CHAPTER 21

S 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 "About the CLI Command Modes" section on page 1-3 to determine the appropriate mode for each command.

salt (sa configuration submode)

To configure the salt for the Security Association (SA), use the **key** command. To delete the salt from the SA, use the **no** form of the command.

salt *salt*

no salt *salt*

Syntax Description

salt	Specifies the salt for encryption. The range is from 0x0 to 0xffffffff.

Defaults

None.

Command Modes

Configuration submode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure the salt for the current SA:

```
switch# config t
switch(config)# fcsp esp sa 257
This is a Early Field Trial (EFT) feature.  Please do not use this in a producti
on environment. Continue Y/N ? [no] y
switch(config-sa)# salt 0x0
```

Related Commands

Command	Description
fcsp enable	Enables FC-SP.
show fcsp interface	Displays FC-SP-related information for a specific interface.

san-ext-tuner enable

To enable the IP Network Simulator to simulate a variety of data network conditions, use the **san-ext-tuner enable** command.

san-ext-tuner enable

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
3.1(1)	This command was introduced.

Usage Guidelines

The IP Network Simulator tool is used for network simulation and is supported on the 8-port IP Storage Services (IPS-8) module and 4-port IP Storage Services (IPS-4) module only. You must also have either the SAN extension over IP package for IPS-8 modules (SAN_EXTN_OVER_IP) or SAN extension over IP package for IPS-4 modules (SAN_EXTN_OVER_IP_IPS4), so that you can enable the SAN Extension Tuner, a prerequisite for enabling and using the network simulator.

You must have a pair of Gigabit Ethernet ports dedicated for each Ethernet path requiring simulation; these ports cannot provide FCIP or iSCSI functionality while simulation occurs. The remaining ports that are not performing network simulations can run FCIP or iSCSI. Ports dedicated to network simulation must be adjacent, and always begin with an odd-numbered port. For example, GE 1/1 and GE 1/2 would be a valid pair, while GE 2/2 and GE 2/3 would not.

Note This command is not supported on the Cisco MDS 9124 switch, the Cisco Fabric Switch for HP c-Class BladeSystem, and the Cisco Fabric Switch for IBM BladeCenter.

Examples

The following example shows how to enable the SAN Extension Tuner and enable a pair of ports for network simulation:

```
switch# config t
switch(config)#
switch(config)# san-ext-tuner enable
switch(config)# exit
switch#
switch# ips netsim enable interface gigabitethernet 2/3 gigabitethernet 2/4
```

Related Commands

Command	Description
show ips netsim	Displays a summary of the interfaces that are currently operating in network simulation mode.
show ips stats netsim ingress	Displays the parameters and statistics of interfaces currently operating in network simulation mode for the specified direction of traffic.

santap module

To configure the mapping between the Storage Services Module (SSM) and the VSAN where the appliance is configured, use the **santap module** command in configuration mode. To disable this feature, use the **no** form of the command.

santap module *slot-number* {**appl-vsan** *vsan-id* [**cvt-name** *cvt-name*] |
dvt target-pwwn *target-pwwn* **target-vsan** *target-vsan-id* **dvt-name** *dvt-name* **dvt-vsan** *dvt-vsan-id* [**dvt-port** *port-number*] [**lun-size-handling** *enable/disable*] [**io-timeout** *timeout-value*]}

no santap module *slot-number* {**appl-vsan** *vsan-id* [**cvt-name** *cvt-name*] |
dvt target-pwwn *target-pwwn*}

Syntax Description

slot-number	Specifies the slot number of the SSM where the control virtual target (CVT) is created.
appl-vsan *vsan-id*	Specifies the appliance VSAN identification number used to communicate with the appliance. The range is 1 to 4093.
cvt-name *cvt-name*	(Optional) Specifies the control virtual target (CVT) name. The maximum size is 80 characters.
dvt	Configures the data virtual target (DVT).
target-pwwn *target-pwwn*	Specifies the target pWWN for the DVT. The format is *hh:hh:hh:hh:hh:hh:hh:hh.*
target-vsan *target-vsan-id*	Specifies the target VSAN for the DVT. The range for the real *target-vsan-id* is 1 through 4093.
dvt-name *dvt-name*	Specifies the DVT name. The maximum size is 80 characters.
dvt-vsan *dvt-vsan-id*	Specifies the DVT VSAN. The range for the *dvt-vsan-id* is 1 through 4093.
dvt-port *port-number*	(Optional) Specifies the DVT port. The range for the port number is 1 through 32.
lun-size-handling *enable/disable*	(Optional) Enables or disables LUN size handling. Specify 1 to enable or 0 to disable LUN size handling, with the default being enable.
io-timeout *timeout-value*	(Optional) Specifies the I/O timeout value. The range is 10 to 200 seconds, with the default being 10 seconds.

Defaults

Disabled.

The IO-timeout is 10 seconds.

Lun-size-handling is Enabled.

Command Modes

Configuration mode.

Command History

Release	Modification
2.1(1a)	This command was introduced.
3.0(1)	Added the following options: **cvt-name**, **dvt**, **target-pwwn**, **target-vsan**, **dvt-name**, **dvt-vsan**, **dvt-port**, **lun-size-handling**, and **io-timeout**.

Usage Guidelines

To access this command, you must first enable the SANTap feature on the SSM using the **ssm enable feature** command.

When the **lun-size-handling** option is set (enabled), the maximum logical block addressing (LBA) for DVT LUN is set to 2 TB. As a result, there is no issue with LUN resizing.

Note You can delete dvt target-pwwn using the **no santap module** *slot* dvt **target-pwwn** command. Other dvt options are not supported by the **no** form of the command.

Examples

The following example shows the configuration of the SSM where the SANTap feature is enabled and the VSAN used to communicate with the appliance:

```
switch# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# santap module 1 appl-vsan 1
```

Related Commands

Command	Description
show santap module	Displays the configuration and statistics of the SANTap feature.
ssm enable feature	Enables the SANTap feature on the SSM.

scaling batch enable

To enable scalability in the Cisco SME configuration, use the scaling batch enable command. To disable this feature, use the **no** form of the command.

scaling batch enable

no scaling batch enable

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Cisco SME cluster onfiguration submode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to enable Cisco SME scalability:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# scaling batch enable
switch(config-sme-cl)#
```

Related Commands

Command	Description
show santap module	Displays the configuration and statistics of the SANTap feature.
ssm enable feature	Enables the SANTap feature on the SSM.

scheduler

To schedule a maintenance job, use the **scheduler** command. To disable a job, use the **no** form of the command.

scheduler {**aaa-authentication** [**username** *username*] **password** [**0** | **7**] *password* | **job name** *job-name* | **logfile size** *filesize* | **schedule name** *schedule-name*}

no scheduler {**aaa-authentication** [**username** *username*] **password** [**0** | **7**] *password* | **job name** *job-name* | **logfile size** *filesize* | **schedule name** *schedule-name*}

Syntax Description

aaa-authentication	Begins an AAA authentication exchange with a remote user.
username *username*	(Optional) Specifies the remote user and specifies the username.
password	Specifies the password of the logged-in remote user for AAA authentication.
0	(Optional) Specifies that the password is in clear text.
7	(Optional) Specifies that the password is encrypted.
password	Specifies the remote user's password.
job name	Specifies a scheduler job.
name *job-name*	Specifies the name of the scheduler job. The maximum length is 31 characters.
logfile size	Specifies a log file configuration.
size *filesize*	Specifies the size of the log file. The range is 16 to 1024 KB.
schedule name	Defines a schedule for the scheduler.
name *schedule-name*	Specifies the name of the schedule. The maximum length is 31 characters.

Defaults

None.

Command Modes

Job Configuration mode.

Command History

Release	Modification
NX-OS 4.1(3)	Deleted a note from the Usage Guidelines.
NX-OS 4.1(1b)	Added a note to the Usage Guidelines.
2.0(x)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to enable the scheduler command:

```
switch# config t
switch(config)# scheduler enable
```

Related Commands

Command	Description
feature scheduler	Enables the scheduler.
show scheduler	Displays scheduler information.

scheduler aaa-authentication

To use the command scheduler feature, a remote user must use the **scheduler aaa-authentication** command to specify an AAA authentication password.

scheduler aaa-authentication [**username** *username*] **password** [**0** | **7**] *password*

Syntax Description

username *username*	(Optional) Specifies the remote user's name.
password	Specifies the password of the logged-in remote user for AAA authentication.
0	(Optional) Indicates the password is in clear text.
7	(Optional) Indicates the password is encrypted.
password	Specifies the remote user's password.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
3.0(3)	This command was introduced.

Usage Guidelines

This command is for remote users who need to use the scheduler feature.

Examples

The following example shows how to specify the password for a remote user:

```
switch# config t
switch(config)# scheduler aaa-authentication password newpwd
```

The following example shows how to specify a clear text password for a remote user:

```
switch# config t
switch(config)# scheduler aaa-authentication password 0 newpwd
```

The following example shows how to specify an encrypted password for a remote user:

```
switch# config t
switch(config)# scheduler aaa-authentication password 7 newpwd2
```

The following example shows how to specify a name and authentication password for a remote user:

```
switch# config t
switch(config)# scheduler aaa-authentication username admin1 password newpwd3
```

Related Commands

Command	Description
scheduler enable	Enables and disables the scheduler.
scheduler job	Defines a job.
scheduler logfile	Configures a scheduler log file.
scheduler schedule	Defines a schedule.
show scheduler	Shows the scheduler configuration or data.

scsi-flow distribute

To enable SCSI flow distribution through CFS, use the **scsi-flow distribute** command. To disable the SCSI flow distribution, use the **no** form of the command.

scsi-flow distribute

no scsi-flow distribute

Syntax Description

This command has no arguments or keywords.

Defaults

SCSI flow distribution is enabled.

Command Modes

Configuration mode.

Command History

Release	Modification
2.0(2)	This command was introduced.

Usage Guidelines

You must enable the SCSI flow feature on the Storage Services Module (SSM) before you can configure an SCSI flow. Use the **ssm enable feature module** *slot-number* command to enable the SCSI flow feature on the SSM.

Examples

The following example enables distribution of SCSI flow services using CFS:

```
switch# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# scsi-flow distribute
```

The following example disables distribution of SCSI flow services:

```
switch(config)# no scsi-flow distribute
```

Related Commands

Command	Description
show santap module	Displays SCSI flow configuration and status.
ssm enable feature	Enables the SCSI flow feature on the SSM.

scsi-flow flow-id

To configure SCSI flow services, use the **scsi-flow flow-id** command. To disable the SCSI flow services, use the **no** form of the command.

scsi-flow flow-id *flow-id* {**initiator-vsan** *vsan-id* **initiator-pwwn** *wwn* **target-vsan** *vsan-id* **target-pwwn** *wwn* | **statistics** | **write-acceleration** [**buffers** *count*]}

no scsi-flow flow-id *flow-id* {**statistics** | **write-acceleration]**

Syntax Description

flow-id	Configures the SCSI flow identification number. The range is 1 to 65535.
initiator-vsan *vsan-id*	Specifies the initiator VSAN identification number. The range is 1 to 4093.
initiator-pwwn *wwn*	Configures initiator side pWWN.
target-vsan *vsan-id*	Configures target VSAN identification number of the SCSI flow.
target-pwwn *wwn*	Configures the target side pWWN.
write-acceleration	Enables write acceleration.
statistics	Enables statistics gathering.
buffers *count*	(Optional) Configures the write acceleration buffer count. The range is 1 to 40000 and the default is 1024.

Defaults

SCSI flow services are disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
2.0(2)	This command was introduced.

Usage Guidelines

You must enable the SCSI flow feature on the Storage Services Module (SSM) before you can configure a SCSI flow. Use the **ssm enable feature module** *slot-number* command to enable the SCSI flow feature on the SSM.

Examples

The following example configures an SCSI flow with a flow identifier of 4 and the following attributes:

- Initiator VSAN number—101
- Initiator port WWN—21:00:00:e0:8b:05:76:28
- Target VSAN number—101
- Target port—WWN 21:00:00:20:37:38:67:cf

```
switch# config terminal
switch(config)# scsi-flow flow-id 4 initiator-vsan 101 initiator-pwwn
21:00:00:e0:8b:05:76:28 target-vsan 101 target-pwwn 21:00:00:20:37:38:67:cf
```

The following example disables a SCSI flow with a flow identifier of 4:

```
switch(config)# no scsi-flow flow-id 4
```

The following example configures SCSI flow 4 to gather statistics about the SCSI flow:

```
switch(conf)# scsi-flow flow-id 4 statistics
```

The following example disables the statistics gathering feature on SCSI flow 4:

```
switch(conf)# no scsi-flow flow-id 4 statistics
```

The following example configures SCSI flow 4 with write acceleration:

```
switch(conf)# scsi-flow flow-id 4 write-acceleration
```

The following example configures SCSI flow 4 with write acceleration and buffers of 1024 credits:

```
switch(conf)# scsi-flow flow-id 4 write-acceleration buffer 1024
```

The following example disables the write acceleration feature on SCSI flow 4:

```
switch(conf)# no scsi-flow flow-id 4 write-acceleration
```

Related Commands

Command	Description
show scsi-flow	Displays SCSI flow configuration and status.
ssm enable feature	Enables the SCSI flow feature on the SSM.

scsi-target

To configure SCSI target discovery, use the **scsi-target** command in configuration mode. To remove SCSI target discovery, use the **no** form of the command.

scsi-target {**auto-poll** [**vsan** *vsan-id*] | **discovery** | **ns-poll** [**vsan** *vsan-id*] | **on-demand** [**vsan** *vsan-id*]}

no scsi-target {**auto-poll** [**vsan** *vsan-id*] | **discovery** | **ns-poll** [**vsan** *vsan-id*] | **on-demand** [**vsan** *vsan-id*]}

Syntax Description

auto-poll	Configures SCSI target auto polling globally or per VSAN.
vsan *vsan-id*	(Optional) Specifies a VSAN ID. The range is 1 to 4093.
discovery	Configures SCSI target discovery.
ns-poll	Configures SCSI target name server polling globally or per VSAN.
on-demand	Configures SCSI targets on demand globally or per VSAN.

Defaults

SCSI target discovery for each option is on.

Command Modes

Configuration mode.

Command History

Release	Modification
3.0(1a)	This command was introduced.

Usage Guidelines

Automatic global SCSI target discovery is on by default. Discovery can also be triggered for specific VSANs using on-demand, name server polling, or auto-polling options. All options are on by default. Use the **no scsi-target discovery** command to turn off all discovery options. You can also turn off specific options by using the **no** form of the command.

Examples

The following example configures SCSI target auto-polling discovery for VSAN 1:

```
switch# config t
switch(config)# scsi-target auto-poll vsan 1
```

The following example removes SCSI target auto-polling discovery for VSAN 1:

```
switch# config t
switch(config)# no scsi-target auto-poll vsan 1
```

The following example configures an SCSI target discovery:

```
switch# config t
switch(config)# scsi-target discovery
```

The following example removes a SCSI target discovery:

```
switch# config t
switch(config)# no scsi-target discovery
```

The following example configures SCSI target ns-polling discovery for VSAN 1:

```
switch# config t
switch(config)# scsi-target ns-poll vsan 1
```

The following example removes SCSI target ns-polling discovery for VSAN 1:

```
switch# config t
switch(config)# no scsi-target ns-poll vsan 1
```

The following example configures SCSI target on-demand discovery for VSAN 1:

```
switch# config t
switch(config)# scsi-target on-demand vsan 1
```

The following example removes SCSI target on-demand discovery for VSAN 1:

```
switch# config t
switch(config)# no scsi-target on-demand vsan 1
```

Related Commands

Command	Description
discover scsi-target	Discovers SCSI targets on local storage to the switch or remote storage across the fabric.
show scsi-target	Displays information about existing SCSI target configurations.

sdv abort vsan

To terminate an SDV configuration for a specified VSAN, use the **sdv abort vsan** command in configuration mode.

sdv abort vsan *vsan-id*

Syntax Description

vsan-id	Specifies the number of the VSAN. The range is 1 to 4093.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
3.1(2)	This command was introduced.

Usage Guidelines

To use this command, you must enable SDV using the **sdv enable** command.

Examples

The following example shows how to terminate an SDV configuration for a specified VSAN:

```
switch# config t
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# sdv abort vsan 2
```

Related Commands

Command	Description
sdv enable	Enables SDV.
show sdv database	Displays the SDV database.

sdv commit vsan

To commit an SDV configuration to a specified VSAN, use the **sdv commit vsan** command in configuration mode. To remove the SDV configuration for a specified VSAN, use the **no** form of the command.

sdv commit vsan *vsan-id*

no sdv commit vsan *vsan-id*

Syntax Description

vsan-id	Specifies the number of the VSAN. The range is 1 to 4093.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
3.1(2)	This command was introduced.

Usage Guidelines

To use this command, you must enable SDV using the **sdv enable** command.

Examples

The following example shows how to commit an SDV configuration to a specified VSAN:

```
switch# config t
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# sdv commit vsan 2
```

The following example shows how to uncommit an SDV configuration from a specified VSAN:

```
switch# config t
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# no sdv commit vsan 2
```

Related Commands

Command	Description
sdv enable	Enables SDV.
show sdv database	Displays the SDV database.

sdv enable

To enable SDV on the switch, use the **sdv enable** command in configuration mode. To disable SDV, use the **no** form of the command.

sdv enable

no sdv enable

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
3.1(2)	This command was introduced.
NX-OS 4.1(1b)	This command was deprecated.

Usage Guidelines

None.

Examples

The following example shows how to enable SDV:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# sdv enable
```

The following example shows how to disable SDV:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# no sdv enable
```

Related Commands

Command	Description
show sdv database	Displays the SDV database.
show vritual-device	Displays the virtual devices.

sdv virtual-device name

To create a virtual device name for a specified VSAN, use the **sdv virtual-device name** command in configuration mode. To remove the name, use the **no** form of the command.

sdv virtual-device name *device-name* **vsan** *vsan-id*

no sdv virtual-device name *device-name* **vsan** *vsan-id*

Syntax Description

name *device-name*	Specifies the name of the device. The maximum size is 32.
vsan *vsan-id*	Specifies the number of the VSAN. The range is 1 to 4093.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
3.1(2)	This command was introduced.

Usage Guidelines

To use this command, you must enable SDV using the **sdv enable** command.

No more than 1000 virtual targets can be created in a single VSAN.

No more than 128 devices can be defined as virtual devices.

Examples

The following example shows how to create a virtual device name for a VSAN, and then specify both the primary and secondary pWWNs:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# sdv virtual-device name vdev1 vsan 2
switch(config-sdv-virt-dev)# pwwn 21:00:00:04:cf:cf:45:40 primary
switch(config-sdv-virt-dev)# pwwn 21:00:00:04:cf:cf:38:d6
```

The following example shows how to remove the virtual device name:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# no sdv virtual-device name vdev1 vsan 2
```

Related Commands

Command	Description
sdv enable	Enables SDV.
show sdv database	Displays the SDV database.

security-mode

To configure the Cisco SME security settings, use the **security-mode** command. To delete the security settings, use the **no** form of the command.

security-mode {**basic** | **standard** | **advanced** {**schema threshold** *threshold* **total** *total* }}

no security-mode {**basic** | **standard** | **advanced** {**schema threshold** *threshold* **total** *total* }}

Syntax Description

basic	Sets the Cisco SME security level to basic.
standard	Sets the Cisco SME security level to standard.
advanced	Sets the Cisco SME security level to advanced.
schema	Configures the recovery schema.
threshold *threshold*	Configures the recovery schema threshold. The limit is 2-3.
total *total*	Configures the recovery schema total. The limit is 5-5.

Defaults

None.

Command Modes

Cisco SME cluster configuration submode.

Command History

Release	Modification
3.2(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example sets the security mode to basic:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# security-mode basic
```

The following example sets the security mode to advanced:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# security-mode advanced schema threshold 3 total 5
```

Related Commands

Command	Description
show sme cluster	Displays information about the security settings.

send

To send a message to all active CLI users currently using the switch, use the **send** command in EXEC mode.

send *message-text*

Syntax Description

message-text	Specifies the text of your message.

Defaults

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

This message is restricted to 80 alphanumeric characters with spaces.

Examples

The following example sends a warning message to all active users about the switch being shut down:

```
switch# send Shutting down the system in 2 minutes. Please log off.

Broadcast Message from admin@excal-112
        (/dev/pts/3) at 16:50 ...

Shutting down the system in 2 minutes. Please log off.
```

server

To add a server in an Internet Storage Name Service (iSNS) profile, use the **server** command in iSNS profile configuration submode. To delete a server from an iSNS profile, use the **no** form of the command.

server *server-id*

no server *server-id*

Syntax Description

server-id	Specifies the server address. The format is *A.B.C.D*.

Defaults

None.

Command Modes

iSNS profile configuration submode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

An iSNS profile can have only one server address. To change the server address, you must delete the current server and add the new one.

Examples

The following example shows how to add a server address to an iSNS profile:

```
switch# config terminal
switch(config)# isns profile name UserProfile
switch(config-isns-profile)# server 10.1.1.1
```

The following example shows how to delete a server address from an iSNS profile:

```
switch# config terminal
switch(config)# isns profile name AdminProfile
switch(config-isns-profile)# no server 10.2.2.2
```

Related Commands

Command	Description
isns-server enable	Enables the iSNS server.
isns profile name	Creates iSNS profiles.
show isns	Displays iSNS information.

server (configure session submode)

To configure a data migration session, use the server command in session configuration submode. To remove the data migration session, use then **no** form of the command.

server *pwwn* **src_tgt** *pwwn* **src_lun** *src-lun* **dst_tgt** *pwwn* **dst_lun** *dst-lun*

no server *pwwn* **src_tgt** *pwwn* **src_lun** *src-lun* **dst_tgt** *pwwn* **dst_lun** *dst-lun*

Syntax Description

pwwn	Specifies the pWWN of the server. The format is *hh:hh:hh:hh:hh:hh:hh:hh,* where *h* is a hexadecimal number.
src_tgt *pwwn*	Specifies the pWWN of the source target. The format is *hh:hh:hh:hh:hh:hh:hh:hh*, where *h* is a hexadecimal number.
src_lun *src-lun*	Specifies the source LUN number in hex notation. The range is 0x0 to 0xfff.
dst_tgt *pwwn*	Specifies the pWWNof the destination target. The format is *hh:hh:hh:hh:hh:hh:hh:hh*, where *h* is a hexadecimal number.
dst_lun *dst-lun*	Specifies the destination LUN in hex notation. The range is 0x0 to 0xfff.

Defaults

None.

Command Modes

Configure session submode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure a source target, source LUN, destination target, and destination LUN in a session:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# dmm module 3 job 1 session
switch(config-session)# server 12:13:1d:1c:2d:2d:3f:3a src_tgt 12:13:1d:1c:2d:2d:3f:3a
src_lun 0x1 dst_tgt 12:13:1d:1c:2d:2d:3f:3a dst_lun 0x5
```

Related Commands

Command	Description
show dmm ip-peer	Displays job information.
show dmm srvr-vt-login	Displays server VT login information.

server (DMM job configuration submode)

To add a server HBA port to the DMM job, use the **server** command in DMM job configuration submode. To remove the server HBA port, use the **no** form of the command.

server vsan *vsan-id* **pwwn** *port-wwn*

no server vsan *vsan-id* **pwwn** *port-wwn*

Syntax Description

vsan *vsan-id*	Specifies the VSAN ID. The range is 1 to 4093.
pwwn *port-wwn*	Specifies the port worldwide name of the server HBA port. The format is *hh:hh:hh:hh:hh:hh:hh:hh*, where *h* is a hexadecimal number.

Defaults

None.

Command Modes

DMM job configuration submode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to add server information to a DMM job:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# dmm module 3 job 1 create
Started New DMM Job Configuration.
Do not exit sub-mode until configuration is complete and committed
switch(config-dmm-job)# server vsan 3 pwwn 1d:22:3a:21:3c:44:3b:51
switch(config-dmm-job)#
```

Related Commands

Command	Description
show dmm ip-peer	Displays job information.
show dmm srvr-vt-login	Displays server VT login information.

server (radius configuration)

To configure a RADIUS server, use the **server** command in RADIUS configuration submode. To discard the configuration, use the **no** form of the command.

server [*ipv4-address* | *ipv6-address* | *dns-name*]

no server [*ipv4-address* | *ipv6-address* | *dns-name*]

Syntax Description

ipv4-address	(Optional) Specifies the RADIUS server IP address in the format *A.B.C.D*.
ipv6-address	(Optional) Specifies the RADIUS server IP address in the format *X:X::X*.
name	(Optional) Specifies the RADIUS DNS server name. The maximum size is 255.

Defaults

None.

Command Modes

RADIUS configuration submode.

Command History

Release	Modification
1.3(1)	This command was introduced.
3.0(1)	Added the *ipv6-address* argument.

Usage Guidelines

None.

Examples

The following example shows the **server** command in RADIUS configuration submode:

```
switch# config terminal
switch(config)# aaa group server radius testgroup
switch(config-radius)# server myserver
```

Related Commands

Command	Description
radius-server host	Configures RADIUS server parameters.
show radius-server	Displays RADIUS server configuration parameters.

server (tacacs+ configuration)

To configure a TACACS+ server, use the **server** command in TACACS+ configuration submode. To discard the configuration, use the **no** form of the command.

server [*ipv4-address* | *ipv6-address* | *dns-name*]

no server [*ipv4-address* | *ipv6-address* | *dns-name*]

Syntax Description

ipv4-address	(Optional) Specifies the TACACS+ server IP address in the format *A.B.C.D*.
ipv6-address	(Optional) Specifies the TACACS+ server IP address in the format *X:X::X*.
dns-name	(Optional) Specifies the TACACS+ DNS server name. The maximum size is 255.

Defaults

None.

Command Modes

TACACS+ configuration submode.

Command History

Release	Modification
1.3(1)	This command was introduced.
3.0(1)	Added the *ipv6-address* argument.

Usage Guidelines

None.

Examples

The following example shows the **server** command in RADIUS configuration submode:

```
switch# config terminal
switch(config)# aaa group server tacacs+ testgroup
switch(config-tacacs+)# server myserver
```

Related Commands

Command	Description
show tacacs-server	Displays TACACS+ server configuration parameters.
tacacs-server host	Configures TACACS+ server parameters.

set (IPsec crypto map configuration submode)

To configure attributes for IPsec crypto map entries, use the **set** command in IPsec crytpo map configuration submode. To revert to the default values, use the **no** form of the command.

set {**peer** {*ip-address* | **auto-peer**} | **pfs** [**group1** | **group14** | **group2** | **group5**] | **security-association lifetime** {**gigabytes** *number* | **kilobytes** *number* | **megabytes** *number* | **seconds** *number*} | **transform-set** {*set-name* | *set-name-list*}}

no set {**peer** {*ip-address* | **auto-peer**} | **pfs** | **security-association lifetime** {**gigabytes** | **kilobytes** | **megabytes** | **seconds**} | **transform-set**}

Syntax Description

peer	Specifies an allowed encryption/decryption peer.
ip-address	Specifies a static IP address for the destination peer.
auto-peer	Specifies automatic assignment of the address for the destination peer.
pfs	Specifies the perfect forwarding secrecy.
group1	(Optional) Specifies PFS DH Group1 (768-bit MODP).
group14	(Optional) Specifies PFS DH Group14 (2048-bit MODP).
group2	(Optional) Specifies PFS DH Group2 (1024-bit MODP).
group5	(Optional) Specifies PFS DH Group5 (1536-bit MODP).
security-association lifetime	Specifies the security association lifetime in traffic volume or time in seconds.
gigabytes *number*	Specifies a volume-based key duration in gigabytes. The range is 1 to 4095.
kilobytes *number*	Specifies a volume-based key duration in kilobytes. The range is 2560 to 2147483647.
megabytes *number*	Specifies a volume-based key duration in megabytes. The range is 3 to 4193280.
seconds *number*	Specifies a time-based key duration in seconds. The range is 120 to 86400.
transform-set	Configures the transform set name or set name list.
set-name	Specifies a transform set name. Maximum length is 63 characters.
set-name-list	Specifies a comma-separated transform set name list. Maximum length of each name is 63 characters. You can specified a maximum of six lists.

Defaults

None.

PFS is disabled by default. When it is enabled without a group parameter, the default is group1.

The security association lifetime defaults to global setting configured by the **crypto global domain ipsec security-association lifetime** command.

Command Modes

IPsec crypto map configuration submode.

Command History

Release	Modification
2.0(1b)	This command was introduced.

Usage Guidelines

To use this command, IPsec must be enabled using the **crypto ipsec enable** command.

Examples

The following example shows how to configure IPsec crypto map attributes:

```
switch# config terminal
switch(config)# crypto map domain ipsec x 1
switch(config-crypto-map-ip)# set peer auto-peer
```

Related Commands

Command	Description
crypto global domain ipsec security-association lifetime	Configures the global security association lifetime value.
crypto ipsec enable	Enables IPsec.
show crypto map domain ipsec	Displays IPsec crypto map information.

setup

To enter the switch setup mode, use the **setup** command in EXEC mode.

setup

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

The setup utility guides you through the basic configuration process. Type **Ctrl-c** at any prompt to skip the remaining configuration options and proceed with what is configured to that point.

If you do not want to answer a previously configured question, or if you want to skip answers to any questions, press **Enter**. If a default answer is not available (for example switch name), the switch uses what is already configured, and skips to the next question.

Examples

The following example shows how to enter switch setup mode:

```
switch# setup
---- Basic System Configuration Dialog ----

This setup utility will guide you through the basic configuration of
the system. Setup configures only enough connectivity for management
of the system.

*Note: setup always assumes a predefined defaults irrespective
of the current system configuration when invoked from CLI.

Press Enter incase you want to skip any dialog. Use ctrl-c at anytime
to skip away remaining dialogs.

Would you like to enter the basic configuration dialog (yes/no): yes
```

setup

To run the basic setup facility, use the **setup** command.

setup | ficon | sme

Syntax Description

ficon	Runs the basic FICON setup command facility.
sme	Runs the basic Cisco SME setup command facility.

Defaults

None.

Command Modes

EXEC.

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

Use the **setup sme** command to create the sme-admin and sme-recovery roles for Cisco SME.

Examples

The following example creates the sme-admin and sme-recovery roles:

```
switch# setup sme
Set up two roles necessary for SME, sme-admin and sme-recovery? (yes/no) [no] y
SME setup done
```

Related Commands

Command	Description
show role	Displays information about the various Cisco SME role configurations.

setup ficon

To enter the automated FICON setup mode, use the **setup ficon** command in EXEC mode.

setup ficon

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

The setup utility guides you through the basic configuration process. Type **Ctrl-c** at any prompt to skip the remaining configuration options and proceed with what is configured to that point.

If you do not want to answer a previously configured question, or if you want to skip the answers to any questions, press **Enter**. If a default answer is not available (for example switch name), the switch uses what is already configured, and skips to the next question.

Examples

The following example shows how to enter switch setup mode:

```
switch# setup ficon
---- Basic System Configuration Dialog ----

--- Ficon Configuration Dialog ---

This setup utility will guide you through basic Ficon Configuration
on the system.

Press Enter if you want to skip any dialog. Use ctrl-c at anytime
to skip all remaining dialogs.

