



## F Commands

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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*.

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## fcalias name

To configure an FC alias, use the **fcalias name** command. To disable an FC alias, use the **no** form of this command.

**fcalias name** *alias name* **vsan** *vsan-id*

| Syntax Description |                   |   |
|--------------------|-------------------|---|
|                    | <i>alias-name</i> | The name of the fcalias. Maximum length is 64 characters. |
|                    | <b>vsan</b>       | The fcalias is for a VSAN.                                |
|                    | <i>vsan-id</i>    | The ID of the VSAN is from 1 to 4093.                     |

**Defaults** None.

**Command Modes** Configuration mode.

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

**Usage Guidelines** To include multiple members in any alias, use the FC ID, fWWN, or pWWN values.

**Examples** The following examples show how to configure an fcalias called AliasSample on VSAN 3.

```
switch# config t
switch(config)# fcalias name AliasSample vsan 3
switch(config-fcalias)#
switch(config-fcalias)# member fcid 0x222222
switch(config-fcalias)#
switch(config-fcalias)# member pwwn 10:00:00:23:45:67:89:ab
switch(config-fcalias)#
switch(config-fcalias)# member fwwn 10:01:10:01:10:ab:cd:ef
switch(config-fcalias)#
```

| Related Commands | Command            | Description  |
|------------------|--------------------|--|
|                  | <b>member fcid</b> | Configures alias member for a specified zone.                            |
|                  | <b>member pwwn</b> | Configures alias members based on the specified port WWN type and value. |
|                  | <b>member fwwn</b> | Configures alias members based on the specified fWWN type and value.     |

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# fcanalyzer

To configure the Cisco Fabric Analyzer use the **fcanalyzer** command in configuration mode.

```
fcanalyzer [local | local brief | display-filter | limit-frame-size | limit-captured-frames write]
[remote ip-address active port-number]
```

| Syntax Description           |   |  |
|------------------------------|---|--|
| <b>local</b>                 | Begins capturing the frames locally (supervisor module).  |  |
| <b>local brief</b>           | Displays the protocol summary in a brief format.  |  |
| <b>display-filter</b>        | Displays the filtered frames.   |  |
| <b>limit-frame-size</b>      | Limits the size of the frame capture to the first 64 bytes. The allowed range is 64 to 65536 bytes.   |  |
| <b>limit-captured-frames</b> | Limits the number of frames captured to 10. The allowed range is 0 to 2147483647 frames and the default is 100 frames. Use 0 if you do not want to limit the captures frames. |  |
| <b>write</b>                 | Saves the captured frames to a specified file.  |  |
| <b>remote</b>                | Configures the remote IP address to which the captured frames will be sent.   |  |
| <i>ip-address</i>            | Specifies IP address or hostname. Maximum length is 1024 characters.  |  |
| <b>active</b>                | Enables active mode (passive is the default) with the remote host.  |  |
| <i>port-number</i>           | Specifies port number   |  |

**Defaults** None.

**Command Modes** Configuration mode.

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

**Usage Guidelines** You can capture Fibre Channel control traffic from a switch and decode it without having to disrupt connectivity and without having to be local to the point of analysis.

**Examples** The following examples shows how to configure the Cisco Fabric Analyzer.

```
switch# config t
switch(config)# fcanalyzer local
Capturing on eth2
switch(config)#
switch(config)# fcanalyzer local brief
Capturing on eth2
switch(config)#
switch(config)# fcanalyzer local display-filter SampleF
Capturing on eth2
switch(config)# fcanalyzer local limit-frame-size 64
Capturing on eth2
```

