



## C Commands

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# callhome

To configure the Call Home function, use the **callhome** command.

## callhome

**Syntax Description** This command has no arguments or keywords.

**Command Default** Disabled.

**Command Modes** Configuration mode

Command History	Release	Modification
	1.0(2)	This command was introduced.

**Usage Guidelines** The Call Home configuration commands are available in the (config-callhome) submode. A Call Home message is used to contact a support person or organization in case an urgent alarm is raised. Once you have configured the contact information, you must enable the Call Home function. The **enable** command is required for the Call Home function to start operating. When you disable the Call Home function, all input events are ignored.



**Note** Even if Call Home is disabled, basic information for each Call Home event is sent to syslog.

The user-def-cmd command allows you to define a command whose outputs should be attached to the Call Home message being sent. Only show commands can be specified and they must be associated with an alert group. Five commands can be specified per alert group. Invalid commands are rejected.



**Note** Customized **show** commands are only supported for full text and XML alert groups. Short text alert groups (short-txt-destination) do not support customized **show** commands because they only allow 128 bytes of text.

To assign show commands to be executed when an alert is sent, you must associate the commands with the alert group. When an alert is sent, Call Home associates the alert group with an alert type and attaches the output of the show commands to the alert message.



**Note** Make sure the destination profiles for the non-Cisco-TAC alert group, with a predefined show command, and the Cisco-TAC alert group are not the same.

The following example assigns contact information:

```
switch# config terminal
config terminal
```

```

switch# snmp-server contact personname@companyname.com
switch(config)# callhome
switch(config-callhome)# email-contact username@company.com
switch(config-callhome)# phone-contact +1-800-123-4567
switch(config-callhome)# streetaddress 1234 Picaboo Street, Any city, Any state, 12345
switch(config-callhome)# switch-priority 0
switch(config-callhome)# customer-id Customer1234
switch(config-callhome)# site-id Site1ManhattanNY
switch(config-callhome)# contract-id Company1234

```

The following example configures a user-defined **show** command for an alert-group license:

```
switch(config-callhome)# alert-group license user-def-cmd "show license usage"
```




---

**Note** The **show** command must be enclosed in double quotes.

---

The following example removes a user-defined **show** command for an alert-group license:

```
switch(config-callhome)# no alert-group license user-def-cmd "show license usage"
```

#### Related Commands

Command	Description
<b>alert-group</b>	Customizes a Call Home alert group with user-defined <b>show</b> commands.
<b>callhome test</b>	Sends a dummy test message to the configured destination(s).
<b>show callhome</b>	Displays configured Call Home information.

# callhome mft-put

To copy the file from the bootflash directory to a secure remote support service, use the **callhome mft-put** command.

**callhome mft-put** *filename*

## Syntax Description

<i>filename</i>	The name of the file to be transferred to a secure remote support service.
-----------------	--

## Command Default

None

## Command Modes

User EXEC (#)  
Privileged EXEC (#)

## Command History

Release	Modification
NX-OS 7.3(1)DY(1)	This command was introduced.

## Usage Guidelines

The **callhome mft-put** command is used to transfer files such as syslogs, output of the **show tech-support** command, and so on, to a secure remote support service.

## Examples

The following example shows how to copy a file bootflash to a secure remote support service:

```
switch# callhome mft-put zone_sdb.log
Trying to copy file using mft-put to remote location
Successfully sent file using mft-put
```

## Related Commands

Command	Description
<b>callhome</b>	Configures Call Home functions.
<b>show callhome</b>	Displays configured Call Home information.

# callhome test

To simulate a Call Home message generation, use the **callhome test** command.

**callhome test** [**inventory**]

## Syntax Description

<b>inventory</b>	(Optional) Sends a dummy Call Home inventory.
------------------	---

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
1.0(2)	This command was introduced.

## Usage Guidelines

You can simulate a message generation by entering a **callhome test** command.

## Examples

The following example sends a test message to the configured destinations:

```
switch# callhome test
trying to send test callhome message
successfully sent test callhome message
```

The following example sends a test inventory message to the configured destinations:

```
switch# callhome test inventory
trying to send test callhome message
successfully sent test callhome message
```

## Related Commands

Command	Description
<b>callhome</b>	Configures Call Home functions.
<b>show callhome</b>	Displays configured Call Home information.



# callhome test-keepalive

To check for the connectivity between Call Home and a secure remote support service, use the **callhome test-keepalive** command.

**callhome test-keepalive**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes**  
User EXEC (#)  
Privileged EXEC (#)

Command History	Release	Modification
	NX-OS 7.3(1)DY(1)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to initiate a keepalive message communication with a secure remote support service:

```
switch# callhome test-keepalive
Initiating callhome test-keepalive
```

Related Commands	Command	Description
	<b>callhome</b>	Configures Call Home functions.
	<b>show callhome</b>	Displays configured Call Home information.