Would you like to enter the basic configuration dialog (yes/no): yes
```

shared-keymode

To configure the shared key mode, use the **shared-keymode** command. To specify the unique key mode, use the **no** form of the command.

shared-keymode

no shared-keymode

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Cisco SME cluster configuration submode.

Command History

Release	Modification
3.2(2)	This command was introduced.

Usage Guidelines

The **shared-keymode** command generates a single key that is used for a group of backup tapes.

The **no shared-keymode** generates unique or specific keys for each tape cartridge.

Note The shared unique key mode should be specified if you want to enable the key-ontape feature.

Examples

The following example specifies the shared key mode:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# shared-keymode
```

The following example specifies the shared unique keymode:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# no shared-keymode
```

Related Commands

Command	Description
show sme cluster	Displays Cisco SME cluster information.

shutdown

To disable an interface, use the **shutdown** command. To enable an interface, use the **no** form of the command.

shutdown [**force**]

no shutdown [**force**]

Syntax Description

force	(Optional) Forces the shutdown of the mgmt 0 interface.

Defaults

None.

Command Modes

Interface configuration submode.

Command History

Release	Modification
1.0(1)	This command was introduced.

Usage Guidelines

The default state for interfaces is shutdown. Use the **no shutdown** command to enable an interface to carry traffic.

When you try to shut down a management interface (mgmt0), a follow-up message confirms your action before performing the operation. Use the **force** option to bypass this confirmation, if required.

Examples

The following example shows how to enable an interface:

```
switch# config terminal
switch(config)# interface fc 1/2
switch(config-if)# no shutdown
```

The following example shows how to disable an interface:

```
switch# config terminal
switch(config)# interface mgmt 0
switch(config-if)# shutdown
```

The following example shows how to forcefully disable the mgmt 0 interface:

```
switch# config terminal
switch(config)# interface mgmt 0
switch(config-if)# shutdown force
```

Related Commands

Command	Description
interface	Specifies an interface and enters interface configuration submode.
show interface	Displays interface information.

shutdown (interface configuration submode)

To disable an Cisco SME interface, use the **shutdown** command. To enable the interface, use the **no** form of the command.

shutdown

no shutdown

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Interface configuration submode.

Command History

Release	Modification
3.2(2)	This command was introduced.

Usage Guidelines

The default state for Cisco SME interfaces is shutdown. Use the **no shutdown** command to enable the interface to carry traffic.

The **show interface** command shows that the Cisco SME interface is down until the interface is added to a cluster.

Examples

The following example enables a Cisco SME interface:

```
switch# config t
switch(config)# interface sme 4/1
switch(config-if)# no shutdown
```

The following example disables a Cisco SME interface:

```
switch# config t
switch(config)# interface sme 4/1
switch(config-if)# shutdown
```

Related Commands

Command	Description
show interface sme	Displays information about the Cisco SME interface.

shutdown (Cisco SME cluster configuration submode)

To disable a cluster for recovery, use the **shutdown** command. To enable the cluster for recovery, use the **no** form of the command.

shutdown

no shutdown

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Cisco SME cluster configuration submode.

Command History

Release	Modification
3.2(2)	This command was introduced.

Usage Guidelines

To disable operation of a cluster for the purpose of recovery, use the **shutdown** command. To enable the cluster for normal usage, use the **no shutdown** command.

The default state for clusters is **no shutdown**. Use the **shutdown** command for cluster recovery.

Examples

The following example restarts the cluster after recovery is complete:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# no shutdown
```

The following example disables the cluster operation in order to start recovery:

```
switch# config t
switch(config))# sme cluster c1
switch(config-switch(config-sme-cl)# shutdown
```

Related Commands

Command	Description
show sme cluster	Displays information about the Cisco SME cluster.

site-id

To configure the site ID with the Call Home function, use the **site-id** command in Call Home configuration submode. To disable this feature, use the **no** form of the command.

site-id {*site-number*}

no site-id {*site-number*}

Syntax Description

site-number	Identifies the unit to the outsourced throughput. Allows up to 256 alphanumeric characters in free format.

Defaults

None.

Command Modes

Call Home configuration submode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure the site ID in the Call Home configuration:

```
switch# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# callhome
switch(config-callhome)# site-id Site1ManhattanNY
```

Related Commands

Command	Description
callhome	Configures the Call Home function.
callhome test	Sends a dummy test message to the configured destination(s).
show callhome	Displays configured Call Home information.

sleep

To delay an action by a specified number of seconds, use the **sleep** command.

sleep {*seconds*}

Syntax Description

seconds	Specifies the delay in number of seconds. The range is 0 to 2147483647.

Defaults

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

This command is useful within scripts.

Examples

The following example shows how to create a script called test-script:

```
switch# show file slot0:test-script
discover scsi-target remote
sleep 10
show scsi-target disk

switch# run-script slot0:test-script
```

When you execute the slot0:test-script, the switch executes the **discover scsi-target remote** command, and then waits for 10 seconds before executing the **show scsi-target disk** command.

The following example shows how to delay the switch prompt return:

```
switch# sleep 30
```

You will see the switch prompt return after 30 seconds.

sme

To enable or disable the Cisco SME services, use the **sme** command.

sme{**cluster** *name* | **transport ssl trustpoint** *trustpoint label*}

Syntax Description

cluster	Configures the cluster.
name	Identifies the cluster name.
transport	Configures the transport information.
ssl	Configures the transport SSL information.
trustpoint	Configures the transport SSL trustpoint.
trustpoint label	Identifies the trustpoint label.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
3.2(2c)	This command was introduced.

Usage Guidelines

Cisco SME services must be enabled to take advantage of the encryption and security features.

To use this command, you must enable Cisco SME clustering using the **feature cluster** command.

Examples

The following example shows how to configure a cluster:

```
switch# config t
sw-sme-n1(config)# sme cluster clustername
sw-sme-n1(config-sme-cl)#
```

snmp port

Use the **snmp port** command to enable SNMP control of FICON configurations. To disable the configuration or to revert to factory defaults, use the **no** form of the command.

snmp port control

no snmp port control

Syntax Description

This command has no arguments or keywords.

Defaults

SNMP control of FICON configurations is enabled.

Command Modes

FICON configuration submode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

By default, SNMP users can configure FICON parameters through the Fabric Manager application. You can prohibit this access, if required, by using the **no snmp port control** command.

Examples

The following example prohibits SNMP users from configuring FICON parameters:

```
switch(config)# ficon vsan 2
switch(config-ficon)# no snmp port control
```

The following example allows SNMP users to configure FICON parameters (default):

```
switch(config-ficon)# snmp port control
```

Related Commands

Command	Description
ficon vsan *vsan-id*	Enables FICON on the specified VSAN.
show ficon	Displays configured FICON details.

snmp-server

To configure the SNMP server information, switch location, and switch name, use the **snmp-server** command in configuration mode. To remove the system contact information, use the **no** form of the command.

snmp-server {**community** *string* [**group** *group-name* | **ro** | **rw**] | **contact** [*name*] | **location** [*location*]}

no snmp-server {**community** *string* [**group** *group-name* | **ro** | **rw**] | **contact** [*name*] | **location** [*location*]}

Syntax Description

community *string*	Specifies SNMP community string. Maximum length is 32 characters.
group *group-name*	(Optional) Specifies group name to which the community belongs. Maximum length is 32 characters.
ro	(Optional) Sets read-only access with this community string.
rw	(Optional) Sets read-write access with this community string.
contact	Configures system contact.
name	(Optional) Specifies the name of the contact. Maximum length is 80 characters.
location	Configures system location.
location	(Optional) Specifies system location. Maximum length is 80 characters.

Defaults

The default community access is read-only (**ro**).

Command Modes

Configuration mode

Command History

Release	Modification
1.0(3)	This command was introduced.
2.0(1b)	Added **group** option.

Usage Guidelines

None.

Examples

The following example sets the contact information, switch location, and switch name:

```
switch# config terminal
switch(config)# snmp-server contact NewUser
switch(config)# no snmp-server contact NewUser
switch(config)# snmp-server location SanJose
switch(config)# no snmp-server location SanJose
```

Related Commands

Command	Description
show snmp	Displays SNMP information.

snmp-server contact

To modify server contact, use the **snmp-server contact** command in configuration mode. To remove the SNMP server contact, use the **no** form of the command.

snmp-server contact [*line*]

no snmp-server contact [*line*]

Syntax Description

line	(Optional) Modifies the system contact.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to modify the server contact:

```
switch# config t
switch(config)# snmp-server contact line
switch(config)#
switch(config)# no snmp-server contact line
switch(config)#
```

Related Commands

Command	Description
show snmp	Displays SNMP information.

snmp-server community

To set the SNMP server community string, use the **snmp-server community** command in configuration mode. To remove the SNMP server community string, use the **no** form of the command.

snmp-server {**community** *string* [**group** *group-name*]}

no snmp-server {**community** *string* [**group** group-name]}

Syntax Description

community *string*	SNMP community string.
group *group-name*	(Optional) Group to which the community belongs.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example sets the SNMP server community string:

```
switch# config t
switch(config)# snmp-server community public group network-operator
switch(config)#
switch(config)# no snmp-server community public group network-operator
switch(config)#
```

Related Commands

Command	Description
show snmp	Displays SNMP information.

snmp-server enable traps

To enable SNMP server notifications (informs and traps), use the **snmp-server enable traps** command**.** To disable the SNMP server notifications, use the **no** form of the command.

snmp-server enable traps [**entity** [**fru**] | **fcc** | **fcdomain** | **fcns** | **fdmi** | **fspf** | **license** | **link** [**cisco** | **ietf** [**cisco**] | **ietf-extended** [**cisco**]] | **port-security** | **rscn** [**els** | **ils**] | **snmp** [**authentication**] | **vrrp** | **zone** [**default-zone-behavior-change** | **merge-failure** | **merge-success** | **request-reject**]

no snmp-server enable traps [**entity** [**fru**] | **fcc** | **fcdomain** | **fcns** | **fdmi** | **fspf** | **license** | **link** [**cisco** | **ietf** [**cisco**] | **ietf-extended** [**cisco**]] | **port-security** | **rscn** [**els** | **ils**] | **snmp** [**authentication**] | **vrrp** | **zone** [**default-zone-behavior-change** | **merge-failure** | **merge-success** | **request-reject**]

Syntax Description

entity	(Optional) Enables all SNMP entity notifications.
fru	(Optional) Enables only SNMP entity FRU notifications.
fcc	(Optional) Enables SNMP Fibre Channel congestion control notifications.
fcdomain	(Optional) Enables SNMP Fibre Channel domain notifications.
fcns	(Optional) Enables SNMP Fibre Channel name server notifications.
fdmi	(Optional) Enables SNMP Fabric Device Management Interface notifications.
fspf	(Optional) Enables SNMP Fabric Shortest Path First notifications.
license	(Optional) Enables SNMP license manager notifications.
link	(Optional) Enables SNMP link traps.
cisco	(Optional) Enables Cisco cieLinkUp/cieLinkDown.
ietf	(Optional) Enables standard linkUp/linkDown trap.
ietf-extended	(Optional) Enables standard linkUp/linkDown trap with extra varbinds.
port-security	(Optional) Enables SNMP port security notifications.
rscn	(Optional) Enables all SNMP Registered State Change Notification notifications.
els	(Optional) Enables only SNMP RSCN ELS notifications.
ils	(Optional) Enables only SNMP RSCN ILS notifications.
snmp	(Optional) Enables all SNMP agent notifications.
authentication	(Optional) Enables only SNMP agent authentication notifications.
vrrp	(Optional) Enables SNMP Virtual Router Redundancy Protocol notifications.
zone	(Optional) Enables all SNMP zone notifications.
default-zone-behavior-change	(Optional) Enables only SNMP zone default zone behavior change notifications.
merge-failure	(Optional) Enables only SNMP zone merge failure notifications.
merge-success	(Optional) Enables only SNMP zone merge success notifications.
request-reject	(Optional) Enables only SNMP zone request reject notifications.

Defaults

All the notifications listed in the Syntax Description table are disabled by default except for the following: **entity fru**, **vrrp**, **license**, **link**, and any notification not listed (including the generic notifications such as **coldstart**, **warmstart**, and **linkupdown**).

Command Modes

Configuration mode.

Command History

Release	Modification
2.0(1b)	This command was introduced.
2.1(2)	• Added the **link** option. • Renamed the **standard** option to **ietf**. • Renamed the **standard-extended** option to **ietf-extended**.

Usage Guidelines

If the **snmp-server enable traps** command is entered without keywords, all notifications (informs and traps) are enabled.

As of Cisco MDS SAN-OS Release 2.1(2), you can configure the linkUp/linkDown notifications that you want to enable on the interfaces. You can enable the following types of linkUp/linkDown notifications:

- Cisco—Only traps (cieLinkUp, cieLinkDown) defined in CISCO-IF-EXTENSION-MIB.my are sent for an interface, if ifLinkUpDownTrapEnable (defined in IF-MIB) is enabled for that interface.
- IETF—Only traps (linkUp, linkDown) defined in IF-MIB are sent for an interface, if ifLinkUpDownTrapEnable (defined in IF-MIB) is enabled for that interface. Only the varbinds defined in the trap definition are sent with the traps.
- IETF extended—Only traps (linkUp, linkDown) defined in IF-MIB are sent for an interface, if ifLinkUpDownTrapEnable (defined in IF-MIB) is enabled for that interface. In addition to the varbinds defined in the trap definition, varbinds defined in the IF-MIB specific to the Cisco Systems implementation are sent. This is the default setting.
- IETF cisco—Traps (linkUp, linkDown) defined in IF-MIB and traps (cieLinkUp, cieLinkDown) defined in CISCO-IF-EXTENSION-MIB.my are sent for an interface, if ifLinkUpDownTrapEnable (defined in IF-MIB) is enabled for that interface. Only the varbinds defined in the trap definition are sent with the linkUp and linkDown traps.
- IETF extended cisco—Traps (linkUp, linkDown) defined in IF-MIB and traps (cieLinkUp, cieLinkDown) defined in CISCO-IF-EXTENSION-MIB.my are sent for an interface, if ifLinkUpDownTrapEnable (defined in IF-MIB) is enabled for that interface. In addition to the varbinds defined in the linkUp and linkDown trap definition, varbinds defined in the IF-MIB specific to the Cisco Systems implementation are sent with the linkUp and linkDown traps.

Examples

The following example enables all the SNMP notifications listed in the Syntax Description table:

```
switch# config terminal
switch(config)# snmp-server traps
```

The following example enables all SNMP entity notifications:

```
switch# config terminal
switch(config)# snmp-server traps entity
```

The following example enables (default) only standard extended linkUp/linkDown notifications:

```
switch# config t
switch(config)# snmp-server enable traps link
```

The following example enables only Cisco Systems defined cieLinkUp/cieLinkDown notifications:

```
switch# config terminal
switch(config)# snmp-server enable traps link cisco
```

Related Commands

Command	Description
show snmp	Displays SNMP information.
snmp-server host	Configures SNMP server host information.

snmp-server traps entity fru

To enable SNMP entity FRU trap, use the **snmp-server traps entity fru** command in configuration mode. To disable entity FRU trap, use the **no** form of the command.

snmp-server enable traps entity fru

no snmp-server enable traps entity fru

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification trap
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to enable SNMP entity FRU trap:

```
switch# config t
switch(config)# snmp-server enable traps entity fru
switch(config)#
```

Related Commands

Command	Description
show snmp	Displays SNMP information.
show snmp trap	Displays SNMP traps.

snmp-server enable traps fcdomain

To enable SNMP FC domain traps, use the **snmp-server enable traps fcdomain** command in configuration mode. To disable FC domain trap, use the **no** form of the command.

snmp-server enable traps fcdomain

no snmp-server enable traps fcdomain

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification trap
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to enable SNMP FC domain traps:

```
switch# config t
switch(config)# snmp-server enable traps fcdomain
switch(config)#
switch(config)# no snmp-server enable traps fcdomain
switch(config)#
```

Related Commands

Command	Description
show snmp	Displays SNMP information.
show snmp trap	Displays SNMP traps.

snmp-server enable traps link cisco

To enable Cisco cieLinkUp and cieLinkDown traps, use the **snmp-server enable traps link cisco** command in configuration mode. To disable Cisco link trap, use the **no** form of the command.

snmp-server enable traps link cisco

no snmp-server enable traps link cisco

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification trap
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to enable SNMP FC domain traps:

```
switch# config t
switch(config)# snmp-server enable traps link cisco
switch(config)#
switch(config)# no snmp-server enable traps link
switch(config)#
```

Related Commands

Command	Description
show snmp	Displays SNMP information.
show snmp trap	Displays SNMP traps.

snmp-server enable traps zone

To enable SNMP zone traps, use the **snmp-server enable traps zone** command in configuration mode. To disable zone trap, use the **no** form of the command.

snmp-server enable traps zone

no snmp-server enable traps zone

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification trap
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to enable SNMP zone traps:

```
switch# config t
switch(config)# snmp-server enable traps zone
switch(config)#
switch(config)# no snmp-server enable traps zone
switch(config)#
```

Related Commands

Command	Description
show snmp	Displays SNMP information.
show snmp trap	Displays SNMP traps.

snmp-server globalEnforcePriv

To globally enforce privacy for all SNMP users, use the **snmp-server globalEnforcePriv** command in configuration mode. To disable global privacy, use the **no** form of the command.

snmp-server globalEnforcePriv

no snmp-server globalEnforcePriv

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Configuration mode.

Command History

Release	Modification
2.1(0)	This command was introduced.

Usage Guidelines

None.