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```
switch(config)#
switch(config)# fcanalyzer local limit-captured-frames 10
Capturing on eth2
switch(config)#
switch(config)# fcanalyzer local write SampleFile
Capturing on eth2
switch(config)#
switch(config)# fcanalyzer remote 10.21.0.3
Capturing on eth2
switch(config)#
switch(config)# fcanalyzer remote 10.21.0.3 active
Capturing on eth2
```

---

**Related Commands**

| <b>Command</b>          | <b>Description</b>  |
|-------------------------|---|
| <b>clear fcanalyzer</b> | Clears the entire list of configured hosts.                 |
| <b>show fcanalyzer</b>  | Displays the list of hosts configured for a remote capture. |

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## fcc

To assign Fibre Channel Congestion Control priority, use the **fcc priority** command in configuration mode.

**fcc** [ *priority number* ]

| Syntax Description | Parameter       | Description  |
|--------------------|-----------------|--|
|                    | <b>fcc</b>      | Enables FCC for the entire switch.   |
|                    | <b>priority</b> | Assigns FCC priority for the entire switch.                                  |
|                    | <i>number</i>   | The FCC priority threshold, with 0 being the lowest and 7 being the highest. |

**Defaults** Disabled.

**Command Modes** Configuration mode.

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

**Usage Guidelines** FCC reduces the congestion in the traffic without interfering with standard Fibre Channel protocol.

**Examples** The following example shows the FCC priority threshold configured as 2.

```
switch# config t
switch(config)# fcc priority 2
```

| Related Commands | Command         | Description            |
|------------------|-----------------|------------------------|
|                  | <b>show fcc</b> | Displays FCC settings. |

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# fcdomain

To configure the Fibre Channel domain feature, use the **fcdomain** command. The **no** form of this command, disables the FC domain.

```
fcdomain [auto-reconfigure vsan vsan-id] [contiguous-allocation vsan vsan-id] [domain id
preferred | static vsan vsan-id | static c] [fabric-name name] [fcid database vsan vsan-id |
persistent vsan vsan-id] [priority value vsan vsan-id] [restart disruptive vsan vsan-id] [vsan
vsan-id] [restart vsan vsan-id] [vsan vsan-id]
```

| Syntax                       | Description  |
|------------------------------|--|
| <b>auto-reconfigure</b>      | Configures autoreconfigure.  |
| <b>vsan</b>                  | Specifies a VSAN.  |
| <i>vsan-id</i>               | The ID of the VSAN is from 1 to 4093.  |
| <b>contiguous-allocation</b> | Configures contiguous allocation.  |
| <b>domain</b>                | Configures the domain ID and its type.   |
| <i>id</i>                    | Specifies the domain ID, which is from 0 to 239.   |
| <b>preferred</b>             | Configures the domain ID as preferred (default—the local switch accepts the domain ID assigned by the principal switch and the assigned domain ID becomes the runtime domain ID).                                |
| <b>static</b>                | Configures the domain ID as static (the assigned domain ID is discarded, all local interfaces are isolated, and the local switch assigns itself the configured domain ID, which becomes the runtime domain ID.). |
| <b>fabric-name</b>           | Configures the fabric name.  |
| <i>name</i>                  | Specifies the fabric name.   |
| <b>fcid</b>                  | Configures FC domain persistent FCIDs.   |
| <b>database</b>              | Enters persistent FCIDs submode.   |
| <b>persistent</b>            | Enables or disables FC domain persistent FCIDs.  |
| <b>priority</b>              | Configures the FC domain priority.   |
| <i>value</i>                 | Specifies the FC domain priority, which is from 1 to 254.  |
| <b>restart disruptive</b>    | Forces the disruptive fabric reconfiguration.  |
| <b>restart</b>               | Starts a disruptive or nondisruptive reconfiguration.  |

**Defaults** Enabled.

**Command Modes** Configuration mode.

**Usage Guidelines** You can use this command to select the principle switch, domain ID distribution, reconfigure fabric, and allocate FC IDs.

**Examples** The following examples show how to configure the Fibre Channel domain feature.

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```

switch# config t
switch(config)#
switch(config)# fcdomain domain 3 preferred vsan 87
switch(config)#
switch(config)# no fcdomain domain 3 preferred vsan 87
switch(config)# fcdomain domain 2 static vsan 237
switch(config)# no fcdomain domain 2 static vsan 237
switch(config)# fcdomain restart vsan 1
switch(config)#
switch(config)# fcdomain restart disruptive vsan 1
switch(config)#
switch(config)# fcdomain priority 25 VSAN 99
switch(config)# no fcdomain priority 25 VSAN 99
switch(config)#
switch(config)# fcdomain auto-reconfigure vsan 10
switch(config)#
switch(config)# fcdomain contiguous-allocation vsan 81-83
switch(config)#
switch(config)# no fcdomain contiguous-allocation vsan 1030
switch(config)#
switch(config)# fcdomain fabric-name 20:1:ac:16:5e:0:21:01 vsan 3
switch(config)#
switch(config)# no fcdomain fabric-name 20:1:ac:16:5e:0:21:01 vsan 3010
switch(config)#