# cd

To change the default directory or file system, use the **cd** command.

**cd** {*directory* | **bootflash** : [**directory**] | **slot0** : [**directory**] | **volatile** : [**directory**]}

## Syntax Description

<i>directory</i>	(Optional) Name of the directory on the file system.
<b>bootflash:</b>	URI or alias of the bootflash or file system.
<b>slot0:</b>	URI or alias of the slot0 file system.
<b>volatile:</b>	URI or alias of the volatile file system.

## Command Default

The initial default file system is flash:. For platforms that do not have a physical device named flash:, the keyword flash: is aliased to the default flash device.

If you do not specify a directory on a file system, the default is the root directory on that file system.

## Command Modes

EXEC mode

## Command History

Release	Modification
1.0(2)	This command was introduced.

## Usage Guidelines

For all EXEC commands that have an optional file system argument, the system uses the file system specified by the cd command when you omit the optional file system argument. For example, the dir command, which displays a list of files on a file system, contains an optional file system argument. When you omit this argument, the system lists the files on the file system specified by the cd command.

## Examples

The following example sets the default file system to the flash memory card inserted in slot 0:

```
switch# pwd
bootflash:/
switch# cd slot0:

switch# pwd
slot0:/
```

## Related Commands

Command	Description
<b>copy</b>	Copies any file from a source to a destination.
<b>delete</b>	Deletes a file on a flash memory device.
<b>dir</b>	Displays a list of files on a file system.
<b>pwd</b>	Displays the current setting of the cd command.

<b>Command</b>	<b>Description</b>
<b>show file systems</b>	Lists available file systems and their alias prefix names.
<b>undelete</b>	Recovers a file marked deleted on a Class A or Class B flash file system.

# cdp

To globally configure the Cisco Discovery Protocol parameters, use the **cdp** command. Use the **no** form of this command to revert to factory defaults.

```
cdp { enable | advertise { v1 | v2 } | holdtime holdtime-seconds | timer timer-seconds }
no cdp { enable | advertise | holdtime holdtime-seconds | timer timer-seconds }
```

## Syntax Description

<b>enable</b>	Enables CDP globally on all interfaces on the switch.
<b>advertise</b>	Specifies the EXEC command to be executed.
<b>v1</b>	Specifies CDP version 1.
<b>v2</b>	Specifies CDP version 2.
<b>holdtime</b>	Sets the hold time advertised in CDP packets.
<i>holdtime-seconds</i>	The holdtime in seconds. The default is 180 seconds and the valid range is from 10 to 255 seconds.
<b>timer</b>	Sets the refresh time interval.
<i>timer-seconds</i>	The time interval in seconds. The default is 60 seconds and the valid range is from 5 to 255 seconds.

## Command Default

CDP is enabled.  
 The hold time default interval is 180 seconds.  
 The refresh time interval is 60 seconds.

## Command Modes

Configuration mode

## Command History

Release	Modification
1.1(1)	This command was introduced.

## Usage Guidelines

Use the **cdp enable** command to enable the Cisco Discovery Protocol (CDP) feature at the switch level or at the interface level. Use the **no** form of this command to disable this feature. When the interface link is established, CDP is enabled by default.

CDP version 1 (v1) and version 2 (v2) are supported in Cisco MDS 9000 Family switches. CDP packets with any other version number are silently discarded when received.

## Examples

The following example disables the CDP protocol on the switch. When CDP is disabled on an interface, one packet is sent to clear out the switch state with each of the receiving devices:

```
switch(config)#
no cdp enable
```

```
Operation in progress. Please check global parameters
switch(config-console)#
```

The following example enables (default) the CDP protocol on the switch. When CDP is enabled on an interface, one packet is sent immediately. Subsequent packets are sent at the configured refresh time.

```
switch(config)# cdp enable
Operation in progress. Please check global parameters
switch(config)#
```

The following example configures the Gigabit Ethernet interface 8/8 and disables the CDP protocol on this interface. When CDP is disabled on an interface, one packet is sent to clear out the switch state with each of the receiving devices.

```
switch(config)#
interface gigabitethernet 8/8
switch(config-if)#
no cdp enable
Operation in progress. Please check interface parameters
switch(config-console)#
```

The following example enables (default) the CDP protocol on the selected interface. When CDP is enabled on this interface, one packet is sent immediately. Subsequent packets are sent at the configured refresh time.

```
switch(config-if)#
cdp enable
Operation in progress. Please check interface parameters
switch(config)#
```

The following example globally configures the refresh time interval for the CDP protocol in seconds. The default is 60 seconds and the valid range is from 5 to 255 seconds.

```
switch#
config terminal
switch(config)#
cdp timer 100
switch(config)#
```

The following example globally configures the hold time advertised in CDP packet in seconds. The default is 180 seconds and the valid range is from 10 to 255 seconds.

```
switch#
config terminal
switch(config)#
cdp holdtime 200
switch(config)#
```

The following example globally configures the CDP version. The default is version 2 (v2). The valid options are v1 and v2.

```
switch# config terminal
switch(config)# cdp advertise v1
switch(config)#
```

---

**Related Commands**

<b>Command</b>	<b>Description</b>
clear cdp	Clears global or interface-specific CDP configurations.
show cdp	Displays configured CDP settings and parameters.