Examples

The following example enables globally enforced privacy for all SNMP users:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# snmp-server globalEnforcePriv
```

Related Commands

Command	Description
show snmp	Displays SNMP information.

snmp-server host

To specify the recipient of an SNMP notification, use the **snmp-server host** global configuration command. To remove the specified host, use the **no** form of the command.

snmp-server host *host-address* [**traps** | **informs**] [**version** {**1** | **2c** | **3** [**auth** | **noauth** | **priv**]}] *community-string* [**udp-port** *port*]

no snmp-server host *host-address* [**traps** | **informs**] [**version** {**1** | **2c** | **3** [**auth** | **noauth** | **priv**]}] *community-string* [**udp-port** *port*]

Syntax Description

host-address	Specifies the name or IP address of the host (the targeted recipient).
traps	(Optional) Sends SNMP traps to this host.
informs	(Optional) Sends SNMP informs to this host.
version	(Optional) Specifies the version of the Simple Network Management Protocol (SNMP) used to send the traps. Version 3 is the most secure model, as it allows packet encryption with the **priv** keyword.
1	SNMPv1 (default). This option is not available with informs.
2c	SNMPv2C.
3	SNMPv3 has three optional keywords (**auth**, **no auth** (default), or **priv**).
auth	(Optional) Enables Message Digest 5 (MD5) and Secure Hash Algorithm (SHA) packet authentication
noauth	(Optional) Specifies the noAuthNoPriv security level.
priv	(Optional) Enables Data Encryption Standard (DES) packet encryption (privacy).
community-string	Sends a password-like community string with the notification operation.
udp-port *port*	(Optional) Specifies the port UDP port of the host to use. The default is 162.

Defaults

Sends SNMP traps.

Command Modes

Configuration mode.

Command History

Release	Modification
1.0(3)	This command was introduced.

Usage Guidelines

If you use the version keyword, one of the following must be specified: **1**, **2c**, or **3**.

Examples

The following example specify the recipient of an SNMP notification:

```
switch# config terminal
```

```
switch(config)# snmp-server host 10.1.1.1 traps version 2c abcddsfsf udp-port 500
```

Related Commands

Command	Description
show snmp	Displays SNMP information.
snmp-server host	Configures SNMP server host information.

snmp-server location

To modify system location, use **snmp-server location** command. To remove the SNMP server location, use the **no** form of the command.

snmp-server location

no snmp-server location

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example sets the SNMP server community string:

```
switch# config t
switch(config)# snmp-server location line
switch(config)#
```

Related Commands

Command	Description
show snmp	Displays SNMP information.

snmp-server tcp-session

To enable one time authentication for SNMP over a TCP session, use the **snmp-server tcp-session** command in configuration mode. To disable one time authentication for SNMP over a TCP session, use the **no** form of the command.

snmp-server tcp-session [**auth**]

no snmp-server tcp-session [**auth**]

Syntax Description

auth	(Optional) Enables one time authentication for SNMP over a TCP session.

Command Default

One time authentication for SNMP over a TCP session is on.

Command Modes

Configuration mode.

Command History

Release	Modification
3.1	This command was introduced.

Usage Guidelines

None.

Examples

The following example enables one time authentication for SNMP over a TCP session:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# snmp-server tcp-session auth
```

Related Commands

Command	Description
show snmp	Displays SNMP information.

snmp-server user

To configure SNMP user information, use the **snmp-server user** command in configuration mode. To disable the configuration or to revert to factory defaults, use the **no** form of the command.

snmp-server user *username* [*group-name*] [**auth** {**md5** | **sha**} *password* [**priv** [*password* [**auto** | **localizedkey** [**auto**]]] | **aes-128** *password* [**auto** | **localizedkey** [**auto**] | **auto** | **localizedkey** [**auto**]]] | [**enforcePriv**]

no snmp-server user *name* [*group-name* | **auth** {**md5** | **sha**} *password* [**priv** [*password* [**auto** | **localizedkey** [**auto**]]] | **aes-128** *password* [**auto** | **localizedkey** [**auto**] | **auto** | **localizedkey** [**auto**]]] | [**enforcePriv**]

Syntax Description

username	Specifies the user name. Maximum length is 32 characters.
group-name	(Optional) Specifies role group to which the user belongs. Maximum length is 32 characters.
auth	(Optional) Sets authentication parameters for the user.
md5	Sets HMAC MD5 algorithm for authentication.
sha	Uses HMAC SHA algorithm for authentication.
password	(Optional) Specifies user password. Maximum length is 64 characters.
priv	(Optional) Sets encryption parameters for the user.
auto	(Optional) Specifies whether the user is autocreated (volatile).
localizedkey	(Optional) Sets passwords in localized key format.
aes-128	(Optional) Sets 128-byte AES algorithm for privacy.
enforcePriv	(Optional) Enforces privacy for the specified user.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
4.2(1)	This command has been deprecated.
4.1(1b)	Added **engineID** options.
1.0(2)	This command was introduced.
1.0(3)	Added the **localizedkey** option.
2.0(1b)	Added the **auto** and **aes128** options.
3.1(2)	Added the **enforcePriv** keyword.

Usage Guidelines

The localized keys are not portable across devices as they contain information on the engine ID of the device. If a configuration file is copied into the device, the passwords may not be set correctly if the configuration file was generated at a different device. We recommend that passwords be explicitly configured to the desired passwords after copying the configuration into the device.

SNMP Version 3 is the most secure model, as it allows packet encryption with the **priv** keyword.

To assign multiple roles to a user, perform multiple **snmp-server user** *username group-name* commands. The *group-name* argument is defined by the **role name** command.

Examples

The following example sets the user authentication and SNMP engine ID for a notification target user:

```
switch# config terminal
switch(config)# snmp-server user notifUser network-admin auth sha abcd1234 engineID
00:12:00:00:09:03:00:05:48:00:74:30
```

The following example sets the user information:

```
switch# config terminal
switch(config)# snmp-server user joe network-admin auth sha abcd1234 engineID
switch(config)# snmp-server user sam network-admin auth md5 abcdefgh
switch(config)# snmp-server user Bill network-admin auth sha abcd1234 priv abcdefgh
switch(config)# snmp-server user user1 network-admin auth md5 0xab0211gh priv 0x45abf342
localizedkey
```

Related Commands

Command	Description
role name	Configures role profiles.
show snmp	Displays SNMP information.
snmp-server host	Configures SNMP server host information.

source

To configure a switched port analyzer (SPAN) source, use the **source** command in SPAN session configuration submode. To disable this feature, use the **no** form of the command.

source {**filter vsan** *vsan-id* | **interface** {**fc** *slot/port* [**rx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **tx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **traffic-type** {**initiator** | **mgmt** | **target**}] | **fcip** *fcip-id* | **fv** *slot/dpp-number/fv-port* | **iscsi** *slot/port* [**rx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **tx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **traffic-type** {**initiator** | **mgmt** | **target**}]| **port-channel** *channel-number* [**rx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **tx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **traffic-type** {**initiator** | **mgmt** | **target**}] | **sup-fc** *number* [**rx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **tx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **traffic-type** {**initiator** | **mgmt** | **target**}]} | **vsan** *vsan-id*}

no source {**filter vsan** *vsan-id* | **interface** {**fc** *slot/port* [**rx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **tx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **traffic-type** {**initiator** | **mgmt** | **target**}] | **fcip** *fcip-id* | **fv** *slot/dpp-number/fv-port* | **iscsi** *slot/port* [**rx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **tx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **traffic-type** {**initiator** | **mgmt** | **target**}]| **port-channel** *channel-number* [**rx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **tx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **traffic-type** {**initiator** | **mgmt** | **target**}] | **sup-fc** *number* [**rx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **tx** [**traffic-type** {**initiator** | **mgmt** | **target**}] | **traffic-type** {**initiator** | **mgmt** | **target**}]} | **vsan** *vsan-id*}

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:

interface {**bay** *port* | **ext** *port*}

Syntax Description

filter	Configures SPAN session filter.
vsan *vsan-id*	Specifies the VSAN ID. The range is 1 to 4093.
interface	Specifies the interface type.
fc *slot/port*	(Optional) Specifies the Fibre Channel interface ID at a slot and port on an MDS 9000 Family switch.
fcip *fcip-id*	Specifies the FCIP interface ID. The range is 1 to 255.
fv *slot/dpp-number/fv-port*	Specifies a virtual F port (FV port) interface in the specified slot along with the data path processor (DPP) number and the FV port number.
iscsi *slot/port*	(Optional) Configures the iSCSI interface in the specified slot/port on an MDS 9000 Family switch.
bay *port*	**ext** *port*	(Optional) Configures the Fibre Channel interface on a port on a Cisco Fabric Switch for HP c-Class BladeSystem or on a Cisco Fabric Switch for IBM BladeCenter. The range is 0 to 48.
port-channel *channel-number*	Specifies the PortChannel interface ID. The range is 1 to 128.
sup-fc *number*	Specifies the inband interface, which is 0.
rx	(Optional) Specifies SPAN traffic in ingress direction.

traffic-type	(Optional) Configures the SPAN traffic type.
initiator	(Optional) Specifies initiator traffic.
mgmt	(Optional) Specifies management traffic.
target	(Optional) Specifies target traffic.
tx	(Optional) Specifies SPAN traffic in egress direction.

Defaults

Disabled.

Command Modes

SPAN session configuration submode.

Command History

Release	Modification
1.0(2)	This command was introduced.
3.1(2)	Added the **interface bay** | **ext** option.

Usage Guidelines

None.

Examples

The following example shows how to create a SPAN session, then configures the SPAN traffic at all sources in VSAN 1.

```
switch# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# span session 1
switch(config-span)# source vsan 1
```

The following example shows how to configure the SPAN source interface as PortChannel 1:

```
switch(config-span)# source interface port-channel 1
```

The following example shows how to configure the SPAN source interface as FC 9/1 with an egress filter for VSAN 1:

```
switch(config-span)# source interface fc9/1 tx filter vsan 1
```

The following example shows how to configure the SPAN source interface as FCIP 51:

```
switch(config-span)# source interface fcip 51
```

The following example shows how to configure the SPAN source interface as iSCSI interface 4/1:

```
switch(config-span)# source interface iscsi 4/1
```

The following example shows how to disable configure the SPAN source interface as FC 9/1 with an egress filter for VSAN 1:

```
switch(config-span)# no source interface fc9/1 tx filter vsan 1
```

Related Commands

Command	Description
destination interface	Configures a SPAN destination interface.
show span session	Displays specific information about a SPAN session
span session	Selects or configures the SPAN session and changes to SPAN configuration submode.
suspend	Suspends a SPAN session.
switchport	Configures the switch port mode on the Fibre Channel interface.

span max-queued-packets

To configure the SPAN max-queued-packets, use the **span max-queued-packets** command in configuration mode. To disable the SPAN drop-threshold, use the **no** form of the command.

span max-queued-packets *id*

no span max-queued-packets *id*

Syntax Description

id	Specifies the SPAN max-queued-packets threshold ID. The range is 1 to 8191.

Defaults

15.

Command Modes

Configuration mode

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

This command is supported only on a ISOLA platform.

Examples

The following example shows how to configure the SPAN max-queued-packets:

```
switch# config
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# span max-queued-packets 1
```

Related Commands

Command	Description
show span drop-counters	Displays the SPAN drop-counters.
show span max-queued-packets	Displays the SPAN max-queued-packets.

span session

To configure a SPAN session, use the **span session** command. To remove a configured SPAN feature or revert it to factory defaults, use the **no** form of the command.

span session {*session-id*}

no span session {*session-id*}

Syntax Description

session-id	Specifies the SPAN session ID. The range is 1 to 16.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure a SPAN session:

```
switch# config terminal
switch(config)# span session 1
switch(config-span)#
```

The following example shows how to delete a SPAN session:

```
switch(config)# no span session 1
```

Related Commands

Command	Description
destination interface	Configures a SPAN destination interface.
show span session	Displays specific information about a SPAN session
source	Configures a SPAN source.
span session	Selects or configures the SPAN session and changes to SPAN configuration submode.
suspend	Suspends a SPAN session.
switchport	Configures the switch port mode on the Fibre Channel interface.

span session source interface

To configure the SPAN traffic in both ingress (rx) and egress (tx) directions, use the **span session source interface** command in Configuration mode.

span session *session-id* **source interface** *interface type*

Syntax Description

session-id	Specifies the SPAN session ID.
interface type	Specifies the destination interface mapped to a Fiber Channel or FC tunnel.

Defaults

None.

Command Modes

Configuration mode

Command History

Release	Modification
1.0(x)	This command was introduced.
3.3(1a)	Enabled SPAN traffic in both ingress (rx) and egress (tx) directions for Generation 2 Fabric Switches.

Usage Guidelines

None.

Examples

The following example shows how to configure the SPAN traffic in both ingress and egress directions:

```
switch# config
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# span session 1
switch(config-span)# source interface fc 1/5 rx
switch(config-span)# source interface fc 1/5 tx
switch(config-span)# destination interface fc 1/5
```

Related Commands

Command	Description
show span session	Displays specific information about a Switched Port Analyzer (SPAN) session.

special-frame

To enable or disable special frames for the FCIP interface, use the **special-frame** command. To disable the passive mode for the FCIP interface, use the **no** form of the command.

special-frame peer-wwn *pwwn-id* [**profile-id** *profile-number*]

no special-frame peer-wwn *pwwn-id*

Syntax Description

peer-wwn *pwwn-id*	Specifies the peer WWN ID for special frames.
profile-id *profile-number*	(Optional) Specifies the peer profile ID. The range is 1 to 255.

Defaults

Disabled.

Command Modes

Interface configuration submode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

Access this command from the switch(config-if)# submode.

When a new TCP connection is established, an FCIP special frame (if enabled) makes one round trip from the FCIP profile and initiates the TCP connect operation to the FCIP profile receiving the TCP connect request and back. Use these frames to identify the FCIP link endpoints, to learn about the critical parameters shared by Fibre Channel and FCIP profile pairs involved in the FCIP link, and to perform configuration discovery.

Examples

The following example configures the special frames:

```
switch# config terminal
switch(config)# interface fcip 1
switch(config)# special-frame peer-pwwn 11:11:11:11:11:11:11:11
switch(config)# special-frame peer-pwwn 22:22:22:22:22:22:22:22 profile-id 10
```

Related Commands

Command	Description
show interface fcip	Displays an interface configuration for a specified FCIP interface.

ssh

To initiate a Secure Shell (SSH) session, use the **ssh** command in EXEC mode.

ssh {*hostname* | *userid*@*hostname*}

Syntax Description

hostname	Specifies the name or IP address of the host to access.
userid @*hostname*	Specifies a user name on a host.

Defaults

The default user name is admin.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to initiate an SSH session using a host name:

```
switch# ssh host1

admin@1host1's password:
```

The following example shows how to initiate an SSH session using a host IP address:

```
switch# ssh 10.2.2.2

admin@10.1.1.1's password:
```

The following example shows how to initiate an SSH session using a user name host name:

```
switch# ssh user1@host1

user1@1host1's password:
```

Related Commands

Command	Description
show ssh key	Displays SSH key information.
ssh server enable	Enables SSH server.

ssh key

To generate an SSH key, use the **ssh key** command in configuration mode. To delete the SSH keys, use the **no** form of the command.

ssh key {**dsa** [*bits*] | **rsa** [*bits*] | **rsa1** [*bits*]} [**force**]

no ssh key

Syntax Description

dsa *bits*	Generates a DSA key. The range for the number of bits is 768 to 1856.
rsa *bits*	Generates an RSA key. The range for the number of bits is 768 to 2048.
rsa1 *bits*	Generates an RSA1 key. The range for the number of bits is 768 to 2048.
force	(Optional) Forces the generation of keys even when previous keys are present.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to generate an SSH key:

```
switch# config terminal
switch(config)# ssh key rsa1 1024
generating rsa1 key.....
generated rsa1 key
switch(config)#
switch(config)# ssh key dsa 1024
generating dsa key.....
generated dsa key
switch(config)#
switch(config)# ssh key rsa 1024
generating rsa key.....
generated rsa key
switch(config)#
switch(config)# no ssh key
cleared RSA keys
switch(config)#
```

Related Commands

Command	Description
show ssh key	Displays SSH key information.
ssh server enable	Enables SSH server.

ssh server enable

To enable the SSH server, use the **ssh server enable** command in configuration mode. To disable the SSH service, use the **no** form of the command.

ssh server enable

no ssh server enable

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example enables the SSH server:

```
switch# config terminal
switch(config)# ssh server enable
updated
```

The following example disables the SSH server:

```
switch# config terminal
switch(config)# no ssh server enable
updated
```

Related Commands

Command	Description
show ssh server	Displays SSH server information.
ssh key	Generates an SSH key.

ssl

To configure Secure Sockets Layer (SSL), use the **ssl** command. Use the **no** form of this command to disable this feature.

ssl kmc

no ssl kmc

Syntax Description

kmc	Enables SSL for Key Management Center (KMC) communication.

Defaults

None.

Command Modes

Cisco SME cluster configuration mode submode.

