTS_ACC: 0
      TMF REQ: 0
      Self orig command: 0, Rcvd: data: 0, resp: 0
    Rcvd: PLOGI: 0, Sent: PLOGI_ACC: 0
      LOGO: 0, Sent: LOGO_ACC: 0
      PRLI: 0, Sent: PRLI_ACC: 0
      ABTS: 0

  iSCSI Drop:
    Command: Target down 0, Task in progress 0, LUN map fail 0
      CmdSeqNo not in window 0, No Exchange ID 0, Reject 0
      Persistent Resv 0 Data-Out: 0, TMF-Req: 0
  FCP Drop:
    Xfer_rdy: 0, Data-In: 0, Response: 0

  Buffer Stats:
    Buffer less than header size: 0, Partial: 0, Split: 0
    Pullup give new buf: 0, Out of contiguous buf: 0, Unaligned m_data: 0
```



```
iscsi8/2
 5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
 5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
iSCSI statistics
 0 packets input, 0 bytes
 0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
 0 packets output, 0 bytes
 0 Response pdus (with sense 0), 0 R2T pdus
 0 Data-in pdus, 0 Data-in bytes
iSCSI Forward:
 Command: 0 PDUs (Received: 0)
 Data-Out (Write): 0 PDUs (Received 0), 0 fragments, 0 bytes
FCP Forward:
 Xfer_rdy: 0 (Received: 0)
 Data-In: 0 (Received: 0), 0 bytes
 Response: 0 (Received: 0), with sense 0
...
```

The following command displays detailed statistics for the specified iSCSI interface.

```
switch# show iscsi stats iscsi 8/1
iscsi8/1
 5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
 5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
iSCSI statistics
 0 packets input, 0 bytes
 0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
 0 packets output, 0 bytes
 0 Response pdus (with sense 0), 0 R2T pdus
 0 Data-in pdus, 0 Data-in bytes
```

show iscsi virtual-target

The **show iscsi virtual-target** command shows all the iSCSI nodes that are local to the switch.

show iscsi virtual-target [*name*]

| Syntax | Description |
|-----------------------------|--|
| iscsi virtual-target | Show the information for all iSCSI ports. |
| <i>name</i> | Show iSCSI information for the specified virtual-target. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines If no parameter is provided the command lists all the active iSCSI virtual-targets. If the iSCSI node name is provided then the command lists the details of that iSCSI virtual-target.

Examples The following example displays the local iSCSI node.

```
switch# show iscsi virtual-target
target: abc
  Port WWN 00:00:00:00:00:00:00:00
  Configured node
target: abc1
  Port WWN 21:00:00:20:37:a6:b0:bf
  Configured node
target: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
  Port WWN 22:00:00:20:37:4b:52:47 , VSAN 1
  Auto-created node
target: iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
  Port WWN 22:00:00:20:37:38:e7:7d , VSAN 1
  Auto-created node
target: iqn.com.domainname.172.22.93.143.08-03.gw.220000203700cede
  Port WWN 22:00:00:20:37:00:ce:de , VSAN 1
  Auto-created node
...
target: iqn.com.domainname.172.22.93.143.08-03.gw.210000203739aa39
  Port WWN 21:00:00:20:37:39:aa:39 , VSAN 1
  Auto-created node
```

The following example displays a specified local iSCSI node

```
switch# show iscsi virtual-target
iqn.com.domainname.172.22.93.143.08-03.gw.210000203739a95b
target: iqn.com.domainname.172.22.93.143.08-03.gw.210000203739a95b
  Port WWN 21:00:00:20:37:39:a9:5b , VSAN 1
  Auto-created node
```

show kernel core

To display kernel core configurations, use the **show kernel core** command.

show kernel core detailed

| Syntax Description | |
|----------------------------|--|
| show install impact | Upgrades the BIOS for a supervisor or switching module. |
| bootflash: | Source or destination location for internal bootflash memory |
| slot0: | Source or destination location for the CompactFlash memory or PCMCIA card. |
| volatile: | Source or destination location for the volatile directory. |
| <i>image-filename</i> | The name of the system or kickstart image. |
| detailed | Compares the image to the current running system image instead of the system.bin image |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines None.

Examples The following examples display kernel core settings.

```
switch# show kernel core limit
2

switch# show kernel core target
10.50.5.5

switch# show kernel core module 5
module 5 core is enabled
level is header
dst_ip is 10.50.5.5
src_port is 6671
dst_port is 6666
dump_dev_name is eth1
dst_mac_addr is 00:00:0C:07:AC:01
```

show license

To display kernel core configurations, use the **show kernel core** command.

show license *filename* | **all** | **hostid** | **list**

| Syntax Description | show license | Description |
|--------------------|-----------------|---|
| | <i>filename</i> | Specifies the name of the license. |
| | all | Displays details of all licenses installed on a switch. |
| | hostid | Displays host ID used to request node locked license. |
| | list | Displays a list of license files installed on a switch. |

Defaults None.

Command Modes EXEC

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines None.

Examples The following example displays a specific license installed on a switch.

```
switch# show license fcports.lic
fcports.lic:
SERVER this_host ANY
VENDOR cisco
FEATURE fcports cisco 1.000 permanent 30 HOSTID=VDH=4C0AF664 \
SIGN=24B2B68AA676 <----- fcport license
```

The following example displays a list of license files installed on a switch.

```
switch# show license list
fcports.lic
ficon.lic
```

The following example displays all licenses installed on a switch.

```
switch# show license all
fcports.lic:
SERVER this_host ANY
VENDOR cisco
FEATURE fcports cisco 1.000 permanent 30 HOSTID=VDH=4C0AF664 \
SIGN=24B2B68AA676 <-----fcport license
ficon.lic:
FEATURE ficon cisco 1.000 permanent uncounted HOSTID=VDH=4C0AF664 \
SIGN=CB7872B23700 <-----ficon license
```

The following example displays the host IDs, required to request node locked license.

```
switch# show license hostid
License hostid:VDH=4C0AF664
```

show line

To configure a virtual terminal line, use the **show line** command.

show line [com1 | console]

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines None.

Examples The following example displays configured console settings.

```
switch## show line console
line Console:
  Speed:          38400 bauds
  Databits:       8 bits per byte
  Stopbits:       1 bit(s)
  Parity:         none
```

The following example displays configured or default COM1 settings.

```
switch# show line com1
line Aux:
  Speed:          9600 bauds
  Databits:       8 bits per byte
  Stopbits:       1 bit(s)
  Parity:         none
  Modem In: Enable
  Modem Init-String -
    default : ATE0Q1&D2&C1S0=1\015
  Statistics: tx:17   rx:0   Register Bits:RTS|CTS|DTR|DSR|CD|RI
```

Related Commands

| Command | Description |
|---------------------|-------------------------------------|
| line console | Configure primary terminal line. |
| line aux | Configures the auxiliary COM 1 port |
| clear line | Deleted configured line sessions. |

show logging

Use the **show logging** command to display the current system message logging configuration.

```
show logging [console | level [auth | authpriv | callhome | cron | daemon | ftp | kernel | localn
llpr | mail | news | security | syslog | user | uucp | vsan] | info | last lines | logfile | module |
monitor | nvram | server servername ]
```

| Syntax Description | | |
|---------------------------------|--|--------------------------------------|
| console | | Shows console logging configuration. |
| info | | Shows logging configuration. |
| last | | Shows last few lines of logfile. |
| level | | Shows last few lines of logfile. |
| logfile | | Shows contents of logfile. |
| module | | Shows module logging configuration. |
| monitor | | Shows monitor logging configuration. |
| nvram | | Shows NVRAM log. |
| server <i>servername</i> | | Shows server logging configuration. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays current system message logging.

```
switch# show logging

Logging console:                enabled (Severity: notifications)
Logging monitor:                enabled (Severity: information)
Logging linecard:               enabled (Severity: debugging)
Logging server:                  enabled
{172.22.0.0}
  server severity:               debugging
  server facility:                local7
{172.22.0.0}
  server severity:               debugging
  server facility:                local7
Logging logfile:                 enabled
  Name - external/sampleLogFile: Severity - notifications Size - 3000000
```

```

syslog_get_levels :: Error(-1) querying severity values for fcmps at SAP 30
syslog_get_levels :: Error(-1) querying severity values for fcfwd at SAP 38
Facility           Default Severity   Current Session Severity
-----
kern                6                   4
user                3                   3
mail                3                   3
daemon              7                   7
auth                0                   0
syslog              3                   3
lpr                 3                   3
news                3                   3
uucp                3                   3
cron                3                   3
authpriv            3                   3
ftp                 3                   3
local0              3                   3
local1              3                   3
local2              3                   3
local3              3                   3
local4              3                   3
local5              3                   3
local6              3                   3
local7              3                   3
fspf                3                   3
fcdomain            2                   2
module              5                   5
zone                2                   2
vni                 2                   2
ipconf              2                   2
ipfc                2                   2
xbar                3                   3
fcns                2                   2
fcs                 2                   2
acl                 2                   2
tlport              2                   2
port                5                   5
port_channel        5                   5
fcmps               0                   0
wwn                 3                   3
fcc                 2                   2
qos                 3                   3
vrrp_cfg            2                   2
fcfwd               0                   0
ntp                 2                   2
platform            5                   5
vrrp_eng            2                   2
callhome            2                   2
mcast               2                   2
rscn                2                   2
securityd           2                   2
vhbad               2                   2
rib                 2                   2
vshd                5                   5

0 (emergencies)    1 (alerts)          2 (critical)
3 (errors)          4 (warnings)        5 (notifications)
6 (information)    7 (debugging)

Nov  8 16:48:04 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/1 (171.71.58.56)
Nov  8 17:44:09 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/0 (171.71.58.72)

```


The following example displays console logging status.

```
switch# show logging console
Logging console:          enabled (Severity: notifications)
```

The following example displays logging facility status.

```
switch# show logging facility
syslog_get_levels :: Error(-1) querying severity values for fcmpls at SAP 30
syslog_get_levels :: Error(-1) querying severity values for fcfwd at SAP 38
Facility           Default Severity      Current Session Severity
-----
kern                6                      4
user                3                      3
mail                3                      3
daemon              7                      7
auth                0                      0
syslog              3                      3
lpr                 3                      3
news                3                      3
uucp                3                      3
cron                3                      3
authpriv            3                      3
ftp                 3                      3
local0              3                      3
local1              3                      3
local2              3                      3
local3              3                      3
local4              3                      3
local5              3                      3
local6              3                      3
local7              3                      3
fspf                3                      3
fcdomain            2                      2
module              5                      5
zone                2                      2
vni                 2                      2
ipconf              2                      2
ipfc                2                      2
xbar                3                      3
fcns                2                      2
fcs                 2                      2
acl                 2                      2
tlport              2                      2
port                5                      5
port_channel        5                      5
fcmpls              0                      0
wn                  3                      3
fcc                 2                      2
qos                 3                      3
vrrp_cfg            2                      2
fcfwd               0                      0
ntp                 2                      2
platform            5                      5
vrrp_eng            2                      2
callhome            2                      2
mcast               2                      2
rscn                 2                      2
securityd           2                      2
vhbad               2                      2
rib                  2                      2
vshd                5                      5
```

```

0 (emergencies)          1 (alerts)           2 (critical)
3 (errors)               4 (warnings)        5 (notifications)
6 (information)         7 (debugging)

```

The following example displays logging information.