# certificate

To use an SSL or TLS certificate, use the **certificate** command.

**certificate** *certificate\_path* *host\_name*

## Syntax Description

<i>certificate_path</i>	Specifies the path to the Privacy Enhanced Mail (PEM) certificate file.
<i>host_name</i>	Host name associated with the PEM file.

## Command Default

No certificate is used.

## Command Modes

Telemetry configuration mode (config-telemetry)

## Command History

Release	Modification
8.3(1)	This command was introduced.

## Examples

This example shows how to install an SSL or TLS certificate:

```
switch# configure
switch(config)# telemetry
switch(config-telemetry)# certificate /bootflash/test.pem foo.test.google.fr
```

## Related Commands

Command	Description
<b>feature telemetry</b>	Enables the SAN Telemetry Streaming feature.
<b>telemetry</b>	Enters SAN Telemetry Streaming configuration mode.

# cfs distribute

To enable or disable Cisco Fabric Services (CFS) distribution on the switch, use the **cfs distribute** command in configuration mode. To disable this feature, use the **no** form of the command.

**cfs distribute**  
**no cfs distribute**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** CFS distribution is enabled.

**Command Modes** Configuration mode

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

**Usage Guidelines** By default CFS is in the distribute mode. In the distribute mode, fabric wide distribution is enabled. Applications can distribute data/configuration to all CFS-capable switches in the fabric where the application exists. This is the normal mode of operation.

If CFS distribution is disabled, using the **no cfs distribute** command causes the following to occur:

- CFS and the applications using CFS on the switch are isolated from the rest of the fabric even though there is physical connectivity.
- All CFS operations are restricted to the isolated switch.
- All the CFS commands continue to work similar to the case of a physically isolated switch.
- Other CFS operations (for example, lock, commit, and abort) initiated at other switches do not have any effect at the isolated switch.
- CFS distribution is disabled over both Fibre Channel and IP.

## Examples

The following example shows how to disable CFS distribution:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# no cfs distribute
```

The following example shows how to reenable CFS distribution:

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

## Related Commands

Command	Description
<b>show cfs status</b>	Displays whether CFS distribution is enabled or disabled.



# cfs ipv4 distribute

To enable Cisco Fabric Services (CFS) distribution over IPv4 for applications that want to use this feature, use the **cfs ipv4 distribute** command in configuration mode. To disable this feature, use the **no** form of the command.

**cfs ipv4 distribute**  
**no cfs ipv4 distribute**

**Syntax Description** This command has no arguments or keywords.

**Command Default** CFS distribution is enabled.  
 CFS over IP is disabled.

**Command Modes** Configuration mode

Command History	Release	Modification
	3.0(1)	This command was introduced.

**Usage Guidelines** All CFS over IP enabled switches with similar multicast addresses form one CFS over IP fabric. CFS protocol specific distributions, such as the keep-alive mechanism for detecting network topology changes, use the IP multicast address to send and receive information.

Observe the following guidelines when using this command:

- If a switch is reachable over both IP and Fibre Channel, application data will be distributed over Fibre Channel.
- You can select either an IPv4 or IPv6 distribution when CFS is enabled over IP.
- Both IPv4 and IPv6 distribution cannot be enabled on the same switch.
- A switch that operate IPv4 distribution enabled cannot detect a switch that IPv6 distribution enabled. The switches behave as if they are in two different fabrics even though they are connected to each other.

## Examples

The following example shows how to disable CFS IPv4 distribution:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# no cfs ipv4 distribute
This will prevent CFS from distributing over IPv4 network.
Are you sure? (y/n) [n]
```

The following example shows how to reenab CFS IPv4 distribution:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cfs ipv4 distribute
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>cfs ipv4 mcast-address</b>	Configures an IPv4 multicast address for Cisco Fabric Services (CFS) distribution over IPv4.
<b>show cfs status</b>	Displays whether CFS distribution is enabled or disabled.

## cfs ipv4 mcast-address

To configure an IPv4 multicast address for Cisco Fabric Services (CFS) distribution over IPv4, use the **cfs ipv4 mcast-address** command in configuration mode. To disable this feature, use the **no** form of the command.

```
cfs ipv4 mcast-address ipv4-address
no cfs ipv4 mcast-address ipv4-address
```

<b>Syntax Description</b>	<i>ipv4-address</i>	Specifies an IPv4 multicast address for CFS distribution over IPv4. The range of valid IPv4 addresses is 239.255.0.0 through 239.255.255.255, and 239.192.0.0 through 239.251.251.251.
---------------------------	---------------------	--

**Command Default** Multicast address: 239.255.70.83.

**Command Modes** Configuration mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	3.0(1)	This command was introduced.