```

---

**Related Commands**

| Command                    | Description   |
|----------------------------|---|
| <code>show fcdomain</code> | Displays global information about the FC domain configurations. |

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# fcdroplateny

To configure the network and switch FC drop latency time, use the **fcdroplateny** command in configuration mode. To disable the FC latency time, use the **no** form of this command.

**fcdroplateny** [**network** *milliseconds*| **switch** *milliseconds*]

| Syntax Description | network <i>milliseconds</i> | Description  |
|--------------------|-----------------------------|--|
|                    | <b>switch</b>               | Configures switch latency.                           |
|                    | <i>milliseconds</i>         | Specifies latency from 0 to 2147483647 milliseconds. |

**Defaults** Disabled.

**Command Modes** Configuration mode.

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

**Usage Guidelines** None.

**Examples** The following example shows how to configure the network latency to 5000 milliseconds.

```
switch# conf t
switch(config)#
switch(config)# fcdroplateny network 5000
switch(config)#
```

The following example shows how to disable network latency.

```
switch(config)# no fcdroplateny network
switch(config)#
```

The following example shows how to configure the switch latency to 4000 milliseconds.

```
switch(config)# fcdroplateny switch 4000
switch(config)#
```

The following example shows how to disable switch latency.

```
switch(config)# no fcdroplateny switch
switch(config)#
```

| Related Commands | Command                  | Description   |
|------------------|--------------------------|---|
|                  | <b>show fcdroplateny</b> | Displays the configured FC drop latency parameters. |



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## fcflow stats

To configure fcflow statistics, use the **fcflow stats** command in configuration mode. To disable the counter, use the **no** form of this command.

**fcflow stats** {**aggregated module** *module-number* **index** *flow-number* **vsan** *vsan-id* | **module** *module-number* **index** *flow-number* *destination-fcid* *source-fcid* *netmask*}

**no fcflow stats** {**aggregated module** *module-number* **index** *flow-number* **vsan** *vsan-id* | **module** *module-number* **index** *flow-number* *destination-fcid* *source-fcid* *netmask*}

| Syntax Description      |  |  |
|-------------------------|--|--|
| <b>aggregated</b>       |  | Configures aggregated fcflow statistics.   |
| <b>index</b>            |  | Specifies the flow index.  |
| <i>flow-number</i>      |  | Specifies a flow number from 0-2147483647.   |
| <b>vsan</b>             |  | Specifies a VSAN.  |
| <i>vsan-id</i>          |  | The ID of the VSAN is from 1 to 4093.  |
| <b>module</b>           |  | Clear fcflow statistics on a module.   |
| <i>module-number</i>    |  | Specifies a module number from 1 to 9.   |
| <i>destination-fcid</i> |  | Enters the destination FC ID in hex format.  |
| <i>source-fcid</i>      |  | Enters the source FC ID in hex format.   |
| <i>netmask</i>          |  | Enters the mask for the source and destination FC ID (restricted to 6 characters ranging from 000000 to ffffff). |

**Defaults** None.

**Command Modes** Configuration mode.

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

**Usage Guidelines** If you enable flow counters, you can enable a maximum of 1K entries for aggregate flow and flow statistics. Be sure to assign an unused flow index to a module for each new flow. Flow indexes can be repeated across modules. The number space for flow index is shared between the aggregate flow statistics and the flow statistics.