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example enables SSL:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# ssl kmc
```

ssm upgrade delay

To configure the upgrade delay time, use the **ssm upgrade delay** command. To clear the already set upgrade value, use the **no** form of the command.

ssm upgrade delay *string*

no ssm upgrade delay *string*

Syntax Description

string	Specifies the delayed time in seconds. The range is from 1 to 600.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

During the upgrade, the second SSM and MSM and the subsequent SSMs and MSMs would be delayed by the configured delay value.

Examples

The following example shows how to configure the SSM upgrade delay time:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# ssm upgrade delay 500
switch(config)#
```

Related Commands

Command	Description
ssm enable feature	Enables the SCSI flow feature on the SSM.

ssm enable feature

To enable a feature on the Storage Services Module (SSM), use the **ssm enable feature** command. To disable the feature on the module, use the **no** form of the command.

ssm enable feature {**invista** {**bootflash:** *uri* | **force module** *slot-number* | **modflash:** *uri* | **module** *slot-number* | **slot0:** *uri*} | **nasb** {**force module** *slot-number* | **interface fc** *slot/port-port* } | **module** *slot-number*} | **nsp** {**bootflash:** *uri* | **force module** *slot-number* | **modflash:** *uri* | **module** *slot-number* | **slot0:** *uri*} | **santap** {**force module** *slot-number* | **interface fc** *slot/port-port* | **module** *slot-number*} | **scsi-flow** {**force module** *slot-number* | **interface fc** *slot/port-port* | **module** *slot-number*}}

no ssm enable feature {**invista** {**bootflash:** *uri* | **force module** *slot-number* | **modflash:** *uri* | **module** *slot-number* | **slot0:** *uri*} | **nasb** {**force module** *slot-number* | **interface fc** *slot/port-port*} | **module** *slot-number*} | **nsp** {**bootflash:** *uri* | **force module** *slot-number* | **modflash:** *uri* | **module** *slot-number* | **slot0:** *uri*} | **santap** {**force module** *slot-number* | **interface fc** *slot/port-port* | **module** *slot-number*} | **scsi-flow** {**force module** *slot-number* | **interface fc** *slot/port-port* | **module** *slot-number*}}

Syntax Description

invista	Enables the Invista feature on the SSM.
bootflash: *uri*	Specifies the source location for internal bootflash with image name.
force	Forces an immediate configuration change.
module *slot-number*	Specifies the slot number of the SSM.
modflash *uri*	Specifies the source location for internal modflash with image name.
slot0:*uri*	Specifies the source location for the CompactFlash memory or PC card with image name.
nasb	Enables the Network-Accelerated Serverless Backup (NASB) feature on the SSM.
interface fc *slot/port*	Specifies the interface to be configured.
fc *slot/port*	Configures the Fibre Channel interface.
fc *slot/port-port*	Configures the Fibre Channel interface range of ports. See the Usage Guidelines for this command for a list of interface range restrictions.
nsp	Enables the Network Storage Processor (NSP) feature on the SSM.
santap	Enables the SANTap feature on the SSM.
scsi-flow	Enables the SCSI flow feature on the SSM.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
2.0(2b)	This command was introduced.
2.1(1a)	Added **emcsr, nasb,** and **santap** options.
3.0(1)	Changed the name of the **emcsr** option to **invista**.

Usage Guidelines

Use the **ssm enable feature scsi-flow** command to enable the SCSI flow feature on an SSM.

The features **invista** and **nsp** can only be provisioned on a module basis. The features **nasb, santap**, and **scsi-flow** can be provisioned on either a module or a range of interfaces.

The image must be specified when configuring the **invista** and **nsp** features.

Caution The **force** option is only applicable when unprovisioning (using the **no** parameter). Using the **force** parameter without the **no** keyword causes the SSM to reload.

For SAN-OS Release 2.1 and later NX-OS Release 4.1 images, intelligent services can be configured on a range of interfaces with the following restrictions:

- The minimum range is four interfaces.
- The range of interfaces must be specified in multiples of four interfaces. For example, 4, 8, 12, 16, 20, 24, 28, 32.
- Ranges start at the following specific ports: 1, 5, 9, 13, 17, 21, 25, and 29.

Examples

The following example enables the Invista feature on the SSM in slot 4:

```
switch# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config) ssm enable feature invista module 4
```

The following example enables the Invista feature using the bootflash image name:

```
switch(config) ssm enable feature invista bootflash:image_name
```

The following example enables the Invista feature using the image name found on the PC card flash module in slot0:

```
switch(config) ssm enable feature invista slot0:image_name
```

The following example disables the Invista feature on the SSM in slot 4:

```
switch(config) no ssm enable feature invista force module 4
```

The following example enables the NASB feature on the SSM in slot 4:

```
switch(config) ssm enable feature nasb module 4
```

The following example enables the NASB feature on the specific Fibre Channel interface range 1 to 4:

```
switch(config) ssm enable feature nasb interface fc 4/1-4
```

The following example enables the NSP feature on the SSM in slot 4:

```
switch(config) ssm enable feature nsp module 4
```

The following example enables the SANTap feature on the SSM in slot 4:

```
switch(config) ssm enable feature santap module 4
```

The following example enables the SCSI flow feature on the SSM in slot 4:

```
switch(config) ssm enable feature scsi-flow module 4
```

Related Commands

Command	Description
scsi-flow distribute	Configures the SCSI flow services.
show scsi-flow	Displays SCSI flow configuration and status.

static (iSCSI initiator configuration and iSLB initiator configuration)

To assign persistent WWNs to an iSCSI initiator or iSLB initiator, use the **static** command in iSCSI initiator configuration submode or iSLB initiator configuration submode. To disable this feature, use the **no** form of the command.

static {**nwwn** | **pwwn**} {*wwn-id* | **system-assign**}

no static {**nwwn** | **pwwn**} {*wwn-id* | **system-assign**}

Syntax Description

nwwn	Configures the initiator node WWN hex value.
pwwn	Configures the peer WWN for special frames.
wwn-id	Specifies the pWWN or nWWN ID.
system-assign	Generates the pWWN or nWWN value automatically.

Defaults

None.

Command Modes

iSCSI initiator configuration submode.

iSLB initiator configuration submode.

Command History

Release	Modification
1.3(2)	This command was introduced.
3.0(1)	Added iSLB initiator configuration submode.

Usage Guidelines

We recommend using the **system-assign** option. If you manually assign a WWN, you must ensure its uniqueness. You should not use any previously-assigned WWN.

If you use **system-assign** option to configure WWNs for an iSLB initiator, when the configuration is saved to an ASCII file, the system-assigned WWNs are also saved. If you subsequently perform a write erase, you must manually delete the WWN configuration from the ASCII file. Failing to do so can cause duplicate WWN assignments if the ASCII configuration file is reapplied on the switch.

Examples

The following example uses the switch WWN pool to allocate the nWWN for this iSCSI initiator and to keep it persistent:

```
switch# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# iscsi initiator name iqn.1987-02.com.cisco.initiator
switch(config-iscsi-init)# static nWWN system-assign
```

The following example uses the switch WWN pool to allocate two pWWNs for this iSCSI initiator and to keep it persistent:

```
switch(config-iscsi-init)# static pWWN system-assign 2
```

The following example shows a system-assigned pWWN for an iSLB initiator:

```
switch# config t
switch(config)# islb initiator ip-address 209.165.200.226
switch(config-islb-init)# static pwwn system-assign 4
```

The following example removes the system-assigned pWWN for the iSLB initiator:

```
switch (config-islb-init)# no static pwwn system-assign 4
```

Related Commands

Command	Description
iscsi initiator name	Assigns an iSCSI name and changes to iSCSI initiator configuration submode.
islb initiator	Assigns an iSLB name and IP address to the iSLB initiator and enters iSLB initiator configuration submode.
show iscsi initiator	Displays information about configured iSCSI initiators.
show iscsi initiator configured	Displays iSCSI initiator information for the configured iSCSI initiator.
show iscsi initiator detail	Displays detailed iSCSI initiator information.
show iscsi initiator summary	Displays iSCSI initiator summary information.
show islb initiator	Displays iSLB initiator information.
show islb initiator configured	Displays iSLB initiator information for the specified configured initiator.
show islb initiator detail	Displays detailed iSLB initiator information.
show islb initiator summary	Displays iSLB initiator summary information.

stop

To stop SCSI commands in progress on a SAN tuner extension N port, use the **stop** command.

stop {**all** | **command-id** *cmd-id*}

Syntax Description

all	Stops all SCSI commands.
command-id *cmd-id*	Stops a specific SCSI command identified by the command number. The range is 0 to 2147483647.

Defaults

None.

Command Modes

SAN extension N port configuration submode.

Command History

Release	Modification
2.0(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example stops all SCSI command on a SAN extension tuner N port:

```
switch# san-ext-tuner
switch(san-ext)# nWWN 10:00:00:00:00:00:00:00
switch(san-ext)# nport pwwn 12:00:00:00:00:00:00:56 vsan 13 interface gigabitethernet
1/2
switch(san-ext-nport)# stop all
```

The following example stops a specific SCSI command on a SAN extension tuner N port:

```
switch# san-ext-tuner
switch(san-ext)# nWWN 10:00:00:00:00:00:00:00
switch(san-ext)# nport pwwn 12:00:00:00:00:00:00:56 vsan 13 interface gigabitethernet
1/2
switch(san-ext-nport)# stop command-id 100
```

Related Commands

Command	Description
nport pwwn	Configures a SAN extension tuner N port.
read command-id	Configures a SCSI read command for a SAN extension tuner N port.
san-ext-tuner	Enables the SAN extension tuner feature.
show san-ext-tuner	Displays SAN extension tuner information.
write command-id	Configures a SCSI write command for a SAN extension tuner N port.

streetaddress

To configure the street address with the Call Home function, use the **streetaddress** command in Call Home configuration submode. To disable this feature, use the **no** form of the command.

streetaddress {*street-address*}

no streetaddress {*street-address*}

Syntax Description

street-address	Specifies the customer's street address where the equipment is located. Allows up to 256 alphanumeric characters in free format for the street number, city, state, and zip (combined).

Defaults

None.

Command Modes

Call Home configuration submode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure the street address in the Call Home configuration:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# callhome
switch(config-callhome)# streetaddress 1234 Picaboo Street, AnyCity, AnyState, 12345
```

Related Commands

Command	Description
callhome	Configures the Call Home function.
callhome test	Sends a dummy test message to the configured destination(s).
show callhome	Displays configured Call Home information.

suspend

To suspend a switched port analyzer (SPAN) session, use the **suspend** command in SPAN session configuration submode. To disable the suspension, use the **no** form of the command.

suspend

no suspend

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled.

Command Modes

SPAN session configuration submode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to suspend a SPAN session:

```
switch# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# span session 1
switch(config-span)# suspend
switch(config-span)# do show span session 1
Session 1 (admin suspended)
   Destination is not configured
   No session filters configured
   Ingress (rx) sources are
     fc3/13,
   Egress (tx) sources are
     fc3/13,

switch(config-span)#
```

The following example shows how to disable the suspension of the SPAN session.

```
switch(config-span)# no suspend
```

Related Commands

Command	Description
destination interface	Configures a SPAN destination interface.
show span session	Displays specific information about a SPAN session.

Command	Description
source	Configures a SPAN source.
span session	Selects or configures the SPAN session and changes to SPAN configuration submode.
switchport	Configures the switch port mode on the Fibre Channel interface.

switch-priority

To configure the switch priority with the Call Home function, use the **switch-priority** command in Call Home configuration submode. To disable this feature, use the **no** form of the command.

switch-priority {*priority-value*}

no switch-priority {*priority-value*}

Syntax Description

priority-value	Specifies the priority level. 0 is the highest priority and 7 the lowest.

Defaults

None.

Command Modes

Call Home configuration submode.

Command History

Release	Modification
4.1(1b)	Added usage guidelines.
1.0(2)	This command was introduced.

Usage Guidelines

The Call Home switch priority is specific to each switch in the fabric. It is set by the switch administrator to guide the operations personnel who receive the Call Home messages as to which messages should be serviced first. For example, the switch priority of a trading floor switch may be set higher than that of a switch in a tape backup network because the trading floor users may not be able to tolerate as much service interruption as the backup network.

Examples

The following example shows how to configure the switch priority in the Call Home configuration:

```
switch# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# callhome
switch(config-callhome)# switch-priority 0
```

Related Commands

Command	Description
callhome	Configures the Call Home function.
callhome test	Sends a dummy test message to the configured destination(s).
show callhome	Displays configured Call Home information.

switch-wwn

To configure a switch WWN in an autonomous fabric ID (AFID) database, use the **switch-wwn** command in AFID database configuration submode. To disable this feature, use the **no** form of this command.

switch-wwn *wwn-id* {**autonomous-fabric-id** *fabric-id* **vsan-ranges** *vsan-range* | **default-autonomous-fabric-id** *fabric-id* **vsan-ranges** *vsan-range*}

no switch-wwn *wwn-id* {**autonomous-fabric-id** *fabric-id* **vsan-ranges** *vsan-range* | **default-autonomous-fabric-id** *fabric-id* **vsan-ranges** *vsan-range*}

Syntax Description

wwn-id	Specifies the port WWN, with the format *hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*.
autonomous-fabric-id *fabric-id*	Specifies the fabric ID for the IVR topology.
vsan-ranges *vsan-range*	Specifies the IVR VSANs or range of VSANs. The range of values for a VSAN ID is 1 to 4093.
default-autonomous-fabric-id *fabric-id*	Specifies the default fabric ID for the IVR topology.

Defaults

Disabled.

Command Modes

AFID database configuration submode.

Command History

Release	Modification
2.1(1a)	This command was introduced.

Usage Guidelines

Using the **default-autonomous-fabric-id** keyword configures the default AFID for all VSANs not explicitly associated with an AFID.

Examples

The following example adds a switch WWN, an AFID, and a range of VSANs to the AFID database:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# ivr vsan-topology auto
switch(config)# autonomous-fabric-id database
switch(config-afid-db)# switch-wwn 28:1d:00:05:30:00:06:ea autonomous-fabric-id 14
vsan-ranges 1-4
```

The following example adds a switch WWN and the default AFID to the AFID database:

```
switch(config-afid-db)# switch-wwn 28:1d:00:05:30:00:06:ea default-autonomous-fabric-id
16
```

Related Commands

Command	Description
autonomous-fabric-id-database	Enters AFID database configuration submode.
show autonomous-fabric-id-database	Displays the contents of the AFID database.

switchname

To change the name of the switch, use the **switchname** command in configuration mode. To revert the switch name to the default name, use the **no** form of the command.

switchname {*name*}

no switchname {*name*}

Syntax Description

name	Specifies a switch name. Maximum length is 32 characters.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example changes the name of the switch to myswitch1:

```
switch# config terminal
switch(config)# switchname myswitch1
```

The following example changes the name of the switch to the default:

```
myswitch1(config)# no switchname
```

Related Commands

Command	Description
snmp-server	Sets the contact information, switch location, and switch name within the limit of 20 characters (without spaces).

switchport

To configure a switch port parameter on a Fibre Channel, Gigabit Ethernet, or management interface, use the **switchport** command in interface configuration submode. To discard the configuration, use the **no** form of the command.

Fibre Channel Interface

switchport {**beacon** | **description** *text* | **encap eisl** | **fcbbscn** | **fcrxbbcredit** {*credit* [**mode** {**E** | **Fx**}] | **default** | **extended** *credit* | **performance-buffers** {*buffers* | **default**}} | **fcrxbufsize** *size* | **ignore** {**bit-errors**} | **mode** {**E** | **F** | **FL** | **Fx** | **NP** | **SD** | **ST** | **TL** | **auto**} | **owner** {*owner*} | **rate-mode** {**dedicated** | **shared**} | **speed** {**1000** | **2000** | **4000** | **auto** [**max 2000**]} | **trunk** {**allowed vsan** {[**add**] *vsan-id* | **all**} | **mode** {**auto** | **off** | **on**}}}

no switchport {**beacon** | **description** *text* | **encap eisl** | **fcbbscn** | **fcrxbbcredit** {*credit* [**mode** {**E** | **Fx**}] | **default** | **extended** *credit* | **performance-buffers** {*buffers* | **default**}} | **fcrxbufsize** *size* | **ignore** {**bit-errors**} | **mode** {**E** | **F** | **FL** | **Fx** | **NP** | **SD** | **ST** | **TL** | **auto**} | **owner** {*owner*}| **rate-mode** {**dedicated** | **shared**} | **speed** {**1000** | **2000** | **4000** | **auto** [**max 2000**]} | **trunk** {**allowed vsan** {[**add**] *vsan-id* | **all**} | **mode** {**auto** | **off** | **on**}}}

Gigabit Ethernet Interface

switchport {**beacon** |**description** *text* |**mtu**}

no switchport {**auto-negotiate** | **beacon** | **description** *text* | **mtu** | **promiscuous-mode**}

Management Interface

switchport {**description** *text* | **duplex** {**auto** | **full** | **half**} | **speed** {**10** | **100** | **1000**}}

no switchport {**description** *text* | **duplex** | **speed**}

Syntax Description

beacon	Enables the beacon for the interface.
description *text*	Specifies the interface description. Maximum length is 80 characters.
encap eisl	Configures extended ISL (EISL) encapsulation for the interface.
fcbbscn	Enables or disables buffer-to-buffer state change notification.
fcrxbbcredit	Configures receive BB_credit for the port.
credit	Specifies receive BB_credit. The range is 1 to 255
mode	(Optional) Configures receive BB_credit for the specific port mode.
E	Configures receive BB_credit for E or TE port mode.
Fx	Configures receive BB_credit for F or FL port mode.
default	Configures default receive BB_credits depending on the port mode and capabilities.
extended *credit*	Specifies extended receive BB_credits. The range is 256 to 4095.
performance-buffers *buffers* | default	Specifies receive BB_credit performance buffers. The range is 1 to 145. The default value is determined by a built-in algorithm.
fcrxbufsize *size*	Specifies receive data field size for the interface. The range is 256 to 2112 bytes.
mode	Configures the port mode.