**Usage Guidelines** Before using this command, enable CFS distribution over IPv4 using the **cfs ipv4 distribute** command.

All CFS over IP enabled switches with similar multicast addresses form one CFS over IP fabric. CFS protocol specific distributions, such as the keepalive mechanism for detecting network topology changes, use the IP multicast address to send and receive information.



**Note** CFS distributions for application data use directed unicast.

You can configure a value for a CFS over IP multicast address. The default IPv4 multicast address is 239.255.70.83.

### Examples

The following example shows how to configure an IP multicast address for CFS over IPv4:

```
switch# config t
switch(config)# cfs ipv4 mcast-address 239.255.1.1
Distribution over this IP type will be affected
Change multicast address for CFS-IP ?
Are you sure? (y/n) [n] y
```

The following example shows how to revert to the default IPv4 multicast address for CFS distribution over IPv4. The default IPv4 multicast address for CFS is 239.255.70.83:

```
switch(config)# no cfs ipv4 mcast-address 10.1.10.100
Distribution over this IP type will be affected
Change multicast address for CFS-IP ?
Are you sure? (y/n) [n] y
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>cfs ipv4 distribute</b>	Enables or disables Cisco Fabric Services (CFS) distribution over IPv4.
<b>show cfs status</b>	Displays whether CFS distribution is enabled or disabled.

## cfs ipv6 distribute

To enable Cisco Fabric Services (CFS) distribution over IPv6 for applications that want to use this feature, use the **cfs ipv6 distribute** command in configuration mode. To disable this feature, use the **no** form of the command.

**cfs ipv6 distribute**  
**no cfs ipv6 distribute**

**Syntax Description** This command has no arguments or keywords.

**Command Default** CFS distribution is enabled.  
 CFS over IP is disabled.

**Command Modes** Configuration mode

Command History	Release	Modification
	3.0(1)	This command was introduced.

**Usage Guidelines** All CFS over IP enabled switches with similar multicast addresses form one CFS over IP fabric. CFS protocol specific distributions, such as the keepalive mechanism for detecting network topology changes, use the IP multicast address to send and receive information.

Observe the following guidelines when using this command:

- If a switch is reachable over both IP and Fibre Channel, application data will be distributed over Fibre Channel.
- You can select either an IPv4 or IPv6 distribution when CFS is enabled over IP.
- Both IPv4 and IPv6 distribution cannot be enabled on the same switch.
- A switch that operate IPv4 distribution enabled cannot detect a switch that IPv6 distribution enabled. The switches behave as if they are in two different fabrics even though they are connected to each other.

### Examples

The following example shows how to disable CFS IPv6 distribution:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# no cfs ipv6 distribute
This will prevent CFS from distributing over IPv6 network.
Are you sure? (y/n) [n]
```

The following example shows how to reenable CFS IPv6 distribution:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cfs ipv6 distribute
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>cfs ipv6 mcast-address</b>	Configures an IPv6 multicast address for Cisco Fabric Services (CFS) distribution over IPv6.
<b>show cfs status</b>	Displays whether CFS distribution is enabled or disabled.

## cfs ipv6 mcast-address

To configure an IPv6 multicast address for Cisco Fabric Services (CFS) distribution over IPv6, use the **cfs ipv6 mcast-address** command in configuration mode. To disable this feature, use the **no** form of the command.

```
cfs ipv6 mcast-address ipv6-address
no cfs ipv6 mcast-address ipv6-address
```

<b>Syntax Description</b>	<i>ipv6-address</i> An IPv6 multicast address or CFS distribution over IPv6. The IPv6 Admin scope range is [ff15::/16, ff18::/16].
---------------------------	--

**Command Default** Multicast address: ff15::eff:4653.

**Command Modes** Configuration mode

Command History	Release	Modification
	3.0(1)	This command was introduced.

**Usage Guidelines** Before using this command, enable CFS distribution over IPv6 using the **cfs ipv6 distribute** command. All CFS over IP enabled switches with similar multicast addresses form one CFS over IP fabric. CFS protocol specific distributions, such as the keepalive mechanism for detecting network topology changes, use the IP multicast address to send and receive information.



**Note** CFS distributions for application data use directed unicast.

You can configure a CFS over IP multicast address value for IPv6. The default IPv6 multicast address is ff15::eff:4653. Examples of the IPv6 Admin scope range are ff15::0000:0000 to ff15::fff:fff and ff18::0000:0000 to ff18::fff:fff.