**Examples** The following example shows how to configure aggregated fcflow statistics for module 1.

```
switch-config# fcflow stats aggregated module 1
switch-config#
```

The following example enables the aggregated flow counter.

```
switch(config)# fcflow stats aggregated module 1 index 1005 vsan 1
```

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The following example disables the aggregated flow counter.

```
switch(config)# no fcflow stats aggregated module 1 index 1005 vsan 1
```

The following example enables the flow counter for module 1.

```
switch(config)# fcflow stats module 1 index 1 0x145601 0x5601 fffff vsan 1
```

The following example disables the flow counter for module 1.

```
switch(config)# no fcflow stats aggregated module 2 index 1001 vsan 2
```

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## fcinterop fcid-allocation

To allocate FC IDs on the switch, use the **fcinterop fcid-allocation** command in configuration mode. To disable FC IDs on the switch, use the **no** form of the command.

**fcinterop [fcid-allocation auto | flat | none]**

**no fcinterop [fcid-allocation auto | flat | none]**

| Syntax                 | Description                             |
|------------------------|---|
| <b>fcid-allocation</b> | Sets single FCID interop mode.          |
| <b>auto</b>            | Assigns single FCID to compatible HBAs. |
| <b>flat</b>            | Assign single FCID.                     |
| <b>none</b>            | Assigns FCID range.                     |

**Defaults** The default is **fcinterop fcid-allocation auto**.

**Command Modes** Configuration mode.

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

**Usage Guidelines** This command defines how the switch assigns FC IDs.

### Examples

```
switch# config t
switch(config)#
switch(config)# fcinterop fcid-allocation none
switch(config)#
switch(config)# fcinterop fcid-allocation flat
switch(config)#
switch(config)# fcinterop fcid-allocation auto
switch(config)#
```

| Related Commands | Command                    | Description                              |
|------------------|----------------------------|--|
|                  | <b>show flogi database</b> | Displays the fabric login (FLOGI) table. |

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## fcinterop loop-monitor

To monitor removal of discs from a loop port, use the **fcinterop loop-monitor** command in configuration mode. To disable loop monitoring, use the **no** form of this command.

**fcinterop loop-monitor**

**no fcinterop loop-monitor**

|                         |                            |   |
|-------------------------|----------------------------|---|
| <b>Syntax</b>           | <b>loop-monitor</b>        | Configures monitoring of NL ports in a loop.  |
| <b>Description</b>      |                            |   |
| <b>Defaults</b>         |                            | Disabled.   |
| <b>Command Modes</b>    |                            | Configuration mode.   |
| <b>Command History</b>  |                            | This command was introduced in Cisco MDS SAN-OS Release 1.0(2).   |
| <b>Usage Guidelines</b> |                            | This command detects devices that are removed from a looped port.   |
| <b>Examples</b>         |                            | The following example configures monitoring of NL ports in a loop.<br><br><pre>switch# <b>config t</b> switch(config)# switch(config)# <b>fcinterop loop-monitor</b> switch(config)# <b>no fcinterop loop-monitor</b></pre> |
| <b>Related Commands</b> | <b>Command</b>             | <b>Description</b>  |
|                         | <b>show flogi database</b> | Verify if a storage device is displayed in the Fabric login (FLOGI) table.  |

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## fcns proxy-port

To register a name server proxy, use the **fcns proxy-port** command in configuration mode.

```
fcns [proxy-port wwn-id | [vsan vsan-id]
```

| Syntax Description |  |  |
|--------------------|--|--|
| <i>wwn-id</i>      |  | The port WWN, with the format <i>hh:hh:hh:hh:hh:hh:hh:hh</i> . |
| <b>vsan</b>        |  | Configures a proxy port for the specified VSAN.                |
| <i>vsan-id</i>     |  | The ID of the VSAN is from 1 to 4093.                          |

**Defaults** None.

**Command Modes** Configuration mode.

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

**Usage Guidelines** One name server can be configured to proxy another name server and name server information can be displayed using the CLI. The name server can be viewed using the CLI or the Cisco Fabric Manager.

All name server registration requests come from the same port whose parameter is registered or changed. If it doesn't, then the request is rejected.