```

switch# show logging info

Logging console:          enabled (Severity: notifications)
Logging monitor:         enabled (Severity: information)
Logging linecard:        enabled (Severity: debugging)
Logging server:          enabled
{172.22.95.167}
    server severity:      debugging
    server facility:      local7
{172.22.92.58}
    server severity:      debugging
    server facility:      local7
Logging logfile:         enabled
    Name - external/sampleLogFile: Severity - notifications Size - 3000000

syslog_get_levels :: Error(-1) querying severity values for fcmps at SAP 30
syslog_get_levels :: Error(-1) querying severity values for fcfwd at SAP 38
Facility                 Default Severity      Current Session Severity
-----
kern                     6                      4
user                    3                      3
mail                    3                      3
daemon                  7                      7
auth                    0                      0
syslog                  3                      3
lpr                     3                      3
news                   3                      3
uucp                    3                      3
cron                    3                      3
authpriv                3                      3
ftp                     3                      3
local0                  3                      3
local1                  3                      3
local2                  3                      3
local3                  3                      3
local4                  3                      3
local5                  3                      3
local6                  3                      3
local7                  3                      3
fspf                    3                      3
fcdomain                2                      2
module                  5                      5
zone                    2                      2
vni                     2                      2
ipconf                  2                      2
ipfc                    2                      2
xbar                    3                      3
fcns                    2                      2
fcs                     2                      2
acl                     2                      2
tlport                  2                      2
port                    5                      5
port_channel            5                      5
fcmps                   0                      0
wnn                     3                      3
fcc                     2                      2
qos                     3                      3
vrrp_cfg                2                      2

```

```

fcfwd                0                0
ntp                  2                2
platform            5                5
vrrp_eng            2                2
callhome            2                2
mcast               2                2
rscn                2                2
securityd           2                2
vhbad               2                2
rib                 2                2
vshd                5                5

0(emergencies)      1(alerts)        2(critical)
3(errors)           4(warnings)      5(notifications)
6(information)     7(debugging)

```

The following example displays last few lines of a log file.

```

switch# show logging last 2
Nov  8 16:48:04 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/1 (171.71.58.56)
Nov  8 17:44:09 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/0 (171.71.58.72)

```

The following example displays switching module logging status.

```

switch# show logging module
Logging linecard:          enabled (Severity: debugging)

```

The following example displays monitor logging status.

```

switch# show logging monitor
Logging monitor:          enabled (Severity: information)

```

The following example displays server information.

```

switch# show logging server
Logging server:          enabled
{172.22.95.167}
  server severity:      debugging
  server facility:      local7
{172.22.92.58}
  server severity:      debugging
  server facility:      local7

```

show module

To verify the status of a module, use the **show module** command.

```
show module [diag | slot]
```

| Syntax Description | diag | Shows module-related information. |
|--------------------|------|--|
| | slot | Slot number for the required module (1 - 9 for the MDS 9500 Series switch and 1 - 2 for the MDS 9200 Series switch). |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines If your chassis has more than one switching module, you will see the progress check if you issue the show module command several times and view the status column each time. The switching module goes through a testing and an initializing stage before displaying an `ok` status. The following table describes the possible states in which a module can exist.

| show module Output | Description |
|--------------------|---|
| powered up | The hardware has electrical power. When the hardware is powered up, the software begins booting. |
| testing | The module has established connection with the supervisor and the switching module is performing bootup diagnostics. |
| initializing | The diagnostics have passed and the configuration is being downloaded. |
| failure | The switch detects a switching module failure on initialization and automatically attempts to power-cycle the module three (3) times. After the third attempt it continues to display a failed state. |
| ok | The switch is ready to be configured. |
| power-denied | The switch detects insufficient power for a switching module to power up. In this case, issue a show environment power command to determine power consumption issues. |
| active | This module is the active supervisor module and the switch is ready to be configured. |

| show module Output | Description |
|--------------------|---|
| HA-standby | This module is the standby supervisor module and that the HA switchover mechanism is enabled. |
| standby | This module is the standby supervisor module and the warm switchover mechanism is enabled. |

Examples

```

switch# show module
Mod  Ports  Module-Type                Model                Status
---  ---
2    32     Advanced Services Module   DS-X9032-SMV        powered-dn
4    32     Advanced Services Module   DS-X9032-SMV        powered-dn
5    0      Supervisor/Fabric-1        DS-X9530-SF1-K9     active *
6    0      Supervisor/Fabric-1        DS-X9530-SF1-K9     ha-standby
8    32     1/2 Gbps FC Module         DS-X9032             ok

Mod  Sw          Hw          World-Wide-Name(s) (WWN)
---  ---
5    1.2(2)      0.610      --
6    1.2(2)      0.610      --
8    1.2(2)      0.3        21:c1:00:0b:46:79:f1:40 to 21:e0:00:0b:46:79:f1:40

Mod  MAC-Address(es)                Serial-Num
---  ---
5    00-d0-97-38-b4-01 to 00-d0-97-38-b4-05  JAB06350B0H
6    00-d0-97-38-b3-f9 to 00-d0-97-38-b3-fd  JAB06350B1R
8    00-05-30-00-2b-e2 to 00-05-30-00-2b-e6  jab062407x4

* this terminal session

switch# show module diag

Diag status for module 2 (. = PASS, F = FAIL, N = N/A)
CPU          .
SPROM        .
ASICS        .

Diag status for module 4 (. = PASS, F = FAIL, N = N/A)
CPU          .
SPROM        .
ASICS        .

```

show ntp

To display the configured server and peer associations, use the **show ntp** command.

show ntp peers | statistics [io | local | memory | peer (ipaddr | name)] | timestamp-status

Syntax Description

| | |
|-------------------------|---|
| peers | Shows all the peers. |
| statistics | Shows the NTP statistics |
| io | Shows the input-output statistics. |
| local | Shows the counters maintained by the local NTP. |
| memory | Shows the statistics counters related to memory code. |
| peer | Shows the per-peer statistics counter of a peer. |
| ipaddr | Shows the peer statistics for the specified IP address. |
| name | Shows the peer statistics for the specified peer name. |
| timestamp-status | Shows if the timestamp check is enabled. |

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following examples display the NTP information.

```
switch# show ntp peers
-----
Peer IP Address          Serv/Peer
-----
10.20.10.2              Server
10.20.10.0              Peer

switch# show ntp statistics io
time since reset:      11152
receive buffers:       9
free receive buffers: 9
used receive buffers: 9
low water refills:    0
dropped packets:      0
ignored packets:      0
received packets:     3
packets sent:         2
packets not sent:     0
interrupts handled:   3
received by int:      3

switch# show ntp statistics local
system uptime:        11166
time since reset:     11166
bad stratum in packet: 0
old version packets:  4
new version packets:  0
unknown version number: 0
bad packet format:    0
packets processed:    0
bad authentication:   0

switch# show ntp statistics memory
time since reset:     11475
total peer memory:    15
free peer memory:     15
calls to findpeer:    0
new peer allocations: 0
peer demobilizations: 0
hash table counts:   0 0 0 0 0 0 0 0
                    0 0 0 0 0 0 0 0
                    0 0 0 0 0 0 0 0
                    0 0 0 0 0 0 0 0

switch# show ntp statistics peer ipaddr 10.1.1.1

switch# show ntp statistics peer name Peer1

switch# show ntp timestamp-status
Linecard 9 does not support Timestamp check.
```

show port-channel

Use the **show port-channel** command to view information about existing PortChannel configurations

show port-channel compatibility-parameters | consistency (detail) | database (interface port-channel *port channel number*) | summary | usage

| Syntax Description | |
|---|--|
| compatibility-parameters | Shows compatibility parameters. |
| consistency | Verify database consistency of all modules. |
| detail | Shows port channel database information for all modules. |
| database | Shows port-channel database. |
| interface port-channel <i>port channel number</i> | Port channel number (1-128) |
| summary | Shows port-channel summary. |
| usage | Shows port-channel number usage. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays the PortChannel summary.

```
switch# show port-channel summary
NEW
```

The following example displays the PortChannel compatibility.

```
switch# show port-channel compatibility-parameters
  physical port layer          fibre channel or ethernet
  port mode                    E/TE/AUTO only
  trunk mode
  speed
  port VSAN
  port allowed VSAN list
```


The following example shows the PortChannel database.

```
switch# show port-channel database
port-channel 2
  Administrative channel mode is on
  Operational channel mode is on
  Last membership update succeeded
  First operational port is fc2/2
  1 port in total, 1 port up
  Ports:  fc2/2  [up]
```

The **show port-channel consistency** command has two options—without detail and **detail**.

Command Without Details

```
switch# show port-channel consistency
Database is consistent
switch#
```

Command With Details

```
switch# show port-channel consistency detail
Authoritative port-channel database:
=====
totally 1 port-channels
port-channel 2:
  1 ports, first operational port is fc2/2
  fc2/2  [up]
=====
database 1: from module 5
=====
totally 1 port-channels

port-channel 2:
  1 ports, first operational port is fc2/2
  fc2/2  [up]
=====
database 2: from module 2
=====
totally 1 port-channels
port-channel 2:
  1 ports, first operational port is fc2/2
  fc2/2  [up]
=====
```

The **show port-channel usage** command displays details of the used and unused PortChannel numbers.

PortChannel Usage

```
switch# show port-channel usage
Totally 2 port-channel numbers used
=====
Used   : 3, 9
Unused: 1-2, 4-8, 10-128
```

show port-security

To display configured port security feature information, use the **show port-security database** command.

```
show port-security database
  [ ( active | fwwn wwn | interface fc slot/port) vsan vsan-id ] |
  statistics vsan vsan-id |
  status | violations
```

| Syntax Description | port-security | Displays configured port security informations. |
|--------------------|--------------------------------------|--|
| | database | Displays database-related port security information |
| | statistics | Displays port security statistics. |
| | status | Displays the port security status on a per VSAN basis. |
| | violations | Displays violations in the port security database. |
| | vsan <i>vsan-id</i> | Displays information for the specified database. |
| | active | Displays the activated database information. |
| | fwwn <i>wwn</i> | Displays information for the specified fWWN. |
| | interface fc <i>slot/port</i> | Displays information for the specified interface. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines The access information for each port can be individually displayed. If you specify the fwwn or interface options, all devices that are paired in the active database (at that point) with the given fWWN or the interface are displayed.

The **show port-security** command issued with the **last number** option displays only the specified number of entries that appear first.

Examples The following example displays the contents of the port security database.