### Examples

The following example shows how to configure an IP multicast address for CFS over IPv6:

```
switch# config t
switch(config)# cfs ipv6 mcast-address
ff13::e244:4754
Distribution over this IP type will be affected
Change multicast address for CFS-IP ?
Are you sure? (y/n) [n] y
```

The following example shows how to revert to the default IPv6 multicast address for CFS distribution over IPv6. The default IPv6 multicast address for CFS is ff13:7743:4653.

```
switch(config)# no cfs ipv6
ff13::e244:4754
Distribution over this IP type will be affected
```

```
Change multicast address for CFS-IP ?  
Are you sure? (y/n) [n] y
```

**Related Commands**

Command	Description
<b>cfs ipv6 distribute</b>	Enables or disables Cisco Fabric Services (CFS) distribution over IPv6.
<b>show cfs status</b>	Displays whether CFS distribution is enabled or disabled.



# cfs region

To create a region that restricts the scope of application distribution to the selected switches, use the `cfs region` command in the configuration mode. To disable this feature, use the `no` form of this command.

**cfs region region-id**  
**no cfs region region-id**

## Syntax Description

<i>region-id</i>	Assigns an application to a region. A total of 200 regions are supported.
------------------	---

## Command Default

None.

Configuration mode

## Command History

Release	Modification
3.2(1)	This command was introduced.

## Usage Guidelines

An application can only be a part of one region on a given switch. By creating the region ID and assigning it to an application, the application distribution is restricted to switches with a similar region ID.

Cisco Fabric Services (CFS) regions provide the ability to create distribution islands within the application scope. Currently, the regions are supported only for physical scope applications. In the absence of any region configuration, the application will be a part of the default region. The default region is region ID 0. This command provides backward compatibility with the earlier release where regions were not supported. If applications are assigned to a region, the configuration check will prevent the downgrade. Fabric Manager supports CFS regions.

## Examples

The following example shows how to create a region ID:

```
switch# config
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cfs region 1
```

The following example shows how to assign an application to a region:

```
switch# cfs region 1
switch# config
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cfs region 1
switch(config-cfs-region)# ntp
```



**Note** The applications assigned to a region have to be registered with CFS.

The following example shows how to remove an application assigned to a region:

```
switch# cfs region 1
```

```
switch# config
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cfs region 1
switch(config-cfs-region)# no ntp
```

The following example shows how to remove all the applications from a region:

```
switch(config)# no cfs region 1
WARNING: All applications in the region will be moved to default region.
Are you sure? (y/n) [n] y
```

---

**Related Commands**

Command	Description
<b>show cfs regions</b>	Displays all configured applications with peers.

## cfs static-peers

To enable static peers interface, use the **cfs static-peers** command. To disable this feature, use the **no** form of the command.

**cfs static-peers**  
**no cfs static-peers**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Enabled.

**Command Modes** Configuration mode

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

**Usage Guidelines** This command enables the static peers with status and all the peers in the physical fabric.



**Note** The no cfs static-peers displays a warning string, and changes the entire fabric from static to dynamic.

### Examples

The following example shows how to enable static peers interface:

```
Switch(config)# cfs static-peers
Warning: This mode will stop dynamic discovery and relay only on these peers.
Do you want to continue?(y/n) [n] y
Switch(config-cfs-static)#ip address 209.165.200.226
Switch(config-cfs-static)#ip address 209.165.200.227
Switch(config-cfs-static)#exit
Switch(config)#
```

Related Commands	Command	Description
	<b>show cfs static peers</b>	Displays configured static peers with status.

# channel mode active

To enable channel mode on a PortChannel interface, use the **channel mode active** command. To disable this feature, use the **no** form of the command.

**channel mode active**  
**no channel mode**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** Enabled.

**Command Modes** Interface configuration submode.

Release	Modification
2.0(x)	This command was introduced.

**Usage Guidelines** This command determines the protocol operate for all the member ports in the channel group associated with the port channel interface.

**Examples** The following example shows how to disable channel mode on a PortChannel interface:

```
switch# config terminal
switch(config)# interface port-channel 10
switch(config-if)# no channel mode active
```

Command	Description
<b>show interface port-channel</b>	Displays PortChannel interface information.

# channel-group

To add a port to a PortChannel group, use the **channel-group** command. To remove a port, use the **no** form of the command.

**channel-group port-channel number force**  
**no channel-group port-channel number force**

## Syntax Description

<i>port-channel number</i>	The PortChannel number. The range is 1 to 256.
<b>force</b>	Specifies the PortChannel to add a port, without compatibility check of port parameters, port mode and port speed.

## Command Default

None

## Command Modes

Interface configuration mode

## Command History

Release	Modification
NX-OS 4.1(3)	Deleted auto keyword from the syntax description.
3.0(1)	This command was introduced.