**Examples** The following example shows registering a name server proxy.

```
switch# config t
switch(config)#
switch(config)# fcns proxy-port 21:00:00:e0:8b:00:26:d
switch(config)#
```

The following example shows configuring a proxy port for VSAN 2.

```
switch(config)# fcns proxy-port 21:00:00:e0:8b:00:26:d vsan 2
switch(config)#
```

| Related Commands | Command          | Description  |
|------------------|------------------|--|
|                  | <b>show fcns</b> | Displays the name server database and statistical information for a specified VSAN or for all VSANs. |

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# fcping

To ping an N port with a specified FC ID, use the **fcping fcid** command in EXEC mode.

```
fcping {fcid fc-port vsan vsan-id [count number | timeout value | usr-priority] | pwwn wwn-id}
```

| Syntax Description  |  |   |
|---------------------|--|---|
| <b>fc id</b>        |  | The FC ID of the destination N port.                                |
| <i>fc-port</i>      |  | The port FC ID, with the format <i>0xhhhhhh</i> .                   |
| <b>pwwn</b>         |  | The port WWN of the destination N port.                             |
| <i>wwn-id</i>       |  | The port WWN, with the format <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .      |
| <b>vsan</b>         |  | Configures the VSAN ID of the destination N port.                   |
| <i>vsan-id</i>      |  | The ID of the VSAN is from 1 to 4093.                               |
| <b>count</b>        |  | Configure the frames to send.                                       |
| <i>number</i>       |  | Specifies the number of frames to send. A value of 0 sends forever. |
| <b>timeout</b>      |  | The timeout value.  |
| <b>usr-priority</b> |  | The priority the frame receives in the switch fabric.               |

**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 shows a fcping operation for the specified pWWN or the FCID of the destination. By default, five frames are sent.

```
switch# fcping fcid 0xd70000 vsan 1
28 bytes from 0xd70000 time = 730 usec
28 bytes from 0xd70000 time = 165 usec
28 bytes from 0xd70000 time = 262 usec
28 bytes from 0xd70000 time = 219 usec
28 bytes from 0xd70000 time = 228 usec

5 frames sent, 5 frames received, 0 timeouts
Round-trip min/avg/max = 165/270/730 usec
```

The following example shows the setting of the number of frames to be sent using the count option. The range is from 0 through 2147483647. A value of 0 will ping forever.

```
switch# fcping fcid 0xd70000 vsan 1 count 10
28 bytes from 0xd70000 time = 730 usec
```

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```
28 bytes from 0xd70000 time = 165 usec
28 bytes from 0xd70000 time = 262 usec
28 bytes from 0xd70000 time = 219 usec
28 bytes from 0xd70000 time = 228 usec
28 bytes from 0xd70000 time = 230 usec
28 bytes from 0xd70000 time = 230 usec
28 bytes from 0xd70000 time = 225 usec
28 bytes from 0xd70000 time = 229 usec
28 bytes from 0xd70000 time = 183 usec

10 frames sent, 10 frames received, 0 timeouts
Round-trip min/avg/max = 165/270/730 usec
```

The following example shows the setting of the timeout value. The default period to wait is 5 seconds. The range is from 1 through 10 seconds.

```
switch# fcping fcid 0xd500b4 vsan 1 timeout 10
28 bytes from 0xd500b4 time = 1345 usec
28 bytes from 0xd500b4 time = 417 usec
28 bytes from 0xd500b4 time = 340 usec
28 bytes from 0xd500b4 time = 451 usec
28 bytes from 0xd500b4 time = 356 usec

5 frames sent, 5 frames received, 0 timeouts
Round-trip min/avg/max = 340/581/1345 usec
```

This command shows the No response from the N port message even when the N port or NL port is active. This is due to resource exhaustion at the N port or NL port. Retry the command a few seconds later.