```
switch# show port-security database
-----
VSAN   Logging-in Entity                               Logging-in Point(   Interface)
-----
1      21:00:00:e0:8b:06:d9:1d(pwwn) 20:0d:00:05:30:00:95:de(fc1/13)
1      50:06:04:82:bc:01:c3:84(pwwn) 20:0c:00:05:30:00:95:de(fc1/12)
2      20:00:00:05:30:00:95:df(swwn) 20:0c:00:05:30:00:95:de(port-channel 128)
3      20:00:00:05:30:00:95:de(swwn) 20:01:00:05:30:00:95:de(fc1/1)
[Total 4 entries]
```

The following example displays the output of the activated port security database in VSAN 1.

```
switch# show port-security database vsan 1
-----
Vsan   Logging-in Entity                               Logging-in Point      (Interface)
-----
1      *                                               20:85:00:44:22:00:4a:9e (fc3/5)
1      20:11:00:33:11:00:2a:4a(pwwn) 20:81:00:44:22:00:4a:9e (fc3/1)
[Total 2 entries]
```

The following example displays the activated database.

```
switch# show port-security database active
-----
VSAN   Logging-in Entity                               Logging-in Point(     Interface)      Learnt
-----
1      21:00:00:e0:8b:06:d9:1d(pwwn) 20:0d:00:05:30:00:95:de(fc1/13)          Yes
1      50:06:04:82:bc:01:c3:84(pwwn) 20:0c:00:05:30:00:95:de(fc1/12)          Yes
2      20:00:00:05:30:00:95:df(swwn) 20:0c:00:05:30:00:95:de(port-channel 128) Yes
3      20:00:00:05:30:00:95:de(swwn) 20:01:00:05:30:00:95:de(fc1/1)
[Total 4 entries]
```

The following example displays the wildcard fwwn port security in VSAN 1.

```
switch# show port-security database fwwn 20:85:00:44:22:00:4a:9e vsan 1
Any port can login thru' this fwwn
```

The following example displays the configured FWWN port security in VSAN 1.

```
switch# show port-security database fwwn 20:01:00:05:30:00:95:de vsan 1
20:00:00:0c:88:00:4a:e2(swwn)
```

The following example displays the interface port information in VSAN 2.

```
switch# show port-security database interface fc 1/1 vsan 2
20:00:00:0c:88:00:4a:e2(swwn)
```

The following example port security statistics.

```
switch# show port-security statistics
Statistics For VSAN: 1
-----
Number of pWWN permit: 2
Number of nWWN permit: 2
Number of sWWN permit: 2
Number of pWWN deny   : 0
Number of nWWN deny   : 0
Number of sWWN deny   : 0

Total Logins permitted : 4
Total Logins denied    : 0
Statistics For VSAN: 2
-----
Number of pWWN permit: 0
Number of nWWN permit: 0
Number of sWWN permit: 2
Number of pWWN deny   : 0
Number of nWWN deny   : 0
Number of sWWN deny   : 0
...
```

The following example displays the status of the active database and the auto-learn configuration.

```
switch# show port-security status
VSAN 1 :Activated database, auto-learning is enabled
VSAN 2 :No Active database, auto-learning is disabled
...
```

The following example displays the previous 100 violations.

```
switch# show port-security violations
```

```
-----
VSAN      Interface      Logging-in Entity      Last-Time      [Repeat count]
-----
1         fc1/13         21:00:00:e0:8b:06:d9:1d(pwwn) Jul  9 08:32:20 2003 [20]
          20:00:00:e0:8b:06:d9:1d(nwwn)
1         fc1/12         50:06:04:82:bc:01:c3:84(pwwn) Jul  9 08:32:20 2003 [1]
          50:06:04:82:bc:01:c3:84(nwwn)
2         port-channel 1 20:00:00:05:30:00:95:de(swwn) Jul  9 08:32:40 2003 [1]
[Total 2 entries]
```

show processes

To show general information about all the processes, use the show processes command.

show processes [cpu | log [details | pid *process-id* | memory]

| Syntax Description | cpu | Shows processes CPU Info |
|--------------------|--------|--------------------------------------|
| | log | Shows information about process logs |
| | memory | Shows processes Memory Info |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following examples displays general information about system processes.

```
switch# show process
PID      State  PC          Start_cnt  TTY  Process
-----  -
868      S      2ae4f33e   1          -    snmpd
869      S      2acee33e   1          -    rscn
870      S      2ac36c24   1          -    qos
871      S      2ac44c24   1          -    port-channel
872      S      2ac7a33e   1          -    ntp
-        ER      -          1          -    mdog
-        NR      -          0          -    vbuilder
```

PID: process ID.

State: process state

```
D  uninterruptible sleep (usually IO)
R  runnable (on run queue)
S  sleeping
T  traced or stopped
Z  a defunct ("zombie") process
```

NR not-running

ER should be running but currently not-running

PC: Current program counter in hex format

Start_cnt: how many times a process has been started.

TTY: Terminal that controls the process. A "-" usually means a daemon not running on any particular tty.

Process: name of the process.

=====

2. show processes cpu (new output)

Description: show cpu utilization information about the processes.

switch# **show processes cpu**

| PID | Runtime(ms) | Invoked | uSecs | 1Sec | Process |
|------|-------------|---------|-------|------|-------------|
| 842 | 3807 | 137001 | 27 | 0.0 | sysmgr |
| 1112 | 1220 | 67974 | 17 | 0.0 | syslogd |
| 1269 | 220 | 13568 | 16 | 0.0 | fcfwd |
| 1276 | 2901 | 15419 | 188 | 0.0 | zone |
| 1277 | 738 | 21010 | 35 | 0.0 | xbar_client |
| 1278 | 1159 | 6789 | 170 | 0.0 | wnn |
| 1279 | 515 | 67617 | 7 | 0.0 | vsan |

Runtime(ms): cpu time the process has used, expressed in milliseconds

Invoked: Number of times the process has been invoked.

uSecs: Microseconds of CPU time in average for each process invocation.

1Sec: CPU utilization in percentage for the last 1 second.

=====

3. show processes mem

Description: show memory information about the processes.

| PID | MemAlloc | StackBase/Ptr | Process |
|------|----------|--------------------|-------------|
| 1277 | 120632 | 7ffffcd0/7ffffefe4 | xbar_client |
| 1278 | 56800 | 7ffffce0/7ffffb5c | wnn |
| 1279 | 1210220 | 7ffffce0/7ffffbac | vsan |
| 1293 | 386144 | 7ffffcf0/7ffffebd4 | span |
| 1294 | 1396892 | 7ffffce0/7ffffdff4 | snmpd |
| 1295 | 214528 | 7ffffcf0/7ffff904 | rscn |
| 1296 | 42064 | 7ffffce0/7ffffb5c | qos |

MemAlloc: total memory allocated by the process.

StackBase/Ptr: process stack base and current stack pointer in hex format

=====

3. show processes log

Description: list all the process logs

switch# **show processes log**

| Process | PID | Normal-exit | Stack-trace | Core | Log-create-time |
|---------|------|-------------|-------------|------|-----------------|
| fspf | 1339 | N | Y | N | Jan 5 04:25 |
| lcm | 1559 | N | Y | N | Jan 2 04:49 |
| rib | 1741 | N | Y | N | Jan 1 06:05 |

Normal-exit: whether or not the process exited normally.

Stack-trace: whether or not there is a stack trace in the log.

Core: whether or not there exists a core file.

Log-create-time: when the log file got generated.

The following example displays the detail log information about a particular process.

```
switch# show processes log pid 1339
Service: fspf
Description: FSPF Routing Protocol Application

Started at Sat Jan  5 03:23:44 1980 (545631 us)
Stopped at Sat Jan  5 04:25:57 1980 (819598 us)
Uptime: 1 hours 2 minutes 2 seconds

Start type: SRV_OPTION_RESTART_STATELESS (23)
Death reason: SYSMGR_DEATH_REASON_FAILURE_SIGNAL (2)
Exit code: signal 9 (no core)
CWD: /var/sysmgr/work

Virtual Memory:

CODE      08048000 - 0809A100
DATA      0809B100 - 0809B65C
BRK       0809D988 - 080CD000
STACK     7FFFFD20
TOTAL     23764 KB

Register Set:

EBX 00000005      ECX 7FFFF8CC      EDX 00000000
ESI 00000000      EDI 7FFFF6CC      EBP 7FFFF95C
EAX FFFFFFFE      XDS 8010002B      XES 0000002B
EAX 0000008E (orig) EIP 2ACE133E      XCS 00000023
EFL 00000207      ESP 7FFF654       XSS 0000002B

Stack: 1740 bytes. ESP 7FFF654, TOP 7FFFFD20

0x7FFF654: 00000000 00000008 00000003 08051E95 .....
0x7FFF664: 00000005 7FFFF8CC 00000000 00000000 .....
0x7FFF674: 7FFFF6CC 00000001 7FFFF95C 080522CD .....\"..
0x7FFF684: 7FFF9A4 00000008 7FFFC34 2AC1F18C .....4.....*
```

show qos statistics

To display the current QoS settings along with a the number of frames marked high priority, use the **show qos statistics** command.

show qos statistics

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays configures QoS statistics.

```
switch# show qos statistics  
Total number of FC frames transmitted from the Supervisor= 15767  
Number of highest-priority FC frames transmitted = 8224  
Current priority of FC control frames = 0 (0 = lowest; 7 = highest)
```


show radius-server

To display all configured RADIUS server parameters, use the **show radius-server** command.

show radius-server

| | |
|---------------------------|---|
| Syntax Description | This command has no keywords or arguments. |
| Defaults | None. |
| Command Modes | EXEC mode. |
| Command History | This command was introduced in Cisco MDS SAN-OS Release 1.0(2). |
| Usage Guidelines | Only administrators can view the RADIUS pre-shared key. |

Examples

```
switch# show radius-server
Global RADIUS shared secret:Myxgqc
retransmission count:5
timeout value:10

following RADIUS servers are configured:
  myradius.cisco.users.com:
    available for authentication on port:1812
    available for accounting on port:1813
  172.22.91.37:
    available for authentication on port:1812
    available for accounting on port:1813
    RADIUS shared secret:23MHcUnD
  10.10.0.0:
    available for authentication on port:1812
    available for accounting on port:1813
    RADIUS shared secret:hostkey----> for administrators only
```

show role

To display rules (and their associated rules) configured on the switch, including those roles that have not yet been committed to persistent storage, use the **show role** command.

show role [*name string*]

| Syntax Description | name <i>string</i> | The name of the role for which you want to display information. |
|--------------------|---------------------------|---|
|--------------------|---------------------------|---|

| Defaults | None. |
|----------|-------|
|----------|-------|

| Command Modes | EXEC mode. |
|---------------|------------|
|---------------|------------|

| Command History | This command was introduced in Cisco MDS SAN-OS Release 1.0(2). |
|-----------------|---|
|-----------------|---|

| Usage Guidelines | The rules are displayed by rule number and are based on each role. All roles are displayed even if role name is not specified. |
|------------------|--|
|------------------|--|

Only network-admin role can access this command.

Examples

```
switch# show role
Role: network-admin
Description: Predefined Network Admin group. This role cannot be modified
Access to all the switch commands

Role: network-operator
Description: Predefined Network Operator group. This role cannot be modified
Access to Show commands and selected Exec commands

Role: sangroup
Description: SAN management group
-----
Rule  Type  Command-type  Feature
-----
1.   permit  config        *
2.   deny    config        fspf
3.   permit  debug        zone
4.   permit  exec         fcping
```

show rscn

To display RSCN information, use the **show rscn** command.