## Usage Guidelines

When ports are added to a PortChannel, manager checks for incompatibility in the port mode and port speed. If the ports are being added to the PortChannel, do not have compatible parameters, the ports will not be added to the PortChannel. The force option bypasses, the port parameter compatibility check, and adds the port to a PortChannel. It also forces the individual member interfaces to inherit the port parameters configured on the PortChannel itself. If you configure switchport speed 4000 on the PortChannel then the member interface is forced to that setting.

force option is used to override the port's parameters. The auto mode support is not available after Release 4.x. To convert auto PortChannel to active mode PortChannel, use the port-channel persistent command. This command needs to be run on both sides of the auto Port Channel.

## Examples

The following example shows how to add a port to the PortChannel:

```
switch# config terminal
switch(config)# interface fc 1/1
switch(config-if)# channel-group 2 force
fc1/1 added to port-channel 2 and disabled
please do the same operation on the switch at the other end of the port-channel,
then do "no shutdown" at both end to bring them up
switch(config-if)#
```

## Related Commands

Command	Description
<b>show interface port-channel</b>	Displays the PortChannel interface information.

# cimservers

To configure the Common Information Models (CIM) parameters, use the **cimservers** command. Use the **no** form of this command to revert to factory defaults.

```
cimservers {certificate {bootflash : filename | slot0 : filename | volatile : filename} | clearcertificate
filename | enable | enablehttp | enablehttps}
no cimservers {certificate {bootflash : filename | slot0 : filename | volatile : filename} |
clearcertificate filename | enable | enablehttp | enablehttps}
```

## Syntax Description

<b>certificate</b>	Installs the Secure Socket Layer (SSL) certificate
<b>bootflash:</b>	Specifies the location for internal bootflash memory.
<i>filename</i>	The name of the license file with a .pem extension.
<b>slot0: filename</b>	Specifies the location for the CompactFlash memory or PCMCIA card.
<b>volatile: filename</b>	Specifies the location for the volatile file system.
<b>clearcertificate filename</b>	Clears a previously installed SSL certificate.
<b>enable</b>	Enables and starts the CIM server.
<b>enablehttp</b>	Enables the HTTP (non-secure) protocol for the CIM server (default).
<b>enablehttps</b>	Enables the HTTPS (secure) protocol for the CIM server.

## Command Default

None

## Command Modes

Configuration mode

## Command History

Release	Modification
1.3(1)	This command was introduced.
5.2(1)	This command was deprecated.

## Usage Guidelines

A CIM client is required to access the CIM server. The client can be any client that supports CIM.

## Examples

The following example installs a Secure Socket Layer (SSL) certificate specified in the file named with a .pem extension:

```
switch#
config terminal
switch(config)# cimservers certificateName bootflash:simservers.pem
```

The following example clears the specified SSL certificate:

```
switch(config)#
```

```
cimservr clearCertificateName bootflash:simserver.pem
```

**Related Commands**

Command	Description
<b>show cimservr</b>	Displays configured CIM settings and parameters.

# cimservers clearcertificate

To clear the cimservers certificate, use the cimservers clearcertificate command in configuration mode.

**cimservers clearcertificate**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Configuration mode

Command History	Release	Modification
	3.3(1a)	This command was introduced.
	5.2(1)	This command was deprecated.

**Usage Guidelines** You need not specify the certificate name.

**Examples** The following example shows how to clear the cimservers certificate:

```
switch# config
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cimservers clearcertificate
```

Related Commands	Command	Description
	<b>show cimservers certificate name</b>	Displays the cimservers certificate filename.



# cimserver loglevel

To configure the cimserver log level filter, use the cimserver loglevel command in configuration mode.

**cimserver loglevel filter value**

Syntax Description	filter value	
	1	Specifies the cimserver log filter levels. The range is 1 to 5.
	2	Sets the current value for the log level property to trace.
	3	Sets the current value for the log level property to information.
	4	Sets the current value for the log level property to warning.
	5	Sets the current value for the log level property to severe.
	6	Sets the current value for the log level property to fatal.

**Command Default** None

**Command Modes** Configuration mode

Command History	Release	Modification
	3.3(1a)	This command was introduced.
	5.2(1)	This command was deprecated.

**Usage Guidelines** None

**Examples** The following example displays the cimserver log level:

```
switch# config
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cimserver loglevel 2
Current value for the property logLevel is set to "INFORMATION" in CIMServer.
```

Related Commands	Command	Description
	<b>show cimserver logs</b>	Displays the cimserver logs.

# class

To select a QoS policy map class for configuration, use the **class** command in QoS policy map configuration submode. To disable this feature, use the **no** form of the command.

**class** *class-map-name*  
**no class** *class-map-name*

## Syntax Description

<i>class-map-name</i>	The QoS policy class map to configure.
-----------------------	--

## Command Default

Disabled

## Command Modes

QoS policy map configuration submode

## Command History

Release	Modification
1.3(1)	This command was introduced.

## Usage Guidelines

Before you can configure a QoS policy map class you must complete the following:

- Enable the QoS data traffic feature using the **qos enable** command.
- Configure a QoS class map using the **qos class-map** command.
- Configure a QoS policy map using the **qos policy-map** command.