```
switch# fcping fcid 0x010203 vsan 1
No response from the N port.

switch# fcping pwwn 21:00:00:20:37:6f:db:dd vsan 1
28 bytes from 21:00:00:20:37:6f:db:dd time = 1454 usec
28 bytes from 21:00:00:20:37:6f:db:dd time = 471 usec
28 bytes from 21:00:00:20:37:6f:db:dd time = 372 usec
28 bytes from 21:00:00:20:37:6f:db:dd time = 364 usec
28 bytes from 21:00:00:20:37:6f:db:dd time = 1261 usec

5 frames sent, 5 frames received, 0 timeouts
Round-trip min/avg/max = 364/784/1454 usec
```

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## fcroute

To configure Fibre Channel routes, use the **fcroute** command.

```
fcroute FCID [network_mask] interface type [domain domain-id] metric number | remote | vsan
vsan-id]
```

| Syntax              | Description  |
|---------------------|--|
| <i>network_mask</i> | Configures the FCID network mask.  |
| <b>interface</b>    | Configures the route for the specified Fibre Channel interface.          |
| <i>type</i>         | Specifies the Fibre Channel number or the PortChannel number.            |
| <b>domain</b>       | Configures the route for the domain of the next hop switch.              |
| <i>domain-id</i>    | Specifies the domain ID.   |
| <b>metric</b>       | Assigns the cost of the route.   |
| <i>number</i>       | Specifies the cost of the route. Default cost is 10.                     |
| <b>vsan</b>         | Configures the static route for a specific VSAN.                         |
| <i>vsan-id</i>      | The ID of the VSAN is from 1 to 4093.                                    |
| <b>remote</b>       | Configures the static route for a destination switch remotely connected. |

**Defaults** None.

**Command Modes** Configuration mode.

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

**Usage Guidelines** Use this command to assign forwarding information to the switch.

### Examples

```
switch# config t
switch(config)#
switch(config)# fcroute 0x111211 interface fc1/1 domain 3 vsan 2
switch(config)#
switch(config)# fcroute 0x111211 interface port-channel 1 domain 3 vsan 4
switch(config)#
switch(config)# fcroute 0x031211 interface fc1/1 domain 3 metric 1 vsan 1
switch(config-if)#
switch(config)# fcroute 0x111112 interface fc1/1 domain 3 metric 3 remote vsan 3
```

| Related Commands | Command             | Description                    |
|------------------|---------------------|--------------------------------|
|                  | <b>show fcroute</b> | Displays Fibre Channel routes. |



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## fcs

To perform platform and node name checking fabric wide, and register FCS attributes, use the **fcs** command in configuration mode.

**fcs {plat-check-global vsan *vsan-id* | register [exit | no | platform] *name*}**

### Syntax Description

|                               |   |
|-------------------------------|---|
| <b>plat-check-global vsan</b> | Configures platform name or node name checking.                       |
| <i>vsan-id</i>                | Specifies the VSAN ID for platform checking, which is from 1 to 4096. |
| <b>register</b>               | Registers FCS attributes.   |
| <b>exit</b>                   | Exits submode.  |
| <b>no</b>                     | Negates a command or sets its defaults.                               |
| <b>platform</b>               | Configures platform object registration.                              |
| <i>name</i>                   | Specifies name of the platform.                                       |

### Defaults

None.

### Command Modes

Configuration mode.

### Command History

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

### Usage Guidelines

None.

### Examples

```
switch## config t
switch(config)##
switch(config)# # fcs plat-check-global vsan 2
switch (config)# fcs register
switch (config-fcs-register)# platform Platform1
```

### Related Commands

| Command         | Description                                       |
|-----------------|---|
| <b>show fcs</b> | Displays fabric configuration server information. |

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## fctimer

To change the default Fibre Channel timers, use the **fctimer** command in configuration mode.

```
fctimer {D_S_TOV milliseconds | E_D_TOV milliseconds | R_A_TOV milliseconds}
```

| Syntax Description | Parameter    | Description   |
|--------------------|--------------|---|
|                    | D_S_TOV      | The distributed services time out value ranges from 5000 to 100000 ms.                        |
|                    | E_D_TOV      | The error detect time out value ranges from 1000 to 100000, with a default of 2000.           |
|                    | R_A_TOV      | The resolution allocation time out value ranges from 5000 to 100000, with a default of 10000. |
|                    | milliseconds | Number of milliseconds  |

**Command Modes** Configuration mode.

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

**Usage Guidelines** The Cisco MDS 9000, Brocade, and McData FC Error Detect (ED\_TOV) and Resource Allocation (RA\_TOV) timers default to the same values. They can be changed if needed. In accordance with the FC-SW2 standard, these values must be the same on each switch within in the fabric.

**Examples** The following examples show how to change the default Fibre Channel timers.