```
show rscn [scr-table vsan vsan-range | statistics vsan vsan-range]
```

| Syntax Description | | |
|--------------------|-------------------------------|---|
| | scr-table | Shows State Change Registration table. |
| | statistics | Shows RSCN statistics. |
| | vsan <i>vsan-range</i> | Range of the required VSANs (from 1 to 4093). |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines The SCR table cannot be configured, it is only populated if one or more Nx ports send SCR frames to register for RSCN information. If the **show rscn scr-table** command does not return any entries, no Nx port is interested in receiving RSCN information.

Examples The following examples display RSCN information.

```
switch# show rscn scr-table vsan 1
SCR table for VSAN: 1
-----
FC-ID           REGISTERED FOR
-----
0x1b0300       fabric detected rscns

Total number of entries = 1
```

```
switch# show rscn statistics vsan 1
```

```
Statistics for VSAN: 1
```

```
-----
```

```
Number of SCR received      = 0
Number of SCR ACC sent      = 0
Number of SCR RJT sent      = 0
Number of RSCN received     = 0
Number of RSCN sent         = 0
Number of RSCN ACC received = 0
Number of RSCN ACC sent     = 0
Number of RSCN RJT received = 0
Number of RSCN RJT sent     = 0
Number of SW-RSCN received  = 0
Number of SW-RSCN sent      = 0
Number of SW-RSCN ACC received = 0
Number of SW-RSCN ACC sent  = 0
Number of SW-RSCN RJT received = 0
Number of SW-RSCN RJT sent  = 0
```

show running-config

To view the running configuration file, use the **show running-config** command

show running-config [diff]

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines If the running configuration is different from the startup configuration, issue the **show startup-config** command to view the ASCII version of the current startup configuration that was used to boot the switch.

Examples The following example displays the configuration currently running on the switch.

```
switch# show running-config
Building Configuration ...
  interface fc1/1
  interface fc1/2
  interface fc1/3
  interface fc1/4
  interface mgmt0
ip address 172.22.95.112 255.255.255.0
no shutdown
vsan database
boot system bootflash:isan-237; sup-1
boot kickstart bootflash:boot-237 sup-1
callhome
ip default-gateway 172.22.95.1
switchname switch
trunk protocol enable
username admin password 5 /AFDAMD4B2xK2 role network-admin
```

show scsi-target

Use the **show scsi target** command to view specific information about existing SCSI configurations.

```
show scsi target {devices [vsan vsan-range | fcid fcid-id] | disk [vsan vsan-range | fcid fcid-id] |
lun [vsan vsan-range | fcid fcid-id] | status | tape [vsan vsan-range | fcid fcid-id]}
```

Syntax Description

| | |
|-------------------------------|---|
| devices | Shows discovered scsi-target devices information |
| disk | Shows discovered disk information. |
| lun | Shows discovered SCSI target LUN information. |
| vsan <i>vsan-range</i> | Specifies the VSAN ID or VSAN range (from 1 to 4093). |
| fcid <i>fcid-id</i> | Specifies the FCID of the SCSI target to display. |
| status | Shows SCSI target discovery status. |
| tape | Shows discovered tape information |

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the status of a SCSI discovery.

```
switch# show scsi-target status
discovery completed
```

The following example displays discovered disk information.

```
switch# show scsi-target disk
-----
VSAN      FCID      PWWN      VENDOR    MODEL      REV
-----
1         0x9c03d6  21:00:00:20:37:46:78:97  Company 4  ST318203FC  0004
1         0x9c03d9  21:00:00:20:37:5b:cf:b9  Company 4  ST318203FC  0004
1         0x9c03da  21:00:00:20:37:18:6f:90  Company 4  ST318203FC  0004
1         0x9c03dc  21:00:00:20:37:5a:5b:27  Company 4  ST318203FC  0004
1         0x9c03e0  21:00:00:20:37:36:0b:4d  Company 4  ST318203FC  0004
1         0x9c03e1  21:00:00:20:37:39:90:6a  Company 4  ST318203  CLAR18  3844
1         0x9c03e2  21:00:00:20:37:18:d2:45  Company 4  ST318203  CLAR18  3844
1         0x9c03e4  21:00:00:20:37:6b:d7:18  Company 4  ST318203  CLAR18  3844
1         0x9c03e8  21:00:00:20:37:38:a7:c1  Company 4  ST318203FC  0004
1         0x9c03ef  21:00:00:20:37:18:17:d2  Company 4  ST318203FC  0004
```

The following example displays the discovered LUNs.

```
switch# show scsi-target lun
- ST318203FC      from Company 4 (Rev 0004)
  FCID is 0x9c03d6 in VSAN 1, PWWN is 21:00:00:20:37:46:78:97
-----
LUN      Capacity  Status Serial Number      Device-Id
      (MB)
-----
0x0      18210      Online LRA2510000007027 C:1 A:0 T:3 20:00:00:20:37:46:78:97
- ST318203FC      from Company 4 (Rev 0004)
  FCID is 0x9c03d9 in VSAN 1, PWWN is 21:00:00:20:37:5b:cf:b9
-----
LUN      Capacity  Status Serial Number      Device-Id
      (MB)
-----
0x0      18210      Online LR94873000007029 C:1 A:0 T:3 20:00:00:20:37:5b:cf:b9
- ST318203FC      from Company 4 (Rev 0004)
  FCID is 0x9c03da in VSAN 1, PWWN is 21:00:00:20:37:18:6f:90
-----
LUN      Capacity  Status Serial Number      Device-Id
      (MB)
-----
0x0      18210      Online LR18591800001004 C:1 A:0 T:3 20:00:00:20:37:18:6f:90
- ST318203FC      from Company 4 (Rev 0004)
  FCID is 0x9c03dc in VSAN 1, PWWN is 21:00:00:20:37:5a:5b:27
-----
LUN      Capacity  Status Serial Number      Device-Id
      (MB)
-----
0x0      18210      Online LRC44982000007031 C:1 A:0 T:3 20:00:00:20:37:5a:5b:27
- ST318203FC      from Company 4 (Rev 0004)
  FCID is 0x9c03e0 in VSAN 1, PWWN is 21:00:00:20:37:36:0b:4d
-----
LUN      Capacity  Status Serial Number      Device-Id
      (MB)
-----
0x0      18210      Online LR181847000007024 C:1 A:0 T:3 20:00:00:20:37:36:0b:4d
- ST318203 CLAR18 from Company 4 (Rev 3844)
  FCID is 0x9c03e1 in VSAN 1, PWWN is 21:00:00:20:37:39:90:6a
-----
LUN      Capacity  Status Serial Number      Device-Id
      (MB)
-----
0x0      18200      Online LR64147100001017 C:1 A:0 T:3 20:00:00:20:37:39:90:6a
- ST318203 CLAR18 from Company 2 (Rev 3844)
  FCID is 0x9c03e2 in VSAN 1, PWWN is 21:00:00:20:37:18:d2:45
-----
LUN      Capacity  Status Serial Number      Device-Id
      (MB)
-----
0x0      18200      Online LR28349500001952 C:1 A:0 T:3 20:00:00:20:37:18:d2:45
- ST318203 CLAR18 from Company 2 (Rev 3844)
  FCID is 0x9c03e4 in VSAN 1, PWWN is 21:00:00:20:37:6b:d7:18
-----
LUN      Capacity  Status Serial Number      Device-Id
      (MB)
-----
0x0      18200      Online LRF7150500001041 C:1 A:0 T:3 20:00:00:20:37:6b:d7:18
- ST318203FC      from Company 2 (Rev 0004)
  FCID is 0x9c03e8 in VSAN 1, PWWN is 21:00:00:20:37:38:a7:c1
-----
```

■ show scsi-target

```

LUN      Capacity  Status Serial Number   Device-Id
      (MB)
-----
0x0      18210      Online LR43588300001011 C:1 A:0 T:3 20:00:00:20:37:38:a7:c1
- ST318203FC      from Company 2 (Rev 0004)
  FCID is 0x9c03ef in VSAN 1, PWWN is 21:00:00:20:37:18:17:d2
-----
LUN      Capacity  Status Serial Number   Device-Id
      (MB)
-----
0x0      18210      Online LR06903200001949 C:1 A:0 T:3 20:00:00:20:37:18:17:d2
```


show snmp

The **show snmp** command displays the count information for all SNMP settings.

show snmp [community | host | user]

| Syntax | Description |
|------------------|-------------------------------|
| community | Shows SNMP community strings. |
| host | Shows snmp hosts. |
| user | Shows SNMPv3 users. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays SNMP information.

```
switch# show snmp
sys contact:
sys location:

1631 SNMP packets input
    0 Bad SNMP versions
    0 Unknown community name
    0 Illegal operation for community name supplied
    0 Encoding errors
    64294 Number of requested variables
    1 Number of altered variables
    1628 Get-request PDUs
    0 Get-next PDUs
    1 Set-request PDUs
152725 SNMP packets output
    0 Too big errors
    1 No such name errors
    0 Bad values errors
    0 General errors

Community                               Access
-----                               -
public                                   rw

User                                     Group                                     Auth   Priv
---                                     ---                                     ---   ---
admin                                    network-admin                             md5    no
```

The following example displays SNMP user details.

```
switch# show snmp user
User                               Group                               Auth  Priv
-----                               -----                               ----  ----
steve                               network-admin                       md5   des
sadmin                              network-admin                       md5   des
stever                               network-operator                     md5   des
```

The following example displays SNMP community information.

```
switch# show snmp community
Community                           Access
-----                           -
private                              rw
public                               ro
v93RACqPNH                          ro
```

The following example displays SNMP host information.