After you configure the QoS policy map class, you can configure the Differentiated Services Code Point (DSCP) and priority for frames matching this class map.

## Examples

The following example shows how to select a QoS policy map class to configure:

```
switch# config terminal
switch(config)# qos enable
switch(config)# qos class-map class-map1
switch(config)# qos policy-map policyMap1
switch(config-pmap)# class class-map1
```

## Related Commands

Command	Description
<b>dscp</b>	Configures the DSCP in the QoS policy map class.
<b>qos class-map</b>	Configures a QoS class map.
<b>qos enable</b>	Enables the QoS data traffic feature on the switch.
<b>qos policy-map</b>	Configures a QoS policy map.
<b>priority</b>	Configures the priority in the QoS policy map class.

Command	Description
show qos	Displays the current QoS settings.

# clear accounting log

To clear the accounting log, use the **clear accounting log** command.

**clear accounting log**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example clears the accounting log:

```
switch# clear accounting session
```

Related Commands	Command	Description
	<b>show accounting log</b>	Displays the accounting log contents.

# clear analytics

To reset flow metrics for a view instance, use the **clear analytics** command.

**clear analytics query** “*query\_string*”

## Syntax Description

<b>query</b> “ <i>query_string</i> ”	Query syntax.
--------------------------------------	---------------

## Command Default

None.

## Command Modes

Privileged EXEC (#)

## Command History

Release	Modification
8.3(1)	This command was modified. Added the <b>query</b> keyword. This command has changed from <b>clear analytics</b> “ <i>query_string</i> ” to <b>clear analytics query</b> “ <i>query_string</i> ”.
8.2(1)	This command was introduced.

## Usage Guidelines



### Note

- The “*query\_string*” must have the format “*select all from <view-name>*”.
- You can clear the flow metrics without installing a push query.

Clear resets metrics of a view instance, whereas purge deletes specific view instance and its associated flow metrics momentarily. After clearing the database, the database will continue to collect flow metrics for the specified “*query\_string*”. When you clear metrics of a view instance, the values of the metrics are reset to default. The “*query\_string*” is a query syntax where you can specify query semantics such as **select**, **table**, **limit**, and so on. For example, “select all from fc-scsi.port.” For more information, see the “[Cisco MDS 9000 Series NX-OS SAN Analytics and Telemetry Configuration Guide](#).”

Using a combination of sort and limit in the “*query\_string*” allows you to display the first record or the last record of the flow metrics that is used for sorting. This data is useful in determining the port that has the most IO transactions, port that is using the least read and write IO bandwidth, and so on.

## Examples

These examples show how to clear flow metrics:

1. This example shows an output before clearing the flow metrics:

```
switch# show analytics query 'select port,initiator_id, target_id,lun,
total_read_io_count,total_write_io_count,read_io_rate,
write_io_rate from fc-scsi.scsi_initiator_itl_flow where initiator_id=0xe80001'
{ "values": {
  "1": {
    "port": "fc1/8",
```

```

        "initiator_id": "0xe80001",
        "target_id": "0xe800a1",
        "lun": "0000-0000-0000-0000",
        "total_read_io_count": "0",
        "total_write_io_count": "1139010960",
        "read_io_rate": "0",
        "write_io_rate": "7071",
        "sampling_start_time": "1528535447",
        "sampling_end_time": "1528697495"
    }
}

```

2. This example shows how to clear the flow metrics of an initiator ITL flow view type:

```

switch# clear analytics query 'select port,initiator_id,
target_id,lun,total_read_io_count,total_write_io_count,read_io_rate,
write_io_rate from fc-scsi.scsi_initiator_itl_flow where initiator_id=0xe80001'

```

3. This example shows an output after clearing the flow metrics:

```

switch# show analytics query 'select port,initiator_id, target_id,lun,
total_read_io_count,total_write_io_count,read_io_rate, write_io_rate from
fc-scsi.scsi_initiator_itl_flow where initiator_id=0xe80001'
{ "values": {
    "1": {
        "port": "fc1/8",
        "initiator_id": "0xe80001",
        "target_id": "0xe800a1",
        "lun": "0000-0000-0000-0000",
        "total_read_io_count": "0",
        "total_write_io_count": "0",
        "read_io_rate": "0",
        "write_io_rate": "0",
        "sampling_start_time": "0",
        "sampling_end_time": "0"
    }
}
}

```

#### Related Commands

Command	Description
<b>analytics query</b>	Installs a push analytics query.
<b>feature analytics</b>	Enables the SAN Analytics feature on a switch.
<b>purge analytics</b>	Deletes a view instance and its associated flow metrics.
<b>show analytics port-sampling</b>	Displays the SAN analytics port sampling information.
<b>show analytics query</b>	Displays the SAN analytics query information.
<b>show analytics type</b>	Displays the SAN analytics type.
<b>ShowAnalytics</b>	Displays the SAN analytics information in a tabular format.