```
switch# config t
switch(config)#
switch(config)# fctimer e_d_tov ?
 <1000-100000> E_D_TOV in milliseconds(1000-100000)
switch(config)# fctimer r_a_tov ?
 <5000-100000> R_A_TOV in milliseconds(5000-100000)
```

| Related Commands | Command      | Description   |
|------------------|--------------|---|
|                  | show fctimer | Displays the configured Fibre Channel timer values. |

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## fctrace

To trace the route to an N port, use the **fctrace** command in EXEC mode.

```
fctrace {fcid fcid vsan vsan-id [timeout value] | pwwn pwwn-id [timeout value]}
```

| Syntax Description | Parameter      | Description   |
|--------------------|----------------|---|
|                    | <b>fcid</b>    | The FCID of the destination N port.                                       |
|                    | <i>fcid</i>    | The port FCID, with the format <i>0xhhhhhh</i> .                          |
|                    | <b>pwwn</b>    | The PWWN of the destination N port.                                       |
|                    | <i>pwwn-id</i> | The port WWN, with the format <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .            |
|                    | <b>vsan</b>    | Configures the VSAN ID of the destination N-port.                         |
|                    | <i>vsan-id</i> | Specifies the VSAN ID of the destination N-port, which is from 1 to 4096. |
|                    | <b>timeout</b> | Configures the timeout value.   |
|                    | <i>value</i>   | Specifies the timeout value, which is from 1 to 10 seconds.               |

**Defaults** By default, the period to wait before timing out is 5 seconds.

**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 traces a route to the specified *fcid* in VSAN 1.

```
switch# fctrace fcid 0x660000 vsan 1
Route present for : 0x660000
20:00:00:05:30:00:5f:1e(0xffffc65)
Latency: 0 msec
20:00:00:05:30:00:61:5e(0xffffc66)
Latency: 0 msec
20:00:00:05:30:00:61:5e(0xffffc66)
```

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# find

To display a list of files on a file system, use the **find** command in EXEC mode.

**find** *filename*

|                           |                 |   |
|---------------------------|-----------------|---|
| <b>Syntax Description</b> | <i>filename</i> | Filenames with the specified characteristics. |
|---------------------------|-----------------|---|

|                 |       |  |
|-----------------|-------|--|
| <b>Defaults</b> | None. |  |
|-----------------|-------|--|

|                      |            |  |
|----------------------|------------|--|
| <b>Command Modes</b> | EXEC mode. |  |
|----------------------|------------|--|

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

|                         |   |  |
|-------------------------|---|--|
| <b>Usage Guidelines</b> | Use the <b>find</b> (Flash file system) command to display more detail about the files in a particular file system. |  |
|-------------------------|---|--|

|                 |  |  |
|-----------------|--|--|
| <b>Examples</b> | <p>The following example is sample output of all files that begin with the letter <i>a</i>:</p> <pre>switch# <b>find a</b> ./accountingd ./acl ./ascii_cfg_server ./arping</pre> |  |
|-----------------|--|--|

|                         |                |   |
|-------------------------|----------------|---|
| <b>Related Commands</b> | <b>Command</b> | <b>Description</b>                            |
|                         | <b>cd</b>      | Changes the default directory or file system. |
|                         | <b>dir</b>     | Displays all files in a given file system.    |

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# format

To erase all the information on a module, use the **format** command in EXEC mode.

**format {bootflash: | slot0:}**

---

**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 erases all information on a module's bootflash.

```
switch# format bootflash:
```

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## fspf config

To configure an FSPF feature for the entire VSAN, and to enable or disable FSPF, use the **fspf config** command in configuration mode. To delete FSPF configuration for the entire VSAN, and to enable or disable FSPF routing protocols, use the **no** form of the command.