```
switch# show snmp host
Host                                Port  Version  Level  Type  SecName
-----                                ---  -
171.16.126.34                      2162  v2c      noauth trap  public
171.16.75.106                       2162  v2c      noauth trap  public
171.31.124.81                       2162  v2c      noauth trap  public
171.31.157.193                      2162  v2c      noauth trap  public
171.31.157.98                       2162  v2c      noauth trap  public
171.31.49.25                        2162  v2c      noauth trap  public
171.31.49.32                        2188  v2c      noauth trap  public
171.31.49.49                        2162  v2c      noauth trap  public
171.31.49.49                        3514  v2c      noauth trap  public
171.31.49.54                        2162  v2c      noauth trap  public
171.31.58.54                        2162  v2c      noauth trap  public
171.31.58.81                        2162  v2c      noauth trap  public
171.31.58.97                        1635  v2c      noauth trap  public
171.31.58.97                        2162  v2c      auth   trap   public
171.31.58.97                        3545  v2c      auth   trap   public
172.22.00.43                        2162  v2c      noauth trap  public
172.22.00.65                        2162  v2c      noauth trap  public
172.22.05.234                      2162  v2c      noauth trap  public
172.22.05.98                        1050  v2c      noauth trap  public
```

show span session

Use the **show span session** command to view specific information about a SPAN session.

show span session [*session-id* [**brief**] | **brief**]

| Syntax Description | session | Shows SPAN session configuration. |
|--------------------|-------------------|---|
| | <i>session-id</i> | SPAN session ID (1-16). |
| | brief | Shows SPAN session configuration in brief format. |

Defaults None.

Command Modes EXEC mode.

Command History This command was modified in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines None.

Examples The following example displays SPAN sessions in a brief format.

```
switch# show span session brief
-----
Session Admin      Oper      Destination
         State      State      Interface
-----
 7         no suspend  active    fc2/7
```

The following example displays a specific SPAN session details.

```
switch# show span session 7
Session 7 (active)
  Destination is fc2/7
  No session filters configured
  No ingress (rx) sources
  Egress (tx) sources are
    port-channel 7,
```

The following example displays all SPAN sessions.

```
switch# show span session
Session 1 (inactive as no destination)
Destination is not specified
  Session filter vsans are 1
  No ingress (rx) sources
  No egress (tx) sources

Session 2 (active)
Destination is fc9/5
No session filters configured
Ingress (rx) sources are
  vsans 1
  sup-fc0,
Egress (tx) sources are
  sup-fc0,
```

The following example displays a SPAN session mapped to a FC tunnel interface.

```
switch# show span session
Session 2 (active)
  Destination is fc-tunnel 100
No session filters configured
Ingress (rx) sources are
  fc2/16,
Egress (tx) sources are
  fc2/16,
```

show sprom

To show vendor ID, product's component attributes, serial number information that can be used to track field replaceable units, use the **show sprom** command.

show sprom sup

show sprom clock *clock-module-index*

show sprom backplane *backplane-index*

show sprom module *module-number sprom-index*

show sprom fan

show sprom powersupply *powersupply-index*

show sprom mgmt-module

| Syntax Description | | |
|--|--|---|
| sup | | Display Vendor ID, product's component attributes for the current supervisor module |
| module <i>module-number</i> <i>sprom-index</i> | | Display Vendor ID, product's component attributes for the given switching module. There can be up to 4 sub-components in a module. Each of them will have a SPROM associated with it. |
| clock clock-module-index> | | Display attributes of the clock module. There are two clock modules in a switch. This module is absent in MDS9216 type switch. |
| backplane <backplane-index> | | Display attributes that can be used to uniquely identify a switch. |
| powersupply <powersupply-index> | | Displays attributes of the first or the second power-supply. This contains information about the powersupply capacity in watts when it is used in 110Volts and 220Volts respectively. This information is used for power-budget allocation. |
| fan | | Display attributes that uniquely identified fan. |
| mgmt-module | | Display attributes of management module. This module is only present in MDS9216 type switch. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

Use the **show sprom** command to get unique information about a specific module, supervisor module, switch, power-supply module, or a fan module. If the customer needs to report a problem with a module, supervisor module, switch, power-supply module, or a fan module and does not have access to management station, then he can extract serial number information from **show sprom**.

Examples

The following example displays management module information. This module and command are specific to the Cisco MDS 9216 switch.

```
switch# show sprom mgmt-module
DISPLAY SAM sprom contents:
Common block:
  Block Signature :0xabab
  Block Version   :2
  Block Length    :156
  Block Checksum  :0x1295
  EEPROM Size     :0
  Block Count     :2
  FRU Major Type  :0x0
  FRU Minor Type  :0x0
  OEM String      :Cisco Systems Inc
  Product Number  :SAM SMITH
  Serial Number   :12345678901
  Part Number     :SAM-SMITH-06
  Part Revision   :A0
  Mfg Deviation   :
  H/W Version     :1.0
  Mfg Bits        :1
  Engineer Use    :0
  snmpOID         :0.0.0.0.0.0.0.0
  Power Consump   :~-200
  RMA Code        :0-0-0-0
Linecard Module specific block:
  Block Signature :0x6003
  Block Version   :2
  Block Length    :103
  Block Checksum  :0x3c7
  Feature Bits    :0x0
  HW Changes Bits :0x0
  Card Index      :9009
  MAC Addresses   :00-12-34-56-78-90
  Number of MACs  :4
  Number of EOBC links :4
  Number of EPLD  :0
  Port Type-Num   :200-16
  SRAM size       :0
  Sensor #1       :0,0
  Sensor #2       :0,0
  Sensor #3       :0,0
  Sensor #4       :0,0
  Sensor #5       :0,0
  Sensor #6       :0,0
  Sensor #7       :0,0
  Sensor #8       :0,0
```

The following command displays supervisor module information.

```
switch# show sprom sup
DISPLAY supervisor sprom contents:
Common block:
Block Signature : 0xabab
Block Version   : 2
Block Length    : 156
Block Checksum  : 0x10a8
EEPROM Size     : 512
Block Count     : 2
FRU Major Type  : 0x6002
FRU Minor Type  : 0x7d0
OEM String      : Cisco Systems
Product Number  : DS-X9530-SF1-K9
Serial Number   : abcdefgh
Part Number     : 73-7523-06
Part Revision   : 0.0
Mfg Deviation   : 0.0
H/W Version     : 0.0
Mfg Bits        : 0
Engineer Use    : 0
snmpOID        : 9.5.1.3.1.1.2.2000
Power Consump   : -524
RMA Code        : 0-0-0-0
Supervisor Module specific block:
Block Signature : 0x6002
Block Version   : 2
Block Length    : 103
Block Checksum  : 0x927
Feature Bits    : 0x0
HW Changes Bits : 0x0
Card Index      : 9003
MAC Addresses   : 00-05-30-00-18-be
Number of MACs  : 4
Number of EPLD : 1
EPLD A         : 0x0
Sensor #1      : 75,60
Sensor #2      : 60,55
Sensor #3      : -127,-127
Sensor #4      : -127,-127
Sensor #5      : -128,-128
Sensor #6      : -128,-128
Sensor #7      : -128,-128
Sensor #8      : -128,-128
```

Related Commands

| Command | Description |
|----------------------|---|
| show hardware | Displays brief information about the list of field replaceable units in the switch. |

show ssh

Use the **show ssh key** command to display the host key pair details for the specified key or for all keys, if no key is specified. Use the **show ssh server** command to display the status of the SSH protocol (enabled or disabled) and the versions that are enabled for that switch. `show ssh key`

show ssh [key [dsa | rsa | rsa1] | server]

| Syntax Description | key | Shows ssh keys. |
|--------------------|---------------|---|
| | server | Shows whether ssh server is enabled or not. |
| | dsa | Shows dsa ssh keys. |
| | rsa | Shows rsa ssh keys. |
| | rsa1 | Shows rsa1 ssh keys. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays SSH protocol status.

```
switch# show ssh server
ssh is enabled
version 1 enabled
version 2 enabled
```


The following example displays Host Key Pair details.

```
switch# show ssh key
rsa1 Keys generated:Sun Jan 13 07:16:26 1980

1024 35

fingerprint:
1024 67:76:02:bd:3e:8d:f5:ad:59:5a:1e:c4:5e:44:03:07

could not retrieve rsa key information

dsa Keys generated:Sun Jan 13 07:40:08 1980

ssh-dss AAAAB3NzaC1kc3MAAABBAJTCRQOydNRel2v7uiO6Fix+OTn8eGdnnDVxw5eJs50cOEXOyjaW
cMMYsEgxc9ada1NElp8Wy7GPMWGOQYj9CU0AAAAMCcWhNN18zFNOIPo7cU3t7d0iEbAAAAQBdQ8UAO
i/Cti84qFb3kTqXlS9mEhdQUo0lHcH5bw5PKfj2Y/dLR437zCBKXetPj4p7mhQ6Fq5os8RZtJEyOsNsA
AABAA0oxZbPyWeR5NHATXiyXdPI7j9i8fgyn9FNipMkOF2Mn75Mi/lqQ4NIq0gQNvQOx27uCeQlRts/Q
wI4q68/eaw==

fingerprint:
512 f7:cc:90:3d:f5:8a:a9:ca:48:76:9f:f8:6e:71:d4:ae
```

show startup-config

To view the startup configuration file, use the **show startup-config** command

show startup-config [log]

| Syntax Description | log | Displays execution log of last used ascii startup configuration. |
|--------------------|-----|--|
|--------------------|-----|--|

| Defaults | None. |
|----------|-------|
|----------|-------|

| Command Modes | EXEC mode. |
|---------------|------------|
|---------------|------------|

| Command History | This command was introduced in Cisco MDS SAN-OS Release 1.0(2). |
|-----------------|---|
|-----------------|---|

| Usage Guidelines | None. |
|------------------|-------|
|------------------|-------|

| Examples | The following example displays the switch configuration at startup. |
|----------|---|
|----------|---|

```
switch# show startup-config
vsan database
vsan 2
vsan 3
vsan 4
vsan 5
vsan 31
vsan 32 suspend
vsan 100
vsan 300

    interface port-channel 1
    switchport mode E
    switchport trunk mode off

    interface port-channel 2
    fspf cost 100 vsan 2
    switchport mode E
    no switchport trunk allowed vsan all
    switchport trunk allowed vsan add 1-99
    switchport trunk allowed vsan add 101-4093

    interface port-channel 3
    switchport mode E
    switchport trunk mode off

    interface port-channel 4
    switchport mode E
    no switchport trunk allowed vsan all
    switchport trunk allowed vsan add 1-99
    switchport trunk allowed vsan add 101-4093
```