E	Configures E port mode.
F	Configures F port mode.
FL	Configures FL port mode.
Fx	Configures Fx port mode.
NP	Configures NP port mode for N-port virtualizer only.
SD	Configures SD port mode.
ST	Configures ST port mode.
TL	Configures TL port mode.
auto	Configures autosense mode.
owner	Configures the owner string on the port.
owner	Specifies the owner. The maximum length of the string is 80 characters.
rate-mode	Configures the rate mode for an interface.
dedicated	Specifies dedicated bandwidth for the port.
shared	Specifies shared bandwidth for the port.
speed	Configures the port speed.
1000	Configures 1000-Mbps speed.
2000	Configures 2000-Mbps speed.
4000	Configures 4000-Mbps speed.
auto	Configures autosense speed.
max 2000	(Optional) Configures 2-Gbps as the maximum bandwidth reserved in auto mode for 24-port and 48-port 4-Gbps switching module interfaces.
trunk	Configures trunking parameters on the interface.
allowed	Specifies the allowed list for interface(s).
vsan	Configures the VSAN range.
add	(optional) Adds the VSAN ID to the range of allowed VSAN list
vsan-id	Specifies the VSAN ID. The range is 1 to 4093.
all	Adds all the VSANs to allowed VSAN list.
off	Disables the trunking mode.
on	Enables the trunking mode.
mtu	Configures the maximum transmission unit (MTU) for the port.
off	Disables promiscuous mode.
on	Enables promiscuous mode.
duplex	Configures the port duplex mode.
auto	Configures auto negotiate duplex mode.
full	Specifies full duplex mode
half	Configures half duplex mode.
10	Configures 10-Mbps port speed.
100	Configures 100-Mbps port speed.
1000	Configures 1000-Mbps port speed.

Defaults

The beacon is disabled.

The EISL encapsulation is disabled.

The default receive data buffer size is 2112 bytes.

The port mode is **auto**.

The speed is **auto**.

The maximum auto speed is **2000**.

The trunk mode is **on**.

The rate mode is **shared**.

Command Modes

Interface configuration submode.

Command History

Release	Modification
NX-OS 4.1(3)	Added the **F** and **NP** port mode.
1.0(2)	This command was introduced.
2.0(1b)	Added the **extended** option to the **fcrxbbcredit** keyword.
3.0(1)	• Added the **fcbbscn** option. • Added the **ST** option to the **mode** keyword. • Added the **4000** option to the **speed** keyword. • Added the **auto max 2000** option to the **speed** keyword. • Added the **rate-mode** keyword. • Added the Gigabit Ethernet interface syntax. • Added the management interface syntax.

Usage Guidelines

You can specify a range of interfaces by issuing a command with the following example format:

interface*space***fc1/1***space*-*space***5***space*,*space***fc2/5***space*-*space***7**

Tip The **shutdown** or **no shutdown** command for the FCIP or iSCSI interfaces is automatically issued when you change the MTU size—you do not need to explicitly issue this command.

You must perform the **fcrxbbcredit extended enable** command in configuration mode to use the **switchport fcrxbbcredit extended** command in interface configuration submode to enable extended BB_credits on a Fibre Channel interface.

The port speed on an interface, combined with the rate mode, determines the amount of shared resources available to the ports in the port group. Especially in the case of dedicated rate mode, the port group resources are reserved even though the bandwidth is not used. For example, if an interface is configured for autosensing (**auto**), then 4 Gbps of bandwidth is reserved even though the maximum operating speed is 2 Gbps. For the same interface, if autosensing with a maximum speed of 2 Gbps (**auto max 2000**) is configured, then only 2 Gbps of bandwidth is reserved and the unused 2 Gbps is shared with the other interface in the port group.

Note The 4-port 10-Gbps switching module only supports 10-Gbps traffic.

Table 21-1 lists the default configurations, credits, and buffers for switching modules.

Table 21-1 Default Configurations, Credits, and Buffers

Switching Module	Speed	Port Mode	Rate Mode	Credits Min/Max/Default
12 port	Auto[1]	Auto[2]	Dedicated	2/250/250
24 port	Auto[1]	Fx	Shared	1/16/16
			Dedicated	1/250/16
		Auto	Dedicated	2/250/250
48 port	Auto[1]	Fx	Shared	1/16/16
			Dedicated	1/250/16
		Auto	Dedicated	2/250/125
4 port	Auto[3]	Auto[2]	Auto	2/250/250

1. Auto speed negotiates to 1-, 2-, or 4-Gbps.
2. Auto port mode can operate as an E, TE, or Fx port.
3. Auto speed for a 4-port module negotiates to 10-Gbps.

When configuring port modes, observe the following guidelines:

- Auto port mode and E port mode cannot be configured in shared rate mode.
- The 4-port 10-Gbps module does not support FL port mode.
- Generation 2 modules do not support TL port mode.
- Shared to dedicated ports should be configured in this order: speed, rate mode, port mode, credit.
- Dedicated to shared ports should be configured in this order: credit, port mode, rate mode, speed.

When configuring PortChannels, observe the following guidelines:

- When an interface is out-of-service, it cannot be part of a PortChannel.
- The 24-port module and the 48-port module support making ports out-of-service. In a shared resource configuration, an out-of-service port reverts to its default values when it comes back into service.
- The maximum number of PortChannels for Generation-2 modules is 256.
- The maximum number of PortChannels for a mixture of Generation-1 and Generation-2 modules is 128.
- The number of PortChannels is independent of the type of supervisor module.
- When adding a PortChannel to a configuration that uses both Generation-1 and Generation-2 modules, configure the PortChannel and Generation-2 interface speed to **auto max 2000**.
- When using the force option to add a PortChannel to a configuration that uses both Generation-1 and Generation-2 modules, follow these guidelines:
  - Configure the PortChannel interface speed to **auto max 2000**, or add the Generation-1 interfaces followed by the Generation-2 interfaces.

- Generation-1 interfaces do not support the **auto max 2000** speed.
- The force addition can fail for a Generation-2 interface if resources are unavailable.

Examples

The following example shows how to configure NP port mode:

```
switch# config t
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# interface fc 1/1
switch(config-if)# switchport mode NP
fc1/1: (error) port already in a port-channel, no config allowed
switch(config-if)#
```

The following example configures switch port parameters for a Fibre Channel interface:

```
switch# config terminal
switch(config)# interface fc 1/23
switch(config-if)# switchport description techdocsSample
switch(config-if)# switchport mode E
switch(config-if)# switchport trunk mode auto
switch(config-if)# switchport trunk allowed vsan all
switch(config-if)# switchport trunk allowed vsan 3
switch(config-if)# switchport trunk allowed vsan add 2
switch(config-if)# switchport encap eisl
switch(config-if)# switchport fcrxbbcredit performance-buffers 45
switch(config-if)# switchport proxy-initiator nWWN 11:11:11:11:11:11:11:11 pwwn
22:22:22:22:22:22:22:22
switch(config-if)# no switchport proxy-initiator nWWN 11:11:11:11:11:11:11:11 pwwn
22:22:22:22:22:22:22:22
switch(config-if)# switchport fcrxbbcredit extended 2000
```

The following example configures the port speed of a Fibre Channel interface and enables autosensing on the interface:

```
switch# config terminal
switch(config)# interface fc 1/1
switch(config-if)# switchport speed 4000
switch(config-if)# switchport speed auto
```

The following example reserves dedicated bandwidth for the interface:

```
switch(config-if)# switchport rate-mode dedicated
```

The following example reserves shared (default) bandwidth for the interface:

```
switch(config-if)# switchport rate-mode shared
```

Related Commands

Command	Description
fcrxbbcredit extended enable	Enables extended BB_credits on the switch.
show interface	Displays an interface configuration for a specified interface.

switchport auto-negotiate

To configure auto-negotiation on Gigabit Ethernet interfaces, use the **switchport auto-negotiate** command in configuration mode. Use the **no** form of the command to delete the configured switch port information.

switchport auto-negotiate

no switchport auto-negotiate

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled.

Command Modes

Interface configuration submode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

You can configure the **auto-negotiate** option for a specified Gigabit Ethernet interface. By default, the port is configured to auto-negotiate. By configuring auto-negotiation, the port automatically detects the speed or pause method, and duplex of incoming signals and synchronizes with them.

Access this command from the switch(config-if)# submode for Gigabit Ethernet interfaces.

Examples

The following example configures auto-negotiation on a Gigabit Ethernet interface:

```
switch# config t
switch(config)# interface gigabitethernet 8/1
switch(config-if)# switchport auto-negotiate
```

The following example disable auto-negotiation on a Gigabit Ethernet interface:

```
switch(config-if)# no switchport auto-negotiate
```

Related Commands

Command	Description
show interface gigabitethernet	Displays an interface configuration for a specified Gigabit Ethernet interface.

switchport ignore bit-errors

To prevent the detection of bit error threshold events from disabling the interface on Fibre Channel interfaces, use the **switchport ignore bit-errors** command. To revert to the default, use the **no** form of the command.

switchport ignore bit-errors

no switchport ignore bit-errors

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Interface configuration submode.

Command History

Release	Modification
2.1(1a)	This command was introduced.

Usage Guidelines

The bit error rate threshold is used by the switch to detect an increased error rate before performance degradation seriously affects traffic.

Bit errors can occur for the following reasons:

- Faulty or bad cable
- Faulty or bad GBIC or SFP
- GBIC or SFP is specified to operate at 1 Gbps but is used at 2 Gbps
- Short haul cable is used for long haul or long haul cable is used for short haul
- Momentary sync loss
- Loose cable connection at one or both ends
- Improper GBIC or SFP connection at one or both ends

A bit error rate threshold is detected when 15 error bursts occur in a 5-minute period. By default, the switch disables the interface when the threshold is reached. You can issue a **shutdown/no shutdown** command sequence to reenable the interface.

Note Regardless of the setting of the **switchport ignore bit-errors** command, the switch generates a syslog message when bit error threshold events are detected.

Examples

The following example shows how to prevent the detection of bit error events from disabling the interface:

```
switch# config t
switch(config)# interface fc1/1
switch(config-if)# switchport ignore bit-errors
```

The following example shows how to allow the detection of bit error events from disabling the interface:

```
switch# config t
switch(config)# interface fc1/1
switch(config-if)# no switchport ignore bit-errors
```

Related Commands

Command	Description
show interface	Displays interface information.

switchport ingress-rate

To configure the port rate limit for a specified interface, use the **switchport ingress-rate** command in interface configuration mode. Use the **no** form of the command to delete the configured switch port information.

switchport ingress-rate *limit*

no switchport ingress-rate *limit*

Syntax Description

limit	Specifies the ingress rate limit as a percentage. The range is 1 to 100.

Defaults

Disabled.

Command Modes

Interface configuration submode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

Access this command from the switch(config-if)# submode. This command is only available if the following conditions are true:

- The QoS feature is enabled using the **qos enable** command.
- The command is issued in a Cisco MDS 9100 series switch.

Examples

The following example configures the ingress rate limit on a Fibre Channel interface:

```
switch# config terminal
switch(config)# interface fc 2/5
switch(config-if)# switchport ingress-rate 5
```

Related Commands

Command	Description
show interface fc	Displays an interface configuration for a specified Fibre Channel interface.

switchport initiator id

To configure the iSCSI initiator ID mode, use the **switchport initiator id** command in interface configuration submode. To delete the iSCSI inistiator ID mode, use the **no** form of the command.

switchport initiator id {*ip-address* | *name*}

no switchport initiator id {*ip-address* | *name*}

Syntax Description

ip-address	Identifies initiators using the IP address.
name	Identifies initiators using the specified name.

Defaults

The iSCSI initiator ID mode is disabled.

Command Modes

Interface configuration submode under the **iscsi interface x/x** command.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example configures the iSCSI initiator ID mode for an iSCSI interface:

```
switch# config terminal
switch(config)# interface iscsi 2/5
switch(config-if)# switchport initiator id ip-address
switch(config-if)# switchport initiator name
```

Related Commands

Command	Description
show interface iscsi	Displays an interface configuration for a specified iSCSI interface.

switchport owner

To configure the owner string on the port, use the **switchport owner** command. To disable this feature, use the **no** form of the command.

switchport owner [*owner*]

no switchport owner

Syntax Description

owner	(Optional) Specifies the owner. The maximum length of the string is 80 characters.

Defaults

None.

Command Modes

Interface Configuration mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure the owner string on the port:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch (config)# interface fc1/1
Switch (config-if)# switchport owner used_by_fc_admin
switch(config-if)#
```

The following example shows how to remove the owner string from the port:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch (config)# interface fc1/1
Switch (config-if)# no switchport owner
```

Related Commands

Command	Description
show interface	Displays an interface configuration for a specified interface.

switchport promiscuous-mode

To configure the promiscuous-mode in Gigabit Ethernet interfaces, use the **switchport promiscuous-mode** command in interface configuration submode. Use the **no** form of the command to delete the configured switch port information.

switchport promiscuous-mode {**off** | **on**}

no switchport promiscuous-mode

Syntax Description

off	Disables promiscuous mode.
on	Enables promiscuous mode.

Defaults

Disabled

Command Modes

Interface configuration submode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

Access this command from the switch(config-if)# submode for Gigabit Ethernet interfaces.

Examples

The following example enables promiscuous mode on a Gigabit Ethernet interface:

```
switch# config terminal
switch(config)# interface gigabitethernet 8/1
switch(config-if)# switchport promiscuous-mode on
```

The following example disables promiscuous mode on a Gigabit Ethernet interface:

```
switch(config-if)# switchport promiscuous-mode off
```

The following example disables promiscuous mode on a Gigabit Ethernet interface:

```
switch(config-if)# no switchport promiscuous-mode
```

Related Commands

Command	Description
show interface gigabitethernet	Displays an interface configuration for a specified Gigabit Ethernet interface.

switchport proxy-initiator

To configure the iSCSI proxy initiator mode on an iSCSI interface, use the **switchport proxy-initiator** command in interface configuration submode. To delete the iSCSI proxy initiator mode, use the **no** form of the command.

switchport proxy-initiator [**nwwn** *wwn* **pwwn** *wwn*]

no switchport proxy-initiator [**nwwn** *wwn* **pwwn** *wwn*]

Syntax Description

nwwn *wwn*	(Optional) Specifies the node WWN.
pwwn *wwn*	(Optional) Specifies the port WWN.

Defaults

The iSCSI proxy initiator mode is disabled.

Command Modes

Interface configuration submode under the **iscsi interface x/x** command.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

When you do not include the WWNs in the command, the IPS port dynamically assigns a pWWN and nWWN to the proxy initiator.

Caution Enabling proxy initiator mode on an iSCSI interface that is part of an iSLB VRRP group impacts load balancing on the interface.

Examples

The following example configures the iSCSI proxy initiator mode for a iSCSI interface using WWNs:

```
switch# config terminal
switch(config)# interface iscsi 2/5
switch(config-if)# switchport proxy-initiator nwwn 11:11:11:11:11:11:11:11 pwwn
22:22:22:22:22:22:22:22
```

The following example configures the iSCSI proxy initiator mode for a iSCSI interface without WWNs:

```
switch# config terminal
switch(config)# interface iscsi 2/5
switch(config-if)# switchport proxy-initiator
```

The following example deletes the iSCSI proxy initiator mode for a iSCSI interface:

```
switch(config-if)# switchport proxy-initiator
```

Related Commands

Command	Description
show interface iscsi	Displays an interface configuration for a specified iSCSI interface.

system cores

To enable copying the core and log files periodically, use the **system cores** command in configuration mode. To revert the switch to factory defaults, use the **no** form of the command.

system cores {**slot0:** | **tftp:**}

no system cores

Syntax Description

slot0	Selects the destination file system.
tftp:	Selects the destination file system.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

Create any required directory before issuing this command. If the directory specified by this command does not exist, the switch software logs a syslog message each time a copy cores is attempted.