```
fspf config vsan vsan-id | enable vsan vsan-id
```

```
no fspf config vsan vsan-id | enable vsan vsan-id
```

### Syntax Description

|                            |  |
|----------------------------|--|
| <b>vsan</b> <i>vsan-id</i> | Enters FSPF global configuration mode for the specified VSAN or range of VSANs. If no VSAN ID is specified, the default VSAN is selected.  |
| <b>fspfenable vsan</b>     | Enables FSPF on the entire VSAN.   |
| <i>vsan-id</i>             | The ID of the VSAN is from 1 to 4093.  |
| <b>region</b>              | Defines the autonomous region to which the switch belongs.   |
| <i>region-id</i>           | Specifies the autonomous region to which the switch belongs. The backbone region has <i>region-id</i> =0. The parameter <i>region-id</i> is an unsigned integer value ranging from 0 to 255.           |
| <b>spf hold-time</b>       | Configures the time between two consecutive SPF computations. If the time is small then routing will react faster to changes but CPU usage will be more.   |
| <i>spf-holdtime</i>        | Specifies the time between two consecutive SPF computations. The parameter <i>spf-holdtime</i> is an integer (0-65535) specifying time in milliseconds.  |
| <b>min-ls-arrival</b>      | Configures the minimum time before a new link state update for a domain will be accepted by switch.  |
| <i>ls-arrival-time</i>     | Specifies the minimum time before a new link state update for a domain will be accepted by switch. The parameter <i>ls-arrival-time</i> is an integer (0-65535) specifying time in milliseconds.       |
| <b>min-ls-interval</b>     | Configures the minimum time before a new link state update for a domain will be generated by the switch.   |
| <i>ls-interval-time</i>    | Specifies the minimum time before a new link state update for a domain will be generated by the switch. The parameter <i>ls-interval-time</i> is an integer (0-65535) specifying time in milliseconds. |

### Defaults

In Configuration mode, the default is enabled.

In the FSPF configuration mode, the default is dynamic.

If configuring spf hold-time, the default value for FSPF is 0.

If configuring min-ls-arrival, the default value for FSPF is 1000 msec.

If configuring min-ls-interval, the default value for FSPF is 5000 msec.

### Command Modes

Configuration mode.

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

**Usage Guidelines** This command configures FSPF on VSANs globally.  
 For the commands issued in FSPF configuration mode, you do not have to specify the VSAN number every time. This prevents configuration errors that might result from specifying the wrong VSAN number for these commands.

**Examples** The following example configures FSPF globally in VSAN 1, deletes the FSPF configured in VSAN 3, disables FSPF in VSAN 5, and enables FSPF in VSAN 7.

```
switch## config t
switch(config)##
switch(config)# fspf config vsan 1
switch-config-(fspf-config)#
switch-config-(fspf-config)# exit
switch(config)##
switch(config)# no fspf config vsan 3
switch(config)#
switch(config)# no fspf enable vsan 5
switch(config)#
switch(config)# fspf enable vsan 7
switch(config)#
```

| Related Commands | Command                    | Description   |
|------------------|----------------------------|---|
|                  | <b>show fspf interface</b> | Displays information for each selected interface.   |
|                  | <b>fspf enable</b>         | Enables FSPF routing protocol in the specified VSAN (from the <code>switch(config-if)#</code> prompt).  |
|                  | <b>fspf cost</b>           | Configures the cost for the selected interface in the specified VSAN (from the <code>switch(config-if)#</code> prompt).                           |
|                  | <b>fspf hello-interval</b> | Specifies the hello message interval to verify the health of a link in the VSAN (from the <code>switch(config-if)#</code> prompt).                |
|                  | <b>fspf passive</b>        | Disables the FSPF protocol for the specified interface in the specified VSAN (from the <code>switch(config-if)#</code> prompt).                   |
|                  | <b>fspf retransmit</b>     | Specifies the retransmit time interval for unacknowledged link state updates in specified VSAN (from the <code>switch(config-if)#</code> prompt). |

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