```
interface port-channel 5
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-10
interface port-channel 5
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-10

interface port-channel 8
switchport mode E

interface vsan1

no shutdown

snmp-server community public rw
snmp-server user admin network-admin auth md5 0xe84b06201ae3bfb726a2eab9f485eb57
  localizedkey
snmp-server host 171.69.126.34 traps version 2c public udp-port 2162
snmp-server host 171.69.75.106 traps version 2c public udp-port 2162
vsan database
vsan 3 interface fc2/9
vsan 3 interface fc2/14
vsan 5 interface fc9/11
vsan 2 interface fc9/12
vsan 3 interface port-channel 3
vsan 3 interface port-channel 4
vsan 100 interface port-channel 8

boot system bootflash:/isan-8b-u sup-1
boot kickstart bootflash:/boot-3b sup-1
boot system bootflash:/isan-8b-u sup-2
boot kickstart bootflash:/boot-3b sup-2

ip default-gateway 172.22.90.1
power redundancy-mode combined force

username admin password 5 HyLyYqb4.q74Y role network-admin
zone name Z1 vsan 1
  member pwn 10:00:00:00:77:99:60:2c
  member pwn 21:00:00:20:37:a6:be:14

zone default-zone permit vsan 1
zoneset distribute full vsan 51-58

zoneset name ZS1 vsan 1
  member Z1

zoneset activate name ZS1 vsan 1

interface fc2/1
switchport mode E
switchport trunk mode off
no shutdown

interface fc2/2

interface fc2/3
channel-group 1 force
no shutdown
```

```
interface fc2/6
channel-group 2 force
no shutdown

    interface fc2/7
switchport mode E
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-25

interface fc2/9
switchport mode E
switchport trunk mode off
no shutdown

    interface fc2/10
channel-group 3 force
no shutdown

    interface fc2/12
channel-group 4 force
no shutdown

    interface fc2/14
switchport mode E
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093

    interface fc2/15
channel-group 6 force
no shutdown

    interface fc2/16
channel-group 6 force
no shutdown
.
.
.
interface fc9/10
switchport mode F
no shutdown

    interface fc9/11
switchport trunk mode off
no shutdown

    interface fc9/12
switchport mode E
switchport speed 1000
switchport trunk mode off
no shutdown

    interface fc9/15
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093
```

```
interface fc9/16
switchport mode FL
no shutdown

interface mgmt0
ip address 172.22.90.38 255.255.255.0
no shutdown
```

show switchname

To view the switch's network name, use the **show switchname** command.

show switchname

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays the name of the switch.

```
switch# show switchname  
switch-123
```

show system

To show the system information use the **show system** command.

show system autosync | cores | default switchport | directory information | error-id [list | hex] | exception-info | health | redundancy status | reset-reason [module *number*] | resources | uptime

| Syntax | Description |
|------------------------------|--|
| autosync | Shows image autosync status. |
| cores | Displays core transfer option. |
| default switchport | Shows system default values. |
| directory information | Directory information of System Manager. |
| error-id | Shows description about errors. |
| exception-info | Shows last exception log information. |
| health | Shows dta to reflect the health of the system. |
| redundancy status | Redundancy status. |
| reset-reason | Shows the last four reset reason codes. |
| module <i>number</i> | Specifies the module number to display the reset-reason codes. |
| resources | Show the CPU and memory statistics. |
| uptime | Shows how long the system has been up and running. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines Use the **show system redundancy status** command to ensure that the system is ready to accept a switchover.

Examples The following example displays the system redundancy status.

```
switch# show system redundancy status
Redundancy mode
-----
      administrative:  HA
      operational:    None

This supervisor (sup-2)
-----
Redundancy state:    Active
Supervisor state:   Active
Internal state:     Active with no standby
```

```
Other supervisor (sup-1)
-----
Redundancy state: Not present
```

The following example displays the default switch port states.

```
switch# show system default switchport
System default port state is down
System default trunk mode is on
```

The following example displays error information for a specified ID.

```
switch# show system error-id 0x401D0019
Error Facility: module
Error Description: Failed to stop Linecard Async Notification.
```

The following example displays the system health information.

```
switch# show system health
System Health Services iteration frequency 5 seconds
Active SUP arbiter is Working
Active SUP bootflash is Working
```

The following example displays the system reset information.

```
switch# show system reset reason
----- reset reason for module 6 -----
1) At 520267 usecs after Tue Aug 5 16:06:24 1980
   Reason: Reset Requested by CLI command reload
   Service:
   Version: 1.2(0.73a)
2) At 653268 usecs after Tue Aug 5 15:35:24 1980
   Reason: Reset Requested by CLI command reload
   Service:
   Version: 1.2(0.45c)
3) No time
   Reason: Unknown
   Service:
   Version: 1.2(0.45c)
4) At 415855 usecs after Sat Aug 2 22:42:43 1980
   Reason: Power down triggered due to major temperature alarm
   Service:
   Version: 1.2(0.45c)
```

The following example displays system-related CPU and memory statistics.

```
switch# show system resources
Load average: 1 minute: 0.43 5 minutes: 0.17 15 minutes: 0.11
Processes : 100 total, 2 running
CPU states : 0.0% user, 0.0% kernel, 100.0% idle
Memory usage: 1027628K total, 313424K used, 714204K free
               3620K buffers, 22278K cache
```

The following example displays the system uptime.

```
switch# show system uptime
Start Time: Sun Oct 13 18:09:23 2030
Up Time: 0 days, 9 hours, 46 minutes, 26 seconds
```

Use the **show system cores** command to display the currently configured scheme for copying cores.

```
switch# show system cores
Transfer of cores is enabled
```


show tech-support

Use the **show tech-support** command to display information useful to TAC when reporting a problem.

show tech-support [**details** | **interface** | **module** | **vsan** *vsan-id*]

| Syntax Description | | |
|--------------------|------------------|--|
| | details | Provides detailed information for each show command |
| | interface | Display interface status and configuration information |
| | module | Display module status information |
| | vsan | Display vsan status and configuration information |
| | <i>vsan-id</i> | The ID of the VSAN is from 1 to 4093. |

Defaults

The default displays output on a per-command basis, with each command being the title of the output that follows. A line separates the output from the next command. The software removes passwords and other security information.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

The **show tech-support** command is a compilation of several **show** commands and can be quite lengthy. For a sample display of the output of the **show tech-support** command, see the individual command explanation for the following commands.

If you enter the **show tech-support** command without arguments, the output displays the equivalent of all the following **show** commands.

- **show version**
- **show environment**
- **show module**
- **show hardware**
- **show running-config**
- **show interface**
- **show accounting log**
- **show process**
- **show process log**
- **show processes log details**

Examples

switch# sho tech-support module 1

```
'terminal length 0'
```

```
'show module '
```

| Mod | Ports | Module-Type | Model | Status |
|-----|-------|------------------------|-----------------|----------|
| 1 | 16 | 1/2 Gbps FC/Supervisor | DS-X9216-K9-SUP | active * |
| 2 | 32 | 1/2 Gbps FC Module | DS-X9032 | ok |

| Mod | Sw | Hw | World-Wide-Name(s) (WWN) |
|-----|------------|-----|--|
| 1 | 1.0(0.271) | 0.0 | 20:01:00:05:30:00:21:9e to 20:10:00:05:30:00:21:9e |
| 2 | 1.0(0.271) | 0.0 | 20:41:00:05:30:00:21:9e to 20:60:00:05:30:00:21:9e |

| Mod | MAC-Address(es) | Serial-Num |
|-----|--|------------|
| 1 | 00-05-30-00-40-b6 to 00-05-30-00-40-ba | |
| 2 | 00-05-30-00-11-22 to 00-05-30-00-11-26 | |

* this terminal session

```
'show environment'
```

```
Clock:
```

| Clock | Model | Hw | Status |
|-------|--------------|----|------------|
| A | Clock Module | -- | ok/active |
| B | Clock Module | -- | ok/standby |

```
Fan:
```

| Fan | Model | Hw | Status |
|---------|--------------|-----|--------|
| Chassis | DS-2SLOT-FAN | 0.0 | ok |
| PS-1 | -- | -- | ok |
| PS-2 | -- | -- | absent |

```
Temperature:
```

| Module | Sensor | MajorThresh (Celsius) | MinorThres (Celsius) | CurTemp (Celsius) | Status |
|--------|--------|-----------------------|----------------------|-------------------|--------|
| 1 | 1 | 75 | 60 | 30 | ok |
| 1 | 2 | 65 | 50 | 28 | ok |
| 1 | 3 | -127 | -127 | 40 | ok |
| 1 | 4 | -127 | -127 | 36 | ok |
| 2 | 1 | 75 | 60 | 32 | ok |
| 2 | 2 | 65 | 50 | 26 | ok |
| 2 | 3 | -127 | -127 | 41 | ok |
| 2 | 4 | -127 | -127 | 31 | ok |

Power Supply:

```

-----
PS  Model                Power      Power      Status
      (Watts)      (Amp @42V)
-----
1   WS-CAC-950W          919.38     21.89      ok
2                                     --         --         absent

```

```

Mod Model                Power      Power      Power      Power      Status
      Requested Requested  Allocated Allocated
      (Watts)      (Amp @42V) (Watts)      (Amp @42V)
-----
1   DS-X9216-K9-SUP      220.08     5.24       220.08     5.24       powered-up
2   DS-X9032             199.92     4.76       199.92     4.76       powered-up

```

Power Usage Summary:

```

-----
Power Supply redundancy mode:                redundant

Total Power Capacity                        919.38  W

Power reserved for Supervisor(s) [-]        220.08  W
Power reserved for Fan Module(s) [-]        47.88   W
Power currently used by Modules [-]         199.92  W

-----
Total Power Available                        451.50

```

show telnet server

The **show telnet server** command displays the state of the Telnet access configuration.

show telnet server

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples

```
switch# show telnet server
telnet service enabled
```

show terminal

To view the terminal information, use the **show terminal** command

show terminal

| | |
|---------------------------|--|
| Syntax Description | This command has no arguments or keywords. |
| Defaults | None. |
| Command Modes | EXEC mode. |
| Command History | This command was introduced in Cisco MDS SAN-OS Release 1.0(2). |
| Usage Guidelines | None. |
| Examples | <p>The following example displays terminal information.</p> <pre>switch# show terminal TTY: Type: "vt100" Length: 25 lines, Width: 80 columns Session Timeout: 30 minutes</pre> |

show tlport

To view configured TL port information, use the **show tlport** command