Examples

The following example enables periodic copying core and log files:

```
switch# config terminal
switch(config)# system cores slot0:coreSample
```

The following example disables periodic copying core and log files:

```
switch(config)# no system cores
```

Related Commands

Command	Description
show system cores	Displays the currently configured scheme for copying cores.

system delayed-traps enable mode

To configure the system-delayed trap state, use the **system delayed-traps enable mode** command. To disable the system-delayed trap state, use the **no** form of the command.

system delayed-traps enable mode {**FX**}

no system delayed-traps enable mode {**FX**}

Syntax Description

FX	Enables or disables delayed traps for operationally up FX (F/FX) mode interfaces.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure the system-delayed trap state:

```
switch(config)# system delayed-traps enable mode FX
switch(config)#
```

system delayed-traps timer

To configure the system-delayed trap timeout values, use the **system delayed-traps timer** command. To disable the system-delayed trap timeout values, use the **no** form of the command.

system delayed traps-timer {*number*}

no system delayed traps-timer {*number*}

Syntax Description

number	Indicates the delayed trap timer in minutes. The range is from 1 to 60.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

System delayed traps timer is optional. If the user does not provide the timer value, default value of 4 is applied.

Examples

The following example shows how to configure system-delayed trap values:

```
switch(config)# system delayed-traps timer 30
switch(config)#
```

system default switchport

To configure port attributes, use the **system default switchport** command in configuration mode. To disable port attributes, use the **no** form of the command.

system default switchport {**shutdown** | **trunk mode** {**auto** | **off** | **on**} | **mode F**}

no system default switchport {**shutdown** | **trunk mode** {**auto** | **off** | **on**} | **mode F**}

Syntax Description

shutdown	Disables or enables switch ports by default.
trunk	Configures the trunking parameters as a default.
mode	Configures the trunking mode.
auto	Enables autosense trunking.
off	Disables trunking.
on	Enables trunking.
mode F	Sets the administrative mode of Fibre Channel ports to mode F.

Defaults

Enabled.

Command Modes

Configuration mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
3.1(3)	Added the **mode F** option.

Usage Guidelines

Attributes configured using this command are applied globally to all future switch port configurations, even if you do not individually specify them at that time.

This command changes the configuration of the following ports to administrative mode F:

- All ports that are down.
- All F ports that are up, whose operational mode is F, and whose administrative mode is not F.

This command does not affect non-F ports that are up; however, if non-F ports are down, this command changes the administrative mode of those ports.

Examples

The following example shows how to configure port shutdown:

```
switch# config terminal
switch(config)# system default switchport shutdown
```

The following example shows how to configure the trunk mode:

```
switch# config terminal
```

```
switch(config)# system default switchport trunkmode auto
```

The following example shows how to set the administrative mode of Fibre Channel ports to mode F:

```
switch# config terminal
switch(config)# system default switchport mode F
```

The following example shows how to set the administrative mode of Fibre Channel ports to the default:

```
switch# config terminal
switch(config)# no system default switchport mode F
```

Related Commands

Command	Description
show system default switchport	Displays default values for switch port attributes.
show interface brief	Displays FC port modes.

system default zone default-zone permit

To configure default values for a zone, use the **system default zone default-zone permit** command in configuration mode. To revert to the defaults, use the **no** form of the command.

system default zone default-zone permit

no system default zone default-zone permit

Syntax Description

This command has no arguments or keywords.

Defaults

No default values for zones.

Command Modes

Configuration mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

This command defines the default values for the default zone for all VSANs. The default values are used when you initially create a VSAN and it becomes active. If you do not want to use the default values, use the **zone default-zone permit vsan** command to define the operational values for the default zone.

The **system default zone default-zone permit** command should only be used in conjunction with VSANs that have not yet been created; it has no effect on existing VSANs.

Note Because VSAN 1 is the default VSAN and is always present, this command has no effect on it.

Examples

The following example sets the default zone to use the default values:

```
switch# config terminal
switch(config)# system default zone default-zone permit
```

The following example restores the default setting:

```
switch(config)# no system default zone default-zone permit
```

Related Commands

Command	Description
show system default zone	Displays default values for the default zone.
zone default-zone permit vsan	Defines whether a default zone (nodes not assigned a created zone) permits or denies access to all in the default zone.

system default zone distribute full

To configure default values for distribution to a zone set, use the **system default zone distribute full** command in configuration mode. To revert to the defaults, use the **no** form of the command.

system default zone distribute full

no system default zone distribute full

Syntax Description

This command has no arguments or keywords.

Defaults

Distribution to active zone sets only.

Command Modes

Configuration mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

This command distributes the default values for the default zone to all VSANs. The default values are used when you initially create a VSAN and it becomes active. If you do not want to use the default values, use the **zoneset distribute full vsan** command to distribute the operational values for the default zone.

The **system default zone distribute full** command should only be used in conjunction with VSANs that have not yet been created; it has no effect on existing VSANs.

Note Because VSAN 1 is the default VSAN and is always present, this command has no effect on it.

Examples

The following example distributes default values to the full zone set:

```
switch# config terminal
switch(config)# system default zone distribute full
```

The following example distributes default values to the active zone set only:

```
switch(config)# no system default zone distribute full
```

Related Commands

Command	Description
show system default zone	Displays default values for the default zone.
zoneset distribute full vsan	Distributes the operational values for the default zone to all zone sets.

system default zone gs

To configure default value for zone generic service permission, use the **system default zone gs** command in the configuration mode. To set the default value for zone generic service permission as none (deny), use the **no** form of the command.

system default zone gs {**read** | **read-write**}

no system default zone gs {**read** | **read-write**}

Syntax Description

read	Specifies the default zone generic service permission as read.
read-write	Specifies the default zone generic service permission as read-write.

Defaults

read-write.

Command Modes

Configuration mode.

Command History

Release	Modification
3. 2(1)	This command was introduced.

Usage Guidelines

Setting write only as the default value for zone generic service permission is not supported.

Examples

The following example shows how to configure the default value for zone generic service permission as read only for new VSANs:

```
switch# config terminal
switch(config)# system default zone gs read
switch(config)#
```

The following example shows how to configure the default value for zone generic service permission as read-write for new VSANs:

```
switch# config terminal
switch(config)# system default zone gs read-write
switch(config)#
```

The following example shows how to configure the default value for zone generic service permission as none (deny) for new VSANs:

```
switch# config terminal
switch(config)# no system default zone gs read-write
switch(config)#
```

Related Commands

Command	Description
show system default zone	Displays the zone specific system default value settings.

system default zone mode enhanced

To configure the zone mode default value as enhanced, use the **system default zone mode enhanced** command in the configuration mode. To configure the zone mode default value as basic, use the **no** form of the command.

system default zone mode enhanced

no system default zone mode enhanced

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

This command is used to configure the default value of zoning mode as basic or enhanced. The default value of zoning mode is used when a VSAN is newly created. If the VSAN is deleted and recreated, the value of the zoning mode will default to the value specified by the configuration.

Examples

The following example shows how to configure the zone mode default value as enhanced:

```
switch# config
switch# system default zone mode enhanced
```

The following example shows how to configure the zone mode default value as basic:

```
switch# config
switch# no system default zone mode enhanced
```

Related Commands

Command	Description
show system default zone	Displays the default value of zone mode as basic and enhanced.

system hap-reset

To configure the HA reset policy, use the **system hap-reset** command in EXEC mode. Use the **no** form of this command to disable this feature.

system hap-reset

system no hap-reset

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

You can disable the HA policy supervisor reset feature (enabled by default) for debugging and troubleshooting purposes.

Examples

The following example enables the supervisor reset HA policy:

```
switch# system hap-reset
```

system health (Configuration mode)

To configure Online Health Management System (OHMS) features for a specified interface or for the entire switch, use the **system health** command. To disable this feature, use the **no** form of the command.

system health [**failure-action** | **interface** {**fc** *slot*/*port* | **iscsi** *slot*/*port*} | **loopback** {**frame-length** {*bytes* | **auto**} | **frequency** *seconds*}]

no system health [**failure-action** | **interface** {**fc** *slot*/*port* | **iscsi** *slot*/*port*}]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:

interface {**bay** *port* | **ext** *port*}

Syntax Description

failure-action	(Optional) Prevents the NX-OS software from taking any OHMS action for the entire switch.
interface	(Optional) Configures an interface.
fc *slot*/*port*	(Optional) Specifies the Fibre Channel interface to configure by slot and port number on an MDS 9000 Family switch.
iscsi *slot*/*port*	(Optional) Specifies the iSCSI interface to configure by slot and port number on an MDS 9000 Family switch.
bay *port* | ext *port*	(Optional) Configures the Fibre Channel interface on a port on a Cisco Fabric Switch for HP c-Class BladeSystem or on a Cisco Fabric Switch for IBM BladeCenter. The range is 0 to 48.
loopback	(Optional) Configures the OHMS loopback test.
frame-length *bytes*	(Optional) Specifies the frame-length in bytes ranging from 0 to 128 bytes for the loopback test.
auto	(Optional) Configures the frame-length to auto for the loopback test.
frequency *seconds*	(Optional) Specifies the loopback frequency in seconds ranging from 5 seconds (default) to 255 seconds.

Defaults

Enabled.

Frame-length is auto-size, which could range from 0 to 128.

Command Modes

Configuration mode.

Command History

Release	Modification
1.3(4)	This command was introduced.
3.0(1)	Added the **frame-length** and **auto** options to the **loopback** keyword.
3.1(2)	Added the **interface bay** | **ext** option.

Usage Guidelines

If you do not configure the loopback frequency value, the default frequency of 5 seconds is used for all modules in the switch.

Note The **no** form of the command is not supported for the **frame-length**, **auto**, and **frequency** options.

Examples

The following example disables OHMS in this switch:

```
switch# config terminal
switch(config)# no system health
System Health is disabled.
```

The following example enables (default) OHMS in this switch:

```
switch(config)# system health
System Health is enabled.
```

The following example enables OHMS in this interface:

```
switch(config)# no system health interface fc8/1
System health for interface fc8/13 is enabled.
```

The following example disables OHMS in this interface:

```
switch(config)# system health interface fc8/1
System health for interface fc8/13 is disabled.
```

The following example configures the loopback frequency to be 50 seconds for any port in the switch:

```
switch(config)# system health loopback frequency 50
The new frequency is set at 50 Seconds.
```

The following example configures the loopback frame-length to auto:

```
switch(config)# system health loopback frame-length auto
Loopback frame-length auto-size mode is now enabled.
```

The following example prevents the switch from taking any failure action:

```
switch(config)# system health failure-action
System health global failure action is now enabled.
```

The following example prevents the switch configuration from taking OHMS action (default) in case of a failure:

```
switch(config)# no system health failure-action
System health global failure action now disabled.
```

Related Commands

Command	Description
system health external-health	Explicitly runs an external Online Health Management System (OHMS) loopback test on demand for a specified interface or module.
system health internal-loopback	Explicitly runs an internal OHMS loopback test on demand for a specified interface or module.
system health serdes-loopback	Explicitly runs an internal OHMS Serializer/Deserializer (Serdes) loopback test on demand for a Fibre Channel interface.

system health cf-crc-check

To run the CompactFlash CRC checksum test on demand, use the **system health cf-crc-check** command in EXEC mode.

system health cf-crc-check module *slot*

Syntax Description

module *slot*	Specifies the module slot number.

Defaults

Enabled to automatically run in the background every 7 days.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(3)	This command was introduced.

Usage Guidelines

Run the CompactFlash CRC checksum test on demand to determine if the CompactFlash firmware is corrupted and needs to be updated.

The CRC checksum test can be run on demand on the following modules:

- DS-X9016
- DS-X9032
- DS-X9302-14K9
- DS-X9308-SMIP
- DS-X9304-SMIP
- DS-X9530-SF1-K9

Examples

The following example shows how to run the CRC checksum test on demand:

```
switch# system health cf-crc-check module 4
```

Related Commands

Command	Description
show system health	Displays system health information.
show system health statistics	Displays system health statistics.

system health cf-re-flash

To update the CompactFlash firmware on demand, use the **system health cf-re-flash** command in EXEC mode.

system health cf-re-flash module *slot*

Syntax Description

module *slot*	Specifies the module slot number.

Defaults

Enabled to automatically run in the background every 30 days.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(3)	This command was introduced.

Usage Guidelines

The CRC checksum test and the firmware update can be enabled on the following modules:

- DS-X9016
- DS-X9032
- DS-X9302-14K9
- DS-X9308-SMIP
- DS-X9304-SMIP
- DS-X9530-SF1-K9

Examples

The following example shows how to update firmware on demand:

```
switch# system health cf-re-flash module 4
```

Related Commands

Command	Description
show system health	Displays system health information.
show system health statistics	Displays system health statistics.

system health clear-errors

To clear previous error conditions stored in the Online Health Management System (OHMS) application's memory, use the **system health clear-errors** command.

system health clear-errors interface {**fc** *slot*/*port* | **iscsi** *slot*/*port*}

system health clear-errors module *slot* [**battery-charger** | **bootflash** | **cache-disk** | **eobc** | **inband** | **loopback** | **mgmt**]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:

interface {**bay** *port* | **ext** *port*}

Syntax Description

interface	Specifies the interface to be configured.
fc *slot*/*port*	Configures the Fiber Channel interface on a Cisco MDS 9000 Family switch.
iscsi *slot*/*port*	Selects the iSCSI interface to configureon a Cisco MDS 9000 Family switch.
bay *port* | **ext** *port*	(Optional) Configures the Fibre Channel interface on a port on a Cisco Fabric Switch for HP c-Class BladeSystem or on a Cisco Fabric Switch for IBM BladeCenter.
module *slot*	Specifies the required module in the switch,
battery-charger	(Optional) Configures the OHMS battery-charger test on the specified module
bootflash	(Optional) Configures the OHMS bootflash test on the specified module.
cache-disk	(Optional) Configures the OHMS cache-disk test on the specified module.
eobc	(Optional)Configures the OHMS EOBC test on the specified module.
inband	(Optional) Configures the OHMS inband test on the specified module.
loopback	(Optional) Configures the OHMS loopback test on the specified module.
mgmt	(Optional) Configures the OHMS management port test on the specified module.

Defaults

Enabled.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.
3.1(2)	Added the **interface bay | ext** option.

Usage Guidelines

You can clear the error history for Fibre Channel interfaces, iSCSI interfaces, for an entire module, or one particular test for an entire module. The **battery-charger**, the **bootflash**, the **cache-disk**, the **eobc**, the **inband**, the **loopback**, and the **mgmt** test options can be individually specified for a given module.

The management port test cannot be run on a standby supervisor module.

Examples

The following example clears the error history for the specified Fibre Channel interface:

```
switch# system health clear-errors interface fc 3/1
```

The following example clears the error history for the specified module:

```
switch# system health clear-errors interface module 3
```

The following example clears the management port test error history for the specified module:

```
switch# system health clear-errors module 2 mgmt
```

system health external-loopback

To explicitly run an external Online Health Management System (OHMS) loopback test on demand (when requested by the user) for a specified interface or module, use the **system health external-loopback** command.

system health external-loopback {**interface fc** *slot*/*port* | **source interface fc** *slot*/*port* **destination fc** *slot*/*port*} [**frame-length** *bytes* [**frame-count** *number*] | **frame-count** *number*] [**force**]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:

interface {**bay** *port* | **ext** *port*}

Syntax Description

interface	Configures an interface.
fc *slot*/*port*	Configures the Fibre Channel interface specified by the slot and port on an MDS 9000 Family switch.
source	Specifies the source Fibre Channel interface.
destination	Specifies the destination Fibre Channel interface.
bay | **ext** port	(Optional) Configures the Fibre Channel interface on a Cisco Fabric Switch for HP c-Class BladeSystem or on a Cisco Fabric Switch for IBM BladeCenter . The range is 0 to 48.
frame-length *bytes*	(Optional) Configures the specified length of the loopback test frame in bytes. The range is 0 to 128 bytes.
frame-count *number*	(Optional) Configures the specified number of frames for the loopback test. The number of frames can range from 1 to 32.
force	(Optional) Directs the software to use the non-interactive loopback mode.

Defaults

The loopback is disabled.