```
show tlport {discapp [fcid fcid-id | verbose | vsan vsan-id] | interface [all | private | proxied | topology | unsupported] | list [vsan vsan-id]}
```

| Syntax Description | | |
|----------------------------|--|--|
| discapp | | Shows private N port parameters. |
| fcid <i>fcid-id</i> | | Specifies the FCID of the N port. |
| verbose | | Specifies the verbose mode. |
| vsan <i>vsan-id</i> | | Specifies the N port VSAN. |
| interface | | Shows TL ports in the selected interface. |
| all | | Shows all proxied & private devices on this TL Port. |
| private | | Shows all private devices on this TL Port. |
| proxied | | Shows all proxied devices on this TL Port. |
| topology | | Shows loop topology for this TL Port. |
| unsupported | | Shows all unsupported devices on this TL Port. |
| list | | Shows TL ports in all VSANs. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines The **show tlport** command displays the TL port interface configurations. This command provides a list of all TL ports configured on a box and shows the associated VSAN, the FC ID for the port (only domain and area are valid), and the current operational state of the TL port (up or initializing).

Examples The following example displays the TL ports in all VSANs

```
switch# show tlport list
-----
Interface Vsan FC-ID    State
-----
fc1/16    1    0x420000 Init
fc2/26    1    0x150000 Up
```

The following example displays the detailed information for a specific TL port

```
switch# show tlport interface fc1/16 all
fc1/16 is up, vsan 1, FCID 0x420000
```

```

-----
alpa pWWN                nWWN                SCSI Type Device  FC-ID
-----
0x01 20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator Proxied 0xffffc42
0x73 22:00:00:20:37:39:ae:54 20:00:00:20:37:39:ae:54 Target    Private 0x420073
0xef 20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator Switch 0x0000ef

```

The following example displays TL port information for private devices

```

switch# show tlport int fc1/16 pri
fc1/16 is up, vsan 1, FCID 0x420000
-----
alpa pWWN                nWWN                SCSI Type FC-ID
-----
0x73 22:00:00:20:37:39:ae:54 20:00:00:20:37:39:ae:54 Target    0x420073
0x74 22:00:00:20:37:38:d3:de 20:00:00:20:37:38:d3:de Target    0x420074

```

The following example displays TL port information for proxied devices

```

switch# show tlport int fc1/16 prox
fc1/16 is up, vsan 1, FCID 0x420000
-----
alpa pWWN                nWWN                SCSI Type FC-ID
-----
0x01 20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator 0xffffc42
0x02 21:00:00:e0:8b:01:95:e7 20:00:00:e0:8b:01:95:e7 Initiator 0x420100

```

show trunk protocol

To show trunk protocol information, use the **show trunk protocol** command.

show trunk protocol

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays trunk protocol

```
switch# show trunk protocol  
Trunk protocol is enabled
```


show user-account

Use the **show user-account** command to display configured information about user accounts.

show user-account [*user-name*]

| | | |
|---------------------------|------------------|--|
| Syntax Description | <i>user-name</i> | Displays the user account information for the specified user name. |
|---------------------------|------------------|--|

| | |
|-----------------|-------|
| Defaults | None. |
|-----------------|-------|

| | |
|----------------------|------------|
| Command Modes | EXEC mode. |
|----------------------|------------|

| | |
|------------------------|---|
| Command History | This command was introduced in Cisco MDS SAN-OS Release 1.0(2). |
|------------------------|---|

| | |
|-------------------------|-------|
| Usage Guidelines | None. |
|-------------------------|-------|

| | |
|-----------------|--|
| Examples | The following example displays information for a specified user. |
|-----------------|--|

```
switch# show user-account user1
user:user1
    this user account has no expiry date
    roles:network-operator
no password set. Local login not allowed
Remote login through RADIUS is possible
```

The following example displays information for all users.

```
switch# show user-account
show user-account
user:admin
    this user account has no expiry date
    roles:network-admin

user:usam
    expires on Sat May 31 00:00:00 2003
    roles:network-admin network-operator

user:msam
    this user account has no expiry date
    roles:network-operator

user:user1
    this user account has no expiry date
    roles:network-operator
no password set. local login not allowed
Remote login through RADIUS is possible
```

show users

The **show users** command displays all users currently accessing the switch.

show users

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays all users.

```
switch# show users
switch# show users
admin    pts/7          Jan 12 20:56 (10.77.202.149)
admin    pts/9          Jan 12 23:29 (modena.cisco.com)
admin    pts/10         Jan 13 03:05 (dhcp-171-71-58-120.cisco.com)
admin    pts/11         Jan 13 01:53 (dhcp-171-71-49-49.cisco.com)
```

show version

To show the version of system software that is currently running on the switch, use the **show version** command.

```
show version {detail | image [bootflash: | slot0:]image-filename | [module module-number { epld}
[ epld url ] }
```

| Syntax Description | | |
|-----------------------|--|--|
| detail | | Shows the software version. |
| image | | Shows the software version of a given image. |
| bootflash: | | Source location for internal bootflash memory |
| slot0: | | Source location for the CompactFlash memory or PCMCIA card. |
| <i>image-filename</i> | | The name of the system or kickstart image. |
| module | | Shows the software version of a module. |
| <i>module-number</i> | | Slot number in which the required module resides. |
| epld | | Shows all current versions of EPLDs on a specified module. |
| epld url | | Shows all EPLD versions that are available at the specified URL (bootflash:, ftp:, scp:, sftp:, slot0:, tftp:, or volatile:) |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2) and modified in Release 1.0(3).

Usage Guidelines Use the **show version image** command to verify the integrity of the image before loading the images. This command can be used for both the system and kickstart images.

Use the **show version** command to verify the version on the active and standby supervisor modules before and after an upgrade.

Examples The following examples depict version of the system, kickstart, and failed images.

```
switch(boot)# show version image bootflash:system_image <-----system image
image name: m9500-sflek9-mz.1.0.3.bin
system:      version 1.0(3)
compiled:    10/25/2010 12:00:00
```

```
switch(boot)# show version image bootflash:kickstart_image <-----kickstart image
image name: m9500-sflek9-kickstart-mz.1.0.3.upg.bin
kickstart:   version 1.0(3)
loader:      version 1.0(3)
compiled:    10/25/2010 12:00:00
```

```
switch# show version image bootflash:bad_image <-----failure case
Md5 Verification Failed
Image integrity check failed
```

The following example displays current EPLD versions for a specified module.

```
switch# show version module 2 epld
Module Number          2
EPLD Device            Version
-----
Power Manager          0x06
XBUS IO                0x07
UD chip Fix           0x05
Sahara                 0x05
```

The following example displays available EPLD versions

```
switch# show version epld scp://user@10.6.16.22/users/dino/epld.img
user@10.6.16.22's password:
```

| Module Name | EPLD Device | Version |
|-----------------------------|---------------------|---------|
| Supervisor/Fabric-1 | XBUS 1 IO | 0x09 |
| | XBUS 2 IO | 0x0c |
| | UD chip Fix | 0x05 |
| | Sahara | 0x04 |
| 1/2 Gbps FC 16 port | XBUS IO | 0x08 |
| | Sahara | 0x05 |
| 1/2 Gbps FC 32 port | XBUS IO | 0x07 |
| | Sahara | 0x05 |
| Virtualization Linecard | XBUS IO | 0x07 |
| | UD chip Fix | 0x05 |
| | Golden Gate | 0x04 |
| IP Storage Module | XBUS IO | 0x02 |
| | UD chip Fix | 0x05 |
| | Sahara | 0x05 |
| | Mainboard Bally | 0x12 |
| 20/40 Port FC Fabric Switch | Daughter card Bally | 0x08 |
| | XBUS IO | 0x03 |

The following examples provide a before and after comparison scenario after the loader version is updated.

```
switch# show version
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2003 by Cisco Systems, Inc. All rights reserved.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.
Software
  BIOS:      version 1.0(3)
  loader:    version 1.0(2) <-----existing version
  kickstart: version 1.0(3)
  system:    version 1.0(3)
BIOS compile time:      11/18/02
kickstart image file is: bootflash:/kickstart_image
kickstart compile time: 1/20/2003 12:00:00
system image file is:   bootflash:/system_image
system compile time:    1/20/2003 12:00:00
```

```
switch# show version
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2003 by Cisco Systems, Inc. All rights reserved.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.
Software
  BIOS:      version 1.0(3)
  loader:    version 1.0(3) <-----new version
  .....
```

The following example show the version details for a specified module.

```
switch# show ver mod 4
Mod No  Mod Type      SW Version      SW Interim Version
4       LC              1.0(3)          1.0(3)
```

show vrrp

Use the **show vrrp vr** command to display the VRRP configuration information

```
show vrrp [statistics | vr [integer interface group]]
```

| Syntax Description | statistics | Shows cumulative vrrp statistics for this machine. |
|--------------------|------------|--|
| | vr | Shows virtual router information. |
| | group | The ID of the group (1-255). |
| | interface | Enter mgmt for management interface, or VSAN for the IPFC VSAN interface. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays VRRP configured information.

```
switch# show vrrp vr 7 interface vsan 2 configuration
vr id 7 configuration
admin state down
priority 100
no authentication
advertisement-Interval 1
preempt yes
tracking interface vsan1 priority 2
protocol IP
```

The following example displays VRRP status information.

```
switch# show vrrp vr 7 interface vsan 2 status
vr id 7 status
MAC address 00:00:5e:00:01:07
Operational state: init
```

The following example displays VRRP statistics

```
switch# show vrrp vr 7 interface vsan 2 statistics
vr id 7 statistics
Become master 0
Advertisement 0
Advertisement Interval Error 0
Authentication Failure 0
TTL Error 0
Priority 0 Received 0
Priority 0 Sent 0
Invalid Type 0
Mismatch Address List 0
Invalid Authentication Type 0
Mismatch Authentication 0
Invalid Packet Length 0
```

The following example displays VRRP cumulative statistics.

```
switch# show vrrp statistics
Invalid checksum 0
Invalid version 0
Invalid VR ID 0
```

show vsan

Use the **show vsan** command to display information about configured VSAN.

```
show vsan [ vsan-range ] | [membership interface ( fc slot/port | fv slot/dpp-number/fv-port | portchannel portchannel-number.subinterface-number ) ] | usage]
```

| Syntax Description | | |
|---|--|---|
| vsan <i>vsan-range</i> | | The VSAN ID range (from 1 to 4093). |
| membership | | Shows membership information. |
| interface | | Specifies the interface type. |
| fc <i>slot/port</i> | | Displays the Fibre Channel interface in the specified slot/port. |
| fv <i>slot/dpp-number/fv-port</i> | | Displays the virtual F port (FV port) interface in the specified slot along with the data path processor (DPP) number and the FV port number. |
| port-channel <i>portchannel-number.subinterface-number</i> | | Displays the PortChannel interface specified by the PortChannel number followed by a dot (.) indicator and the subinterface number. |
| usage | | Shows VSAN usage in the system. |

Defaults None.

Command Modes EXEC mode.

Command History This command was modified in Cisco MDS SAN-OS Release 1.2(2).

Usage Guidelines For the **show vsan membership interface** command, interface information is not displayed if interfaces are not configured on this VSAN.

The interface range must be in ascending order and nonoverlapping. You can specify a range using a hyphen and several interfaces using commas:

- The interface range format for a FC interface range is *fcslot/port - port* , *fcslot/port* , *fcslot/port*
(For example, **show int fc1/1 - 3 , fc1/5 , fc2/5**)
- The interface range format for a FV interface range is *fvslot/dpp/fvport - fvport* , *fvslot/dpp/port* , *fvslot/dpp/port*
(For example, **show int fv2/1/1 - 3 , fv2/1/5 , fv2/2/5**)
- The format for a PortChannel is *port-channel portchannel-number.subinterface-number*
(For example, **show int port-channel portchannel-number.subinterface-number**)

Examples

The following examples displays configured VSAN information.

```
switch# show vsan 1
vsan 1 information
    name:VSAN0001 state:active
    interoperability mode:yes & verify mode
    loadbalancing:src-id/dst-id/oxid
    operational state:up

switch# show vsan usage
4 vsan configured
configured vsans:1-4
vsans available for configuration:5-4093

switch # show vsan 1 membership
vsan 1 interfaces:
    fc1/1  fc1/2  fc1/3  fc1/4  fc1/5  fc1/6  fc1/7  fc1/9
    fc1/10 fc1/11 fc1/12 fc1/13 fc1/14 fc1/15 fc1/16 port-channel 99
```

The following example displays membership information for all VSANs

```
switch # show vsan membership
vsan 1 interfaces:
    fc2/16 fc2/15 fc2/14 fc2/13 fc2/12 fc2/11 fc2/10 fc2/9
    fc2/8  fc2/7  fc2/6  fc2/5  fc2/4  fc2/3  fc2/2  fc2/1
    fc1/16 fc1/15 fc1/14 fc1/13 fc1/12 fc1/11 fc1/10 fc1/9
    fc1/7  fc1/6  fc1/5  fc1/4  fc1/3  fc1/2  fc1/1

vsan 2 interfaces:
vsan 7 interfaces:
    fc1/8

vsan 100 interfaces:
vsan 4094(isolated vsan) interfaces:
```

The following example displays membership information for a specified interface.

```
switch # show vsan membership interface fc1/1
fc1/1
    vsan:1
    allowed list:1-4093

switch# show vsan
vsan 1 information
    name:VSAN0001 state:active
    interoperability mode:default
    loadbalancing:src-id/dst-id/oxid
    operational state:up

vsan 2 information
    name:VmVSAN state:active
    interoperability mode:default
    loadbalancing:src-id/dst-id/oxid
    operational state:up

vsan 3 information
    name:Disk_A state:active
    interoperability mode:default
    loadbalancing:src-id/dst-id/oxid
    operational state:up

vsan 4 information
    name:Host_B state:active
    interoperability mode:default
    loadbalancing:src-id/dst-id/oxid
    operational state:up
```

```
vsan 4094:isolated_vsan

switch# show vsan membership interface fv 2/1/3 , fv2/1/5 - 7
fv2/1/3
    vsan:2
    allowed list:1-4093
fv2/1/5
    vsan:3
    allowed list:1-4093
fv2/1/6
    vsan:4
    allowed list:1-4093
fv2/1/7
    vsan:4
    allowed list:1-409
```

show wwn

Use the **show wwn** commands to display the status of the WWN configuration.

show wwn [status *block-id number* | switch]

| | | |
|---------------------------|---------------|--|
| Syntax Description | status | Shows overall WWN Usage and Alarm Status |
| | switch | Shows switch WWN. |

Defaults None.

Command Modes EXEC mode.

Command History This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines None.

Examples The following example displays the WWN of the switch:

```
switch# show wwn switch  
Switch WWN is 20:01:ac:16:5e:52:00:01
```

show zone

To display zone information, use the **show zone** command.

show zone

```

active [ vsan vsan-range ] |
change event-history [ vsan vsan-range ] |
member [ fcalias alias-name | fcid fcid-id | pwwn wwn (lun lun-id ) ] [active | vsan
vsan-range] |
merge event-history | [ interface interface vsan vsan-id ] |
name string [active | vsan vsan-range] |
statistics [ lun-zoning | read-only-zoning | vsan vsan-range ] |
status [ vsan vsan-range ]
vsan vsan-range

```

| Syntax Description | | |
|-------------------------------|--|---|
| active | | Shows zones which are part of active zoneset. |
| change | | Shows log transaction changes. |
| member | | Shows all zones in which the given member is part of. |
| merge | | Shows log transaction merges. |
| name | | Shows members of a specified zone. |
| statistics | | Shows zone server statistics. |
| status | | Shows zone server current status. |
| vsan <i>vsan-range</i> | | Shows zones belonging to the specified VSAN or VSAN range for multiple VSANs (ranges from 1 to 4093). |
| lun <i>lun-id</i> | | Shows zones belonging to the specified pWWN with the specified LUN ID> |
| lun-zoning | | Shows LUN zoning related statistics |
| read-only-zoning | | Shows read-only zoning related statistics |

Defaults None.

Command Modes EXEC mode.

Command History This command was modified in Cisco MDS SAN-OS Release 1.2(2).

Usage Guidelines None.

Examples

The following example displays configured zone information.

```
switch# show zone
zone name Zone3 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
zone name Zone2 vsan 2
  fwwn 20:41:00:05:30:00:2a:1e
  fwwn 20:42:00:05:30:00:2a:1e
  fwwn 20:43:00:05:30:00:2a:1e
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
```

Use the **show zone vsan** command to display zone information for a specific VSAN.

```
switch# show zone vsan 1
zone name Zone3 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
zone name Zone2 vsan 1
  fwwn 20:41:00:05:30:00:2a:1e
  fwwn 20:42:00:05:30:00:2a:1e
  fwwn 20:43:00:05:30:00:2a:1e
  fwwn 20:44:00:05:30:00:2a:1e
  fwwn 20:45:00:05:30:00:2a:1e
  fwwn 20:46:00:05:30:00:2a:1e
  fwwn 20:47:00:05:30:00:2a:1e
  fwwn 20:48:00:05:30:00:2a:1e
  fwwn 20:49:00:05:30:00:2a:1e
  fwwn 20:4a:00:05:30:00:2a:1e
  fwwn 20:4b:00:05:30:00:2a:1e
  fwwn 20:4c:00:05:30:00:2a:1e
  fwwn 20:4d:00:05:30:00:2a:1e
  fwwn 20:4e:00:05:30:00:2a:1e
  fwwn 20:4f:00:05:30:00:2a:1e
  fwwn 20:50:00:05:30:00:2a:1e
  fwwn 20:51:00:05:30:00:2a:1e
  fwwn 20:52:00:05:30:00:2a:1e
  fwwn 20:53:00:05:30:00:2a:1e
  fwwn 20:54:00:05:30:00:2a:1e
  fwwn 20:55:00:05:30:00:2a:1e
  fwwn 20:56:00:05:30:00:2a:1e
  fwwn 20:57:00:05:30:00:2a:1e
  fwwn 20:58:00:05:30:00:2a:1e
  fwwn 20:59:00:05:30:00:2a:1e
  fwwn 20:5a:00:05:30:00:2a:1e
  fwwn 20:5b:00:05:30:00:2a:1e
  fwwn 20:5c:00:05:30:00:2a:1e
  fwwn 20:5d:00:05:30:00:2a:1e
  fwwn 20:5e:00:05:30:00:2a:1e
  fwwn 20:5f:00:05:30:00:2a:1e
  fwwn 20:60:00:05:30:00:2a:1e
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
```

Use the **show zone name** command to display members of a specific zone.

```
switch# show zone name Zone1
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
```

Use the **show zone member** command to display all zones to which a member belongs using the FC ID.

```
switch# show zone member pwwn 21:00:00:20:37:9c:48:e5
      VSAN: 1
zone Zone3
zone Zone1
fcalias Alias1
```

Use the **show zone statistics** command to display the number of control frames exchanged with other switches.

```
switch# show zone statistics
Statistics For VSAN: 1
*****
Number of Merge Requests Sent: 24
Number of Merge Requests Recvd: 25
Number of Merge Accepts Sent: 25
Number of Merge Accepts Recvd: 25
Number of Merge Rejects Sent: 0
Number of Merge Rejects Recvd: 0
Number of Change Requests Sent: 0
Number of Change Requests Recvd: 0
Number of Change Rejects Sent: 0
Number of Change Rejects Recvd: 0
Number of GS Requests Recvd: 0
Number of GS Requests Rejected: 0
Statistics For VSAN: 2
*****
Number of Merge Requests Sent: 4
...
Number of GS Requests Rejected: 0
```

Use the **show zone status** command to display the status of configured zones.

```
switch# show zone status
VSAN: 1 default-zone: permit distribute: active only Interop: 100
Full Zoning Database :
  Zonesets:0 Zones:0 Aliases: 0
Active Zoning Database :
  Database Not Available
Status:
...
VSAN: 9 default-zone: permit distribute: active only Interop: 100
Full Zoning Database :
  Zonesets:0 Zones:0 Aliases: 0
Active Zoning Database :
  Database Not Available
Status:
```

show zoneset

Use the **show zoneset** command to view the configured zone sets.

```
show zoneset
  active [ vsan vsan-id ] |
  brief [ active ] | [ vsan vsan-id ] |
  name [ active ] | [ brief ] [ vsan vsan-id ] |
  vsan vsan-id
```

| Syntax Description | | |
|--------------------|--|---|
| active | | Shows only active zonesets. |
| brief | | Shows members in brief mode. |
| name | | Shows members of a specified zoneset. |
| vsan | | Shows zonesets belonging to the specified VSAN. |
| <i>vsan-id</i> | | The ID of the VSAN is from 1 to 4093. |

Defaults None.

Command Modes EXEC mode.

Command History This command was modified in Cisco MDS SAN-OS Release 1.2(2).

Usage Guidelines None.

Examples The following example displays configured zoneset information.

```
switch# show zoneset vsan 1
zoneset name ZoneSet2 vsan 1
  zone name Zone2 vsan 1
    fwwn 20:4e:00:05:30:00:2a:1e
    fwwn 20:4f:00:05:30:00:2a:1e
    fwwn 20:50:00:05:30:00:2a:1e
    fwwn 20:51:00:05:30:00:2a:1e
    fwwn 20:52:00:05:30:00:2a:1e
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
zoneset name ZoneSet1 vsan 1
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
```

The following example displays configured zone set information for a specific VSAN.

```
switch# show zoneset vsan 2-3
zoneset name ZoneSet2 vsan 1
  zone name Zone2 vsan 1
    fwwn 20:52:00:05:30:00:2a:1e
    fwwn 20:53:00:05:30:00:2a:1e
    fwwn 20:54:00:05:30:00:2a:1e
    fwwn 20:55:00:05:30:00:2a:1e
    fwwn 20:56:00:05:30:00:2a:1e
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
zoneset name ZoneSet1 vsan 1
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
```