The frame-length is 0. The frame-count is 1.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.
3.0(1)	Added the **source** and **destination** keywords and the **frame-count** and **frame-length** options.
3.1(2)	Added the **interface bay** | **ext** option.

Usage Guidelines

Use this command to run this test on demand for the external devices connected to a switch that are part of a long haul network.

Examples

The following example displays an external loopback command for a Fibre Channel interface:

```
switch# system health external-loopback interface fc 3/1
This will shut the requested interfaces Do you want to continue (y/n)? [n] y
External loopback test on interface fc3/1 was  successful.
```

The following example displays the effect of the **force** option when implementing a forced loopback:

```
switch# system health external-loopback interface fc 3/1 force
External loopback test on interface fc3/1 was  successful.
```

Related Commands

Command	Description
system health	Configures Online Health Management System (OHMS) features for a specified interface or for the entire switch.
system health internal-loopback	Explicitly runs an internal OHMS loopback test on demand for a specified interface or module.
system health serdes-loopback	Explicitly runs an internal OHMS Serializer/Deserializer (Serdes) loopback test on demand for a Fibre Channel interface.

system health internal-loopback

To explicitly run an internal Online Health Management System (OHMS) loopback test on demand (when requested by the user) for a specified interface or module, use the **system health internal-loopback** command.

system health internal-loopback interface {**fc** *slot*/*port* | **iscsi** *slot*/*port*} [**frame-length** *bytes* [**frame-count** *number*] | **frame-count** *number*]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:

interface [**bay** *port* | **ext** *port*]

Syntax Description

interface	Configures an interface.
fc *slot*/*port*	Configures the Fibre Channel interface specified by the slot and port on an MDS 9000 Family switch.
iscsi *slot*/*port*	Specifies the iSCSI interface to configure by slot and port on an MDS 9000 Family switch.
bay *port* | **ext** *port*	(Optional) Configures the Fibre Channel interface on a Cisco Fabric Switch for HP c-Class BladeSystem or on a Cisco Fabric Switch for IBM BladeCenter . The range is 0 to 48.
frame-length *bytes*	(Optional) Configures the specified length of the loopback test frame in bytes. The range is 0 to 128 bytes.
frame-count *number*	(Optional) Configures the specified number of frames for the loopback test. The number of frames can range from 1 to 32.

Defaults

The loopback is disabled.

The frame-length is 0. The frame-count is 1.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.
3.0(1)	Added the **frame-count** and **frame-length** options.
3.1(2)	Added the **interface bay | ext** option.

Usage Guidelines

Internal loopback tests send and receive FC2 frames to and from the same ports and provide the round trip time taken in microseconds for the Fibre Channel interface.

Examples

The following example performs the internal loopback test for a Fibre Channel interface:

```
switch# system health internal-loopback interface iscsi 8/1
Internal loopback test on interface iscsi 8/1 was successful.
Round trip time taken is 79 useconds
```

Related Commands

Command	Description
system health	Configures Online Health Management System (OHMS) features for a specified interface or for the entire switch.
system health external-loopback	Explicitly runs an external OHMS loopback test on demand for a specified interface or module.
system health serdes-loopback	Explicitly runs an internal OHMS Serializer/Deserializer (Serdes) loopback test on demand for a Fibre Channel interface.

system health module

To configure Online Health Management System (OHMS) features for a specified module, use the **system health module** command. To disable these features, use the **no** form of this command.

system health module *slot* [**battery-charger** [**failure-action** | **frequency** *seconds*] | **bootflash** [**failure-action** | **frequency** *seconds*] | **cache-disk** [**failure-action** | **frequency** *seconds*] | **cf-crc-check** [**failure-action** | **frequency** *frequency*] | **cf-re-flash** [**failure-action** | **frequency** *frequency*] | **eobc** [**failure-action** | **frequency** *seconds*] | **failure-action** | **inband** [**failure-action** | **frequency** *seconds*] | **loopback** [**failure-action**] | **mgmt** [**failure-action** | **frequency** *seconds*]]

no system health module *slot* [**battery-charger** [**failure-action** | **frequency** *seconds*] | **bootflash** [**failure-action** | **frequency** *seconds*] | **cache-disk** [**failure-action** | **frequency** *seconds*] | **cf-crc-check** [**failure-action** | **frequency** *frequency*] | **cf-re-flash** [**failure-action** | **frequency** *frequency*] | **eobc** [**failure-action** | **frequency** *seconds*] | **failure-action** | **inband** [**failure-action** | **frequency** *seconds*] | **loopback** [**failure-action**] | **mgmt** [**failure-action** | **frequency** *seconds*]]

Syntax Description

module *slot*	Specifies the module slot number.
battery-charger	(Optional) Configures the battery-charger test on the specified module.
failure-action	(Optional) Controls the software from taking any action if a CompactFlash failure is determined while running the CRC checksum test.
frequency *seconds*	(Optional) Specifies the frequency in seconds. The range for the **bootflash frequency** option is 10 to 255. The range for the **cf-crc-check frequency** option is 1 to 30. The range for the **cf-re-flash frequency** option is 30 to 90. For all other options, the range is 5 to 255.
bootflash	Configures the bootflash test on the specified module.
cache-disk	Configures the cache-disk test on the specified module.
cf-crc-check	Configures the CRC checksum test.
cf-re-flash	Configures the firmware update.
eobc	Configures the EOBC test on the specified module.
inband	Configures the inband test on the specified module.
loopback	Configures the loopback test on the specified module.
mgmt	Configures the management port test on the specified module.

Defaults

The default for OHMS is enabled.

The CRC Checksum test is enabled to automatically run in the background every 7 days.

The firmware update is enabled to automatically run in the background every 30 days.

The **failure-action** feature is enabled.

Command Modes

Configuration mode.

Command History

Release	Modification
1.3(4)	This command was introduced.
3.1(3)	Added the **cf-crc-check** and **cf-reflash** options.

Usage Guidelines

The CRC checksum test and the firmware update can be enabled on the following modules:

- DS-X9016
- DS-X9032
- DS-X9302-14K9
- DS-X9308-SMIP
- DS-X9304-SMIP
- DS-X9530-SF1-K9

If you do not configure the loopback frequency value, the default frequency of 5 seconds is used for all modules in the switch.

Examples

The following example enables the battery-charger test on both batteries in the CSM module. If the switch does not have a CSM, this message is issued:

```
switch# config terminal
switch(config)# system health module 6 battery-charger
battery-charger test is not configured to run on module 6.
```

The following example enables the cache-disk test on both disks in the CSM module. If the switch does not have a CSM, this message is issued:

```
switch(config)# system health module 6 cache-disk
cache-disk test is not configured to run on module 6.
```

The following example enables the bootflash test:

```
switch(config)# system health module 6 bootflash
System health for module 6 Bootflash is already enabled.
```

The following example enables you to prevent the NX-OS software from taking any action if any component fails:

```
switch(config)# system health module 6 bootflash failure-action
System health failure action for module 6 Bootflash test is now enabled.
```

The following example enables an already-enabled bootflash test:

```
switch(config)# system health module 6 bootflash failure-action
System health failure action for module 6 Bootflash test is already enabled.
```

The following example disables the bootflash test configuration:

```
switch(config)# no system health module 6 bootflash failure-action
System health failure action for module 6 Bootflash test is now disabled.
```

The following example sets the new frequency of the bootflash test to 200 seconds:

```
switch(config)# system health module 6 bootflash frequency 200
The new frequency is set at 200 Seconds.
```

The following example enables the EOBC test:

```
switch(config)# system health module 6 eobc
System health for module 6 EOBC is now enabled.
```

The following example enables the inband test:

```
switch(config)# system health module 6 inband
System health for module 6 EOBC is now enabled.
```

The following example enables the loopback test:

```
switch(config)# system health module 6 loopback
System health for module 6 EOBC is now enabled.
```

The following example enables the management test:

```
switch(config)# system health module 6 management
System health for module 6 EOBC is now enabled.
```

The following example shows how to set the CompactFlash CRC test interval:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# system health module 6 cf-crc-check frequency 10
```

The following example shows how to set the CompactFlash CRC test **failure-action** feature:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# system health module 6 cf-crc-check failure-action
```

The following example shows how to set the CompactFlash reflash update interval:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# system health module 6 cf-reflash frequency 10
```

The following example shows how to set the CompactFlash reflash **failure-action** feature:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# system health module # cf-re-flash failure-action
```

Related Commands

Command	Description
show system health	Displays system health information.
show system health statistics	Displays system health statistics.

system health serdes-loopback

To explicitly run an internal Online Health Management System (OHMS) Serializer/Deserializer (Serdes) loopback test on demand (when requested by the user) for a Fibre Channel interface, use the **system health serdes-loopback** command.

system health serdes-loopback interface fc *slot/port* [**frame-length** *bytes* [**frame-count** *number*] | **frame-count** *number*] [**force**]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:

interface {**bay** *port* | **ext** *port*}

Syntax Description

interface	Configures an interface.
fc *slot/port*	(Optional) Configures the Fiber Channel interface specified by the slot and port on an MDS 9000 Family switch.
bay *port* | **ext** *port*	(Optional) Configures the Fibre Channel interface on a Cisco Fabric Switch for HP c-Class BladeSystem or on a Cisco Fabric Switch for IBM BladeCenter. The range is 0 to 48.
force	Directs the software to use the non-interactive loopback mode.
frame-length *bytes*	(Optional) Configures the specified length of the loopback test frame in bytes. The range is 0 to 128 bytes.
frame-count *number*	(Optional) Configures the specified number of frames for the loopback test. The number of frames can range from 1 to 32.

Defaults

Loopback is disabled.

The frame-length is 0. The frame-count is 1.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.
3.1(2)	Added the **interface bay | ext** option**.**

Usage Guidelines

None.

Examples

The following example performs a Serdes loopback test within ports for an entire module:

```
switch# system health serdes-loopback interface fc 4/1
```

```
This will shut the requested interfaces Do you want to continue (y/n)?  [n] y
Serdes loopback test on interface fc 4/1 was successful.
```

The following example performs a Serdes loopback test within ports for the entire module and overrides the frame count configured on the switch:

```
switch# system health serdes-loopback interface fc 3/1 frame-count 10
This will shut the requested interfaces Do you want to continue (y/n)? [n] y
Serdes loopback test passed for module 3 port 1
```

Related Commands

Command	Description
system health	Configures Online Health Management System (OHMS) features for a specified interface or for the entire switch.
system health external-loopback	Explicitly runs an external OHMS loopback test on demand for a specified interface or module.
system health internal-loopback	Explicitly runs an internal OHMS loopback test on demand for a specified interface or module.

system heartbeat

To enable system heartbeat checks, use the **system heartbeat** command in EXEC mode. Use the **no** form of this command to disable this feature.

system heartbeat

no system heartbeat

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

You can disable the heartbeat checking feature (enabled by default) for debugging and troubleshooting purposes such as attaching a GDB to a specified process.

Examples

The following example enables the system heartbeat checks:

```
switch# system heartbeat
```

Related Commands

Command	Description
show system	Displays system information.

system memlog

To collect system memory statistics, use the **system memlog** command in EXEC mode.

system memlog

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

Use this command for debugging and troubleshooting purposes.

Examples

The following example enables system memory logging:

```
switch# system memlog
```

Related Commands

Command	Description
show system	Displays system information.

system startup-config

To release a system startup configuration lock, use the **system startup-config** command in EXEC mode.

system startup-config unlock *lock-id*

Syntax Description

unlock *lock-id*	Configures the system startup-config unlock ID number. The range is 0 to 65536.

Defaults

Disabled.

Command Modes

EXEC.

Command History

Release	Modification
2.0(1b)	This command was introduced.

Usage Guidelines

The **system startup-config** command allows you to unlock or release the rr_token lock. To determine the *lock-id,* use the **show system internal sysmgr startup-config locks** command.

Examples

The following example releases the system configuration lock with identifier 1:

```
switch# system startup-config unlock 1
```

Related Commands

Command	Description
show system	Displays system information.

system statistics reset

To reset the high availability statistics collected by the system, use the **system statistics reset** command in EXEC mode.

system statistics reset

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

You can disable the system statistics reset feature (enabled by default) for debugging and troubleshooting purposes.

Examples

The following example resets the HA statistics:

```
switch# system statistics reset
```

system switchover (EXEC mode)

To specifically initiate a switchover from an active supervisor module to a standby supervisor module, use the **system switchover** command in EXEC mode.

system switchover

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

Any switchover function is nonrevertive. Once a switchover has occurred and the failed processor has been replaced or successfully restarted, you cannot switch back to the original, active supervisor module (unless there is a subsequent failure or you issue the **system switchover** command).

Examples

The following example initiates a HA switchover from an active supervisor module to a standby supervisor module:

```
switch# system switchover
```

Related Commands

Command	Description
show module	Displays the HA-standby state for the standby supervisor module.
show system redundancy status	Determines whether the system is ready to accept a switchover.
show version compatibility	Determines version compatibility between switching modules.

system switchover (configuration mode)

To enable a switchover for the system, use the **system switchover** command in configuration mode. To revert to the factory default setting, use the **no** form of the command.

system switchover {**ha** | **warm**}

no system switchover

Syntax Description

ha	Specifies an HA switchover.
warm	Specifies a warm switchover.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example enables a HA switchover from an active supervisor module to a standby supervisor module:

```
switch# config terminal
switch(config)# system switchover ha
```

system timeout congestion-drop

To configure a system timeout value for congestion drop, use the **system timeout congestion-drop** command.

system timeout congestion-drop *number* **default mode {E/F}**

Syntax Description

number	Specifies the number in milliseconds. The range is from 100 to 1000 milliseconds, in 10 milliseconds increments.
default	Specifies the default timeout value for congestion drop.
mode	Specifies the port mode.
E	Specifies E mode.
F	Specifies F mode.

Defaults

The default timeout value is 500 milliseconds.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 4.2(7a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to set the stuck frame timeout for a port in E mode:

```
switch# config t
switch(config)# system timeout congestion-drop 500 mode E
switch(config)#
```

The following example shows how to set the stuck frame timeout for a port in F mode:

```
switch# config t
switch(config)# system timeout congestion-drop 200 mode F
switch(config)#
```

The following example shows how to set the stuck frame default timeout for a port in E mode:

```
switch(config)# system timeout congestion-drop default mode E
switch(config)#
```

The following example shows how to set the stuck frame default timeout for a port in F mode:

```
switch(config)# system timeout congestion-drop default mode F
switch(config)#
```

Related Commands

Command	Description
show system internal snmp credit-not-available	Displays port monitor credit not available counter logs.

system timeout no-credit-drop

To configure the system timeout value for no credit drop, use the **system timeout no-credit-drop** command. To disable this command use the **no** form of the command.

system timeout no-credit-drop *number* **default mode {E/F}**

no system timeout no-credit-drop mode {E/F}

Syntax Description

number	Specifies the number in milliseconds. The range is from 100 to 1000 milliseconds, in 100 miliseconds increments.
default	Specifies the default timeout value for no credit drop.
mode	Specifies the port mode.
E	Specifies E mode.
F	Specifies F mode.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 4.2(7a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the no credit drop timeout for a port in E mode:

```
switch# config t
switch(config)# system timeout no-credit-drop 500 mode E
switch(config)#
```

The following example shows how to display the no credit drop timeout for a port in F mode:

```
switch# config t
switch(config)# system timeout no-credit-drop 300 mode F
switch(config)#
```

The following example shows how to display the no credit drop timeout default for a port in E mode:

```
switch(config)# system timeout no-credit-drop default mode E
switch(config)#
```

The following example shows how to display the no credit drop timeout default for a port in F mode:

```
switch(config)# system timeout no-credit-drop default mode F
switch(config)#
```

Related Commands

Command	Description
show system internal snmp credit-not-available	Displays port monitor credit not available counter logs.

system trace

To configure the system trace level, use the **system trace** command in configuration mode. To disable this feature, use the **no** form of the command.

system trace *bit-mask*

no system trace

Syntax Description

bit-mask	Specifies the bit mask to change the trace level.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

This command is used for debugging purposes.

Examples

The following example shows how to configure the system trace level:

```
switch# config terminal
switch(config)# system trace 0xff
```

system watchdog

To enable watchdog checks, use the **system watchdog** command in EXEC mode. To disable this feature, use the **no** form of the command.

system watchdog

no system watchdog

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

If a watchdog is not logged at every 8 seconds by the software, the supervisor module reboots the switch.

You can disable the watchdog checking feature (enabled by default) for debugging and troubleshooting purposes such as attaching a GDB or a kernel GDB (KGDB) to a specified process.

Examples

The following example enables the system watchdog:

```
switch# system watchdog
```