# clear arp-cache

To clear the ARP cache table entries, use the **clear arp-cache** command in EXEC mode.

**clear arp-cache**

**Syntax Description** This command has no arguments or keywords.

**Command Default** The ARP table is empty by default.

**Command Modes** EXEC mode

Command History	Release	Modification
	1.0(2)	This command was introduced.

**Examples** The following example shows how to clear the arp-cache table entries:

```
switch# clear arp-cache
```

Related Commands	Command	Description
	<b>show arp</b>	Displays Address Resolution Protocol (ARP) entries.

## clear asic-cnt

To clear ASCII counters, use the **clear asic-cnt** command in EXEC mode.

**clear asic-cnt** {all | device-id | list-all-devices}

Syntax Description		
	<i>all</i>	Clears the counter for all device types.
	device-id	Clears the counter for device type device ID.
	list-all-devices	Lists all device types.

**Command Default** None

**Command Modes** EXEC mode

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

### Examples

The following example shows how to clear all counters on the module:

```
switch(config)# attach module 4
Attaching to module 4 ...
To exit type 'exit', to abort type '$.'
Last login: Mon Jan  5 13:04:02 2009 from 127.1.1.8 on pts/0
Linux lc04 2.6.10_mvl401-pc_target #1 Tue Dec 16 22:58:32 PST 2008 ppc GNU/Linux
module-4# clear asic-cnt all
Cleared counters for asic type id = 63, name = 'Stratosphere'
Cleared counters for asic type id = 46, name = 'transceiver'
Cleared counters for asic type id = 57, name = 'Skyline-asic'
Cleared counters for asic type id = 60, name = 'Skyline-ni'
Cleared counters for asic type id = 59, name = 'Skyline-xbar'
Cleared counters for asic type id = 58, name = 'Skyline-fwd'
Cleared counters for asic type id = 52, name = 'Tuscany-asic'
Cleared counters for asic type id = 54, name = 'Tuscany-xbar'
Cleared counters for asic type id = 55, name = 'Tuscany-que'
Cleared counters for asic type id = 53, name = 'Tuscany-fwd'
Cleared counters for asic type id = 73, name = 'Fwd-spi-group'
Cleared counters for asic type id = 74, name = 'Fwd-parser'
Cleared counters for asic type id = 10, name = 'eobc'
Cleared counters for asic type id = 1, name = 'X-Bus IO'
Cleared counters for asic type id = 25, name = 'Power Mngmnt Epld'
module-4#
```

The following example shows how to clear the specific counter:

```
module-4# clear asic-cnt device-id 1
Clearing counters for devId = 1, name = 'X-Bus IO'
module-4#
```

The following example shows how to list all device IDs:



```
module-4# clear asic-cnt list-all-devices
  Asic Name |          Device ID
  Stratosphere |          63
  transceiver |          46
  Skyline-asic |          57
  Skyline-ni |          60
  Skyline-xbar |          59
  Skyline-fwd |          58
  Tuscany-asic |          52
  Tuscany-xbar |          54
  Tuscany-que |          55
  Tuscany-fwd |          53
  Fwd-spi-group |          73
  Fwd-parser |          74
  eobc |          10
  X-Bus IO |          1
  Power Mngmnt Epld |          25
module-4#
```

**Related Commands**

Command	Description
<b>show arp</b>	Displays Address Resolution Protocol (ARP) entries.

# clear callhome session

To clear Call Home Cisco Fabric Services (CFS) session configuration and locks, use the **clear callhome session** command.

**clear callhome session**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to clear the Call Home session configuration and locks:

```
switch# clear callhome session
```

Related Commands	Command	Description
	<b>show callhome</b>	Displays Call Home information.

# clear cdp

To delete global or interface-specific CDP configurations, use the **clear cdp** command.

```
clear cdp {counters | table} [interface {gigabitethernet slot/port | mgmt 0}]
```

Syntax Description	Parameter	Description
	<b>counters</b>	Enables CDP on globally or on a per-interface basis.
	<b>table</b>	Specifies the EXEC command to be executed.
	<b>interface</b>	(Optional) Displays CDP parameters for an interface.
	<b>gigabitethernet</b>	Specifies the Gigabit Ethernet interface.
	<i>slot/port</i>	Specifies the slot number and port number separated by a slash (/).
	<b>mgmt 0</b>	Specifies the Ethernet management interface.

**Command Default** None

**Command Modes** Configuration mode

Command History	Release	Modification
	1.1(1)	This command was introduced.

**Usage Guidelines** You can use this command for a specified interface or for all interfaces (management and Gigabit Ethernet interfaces).

**Examples** The following example clears CDP traffic counters for all interfaces:

```
switch# clear cdp counters
switch#
```

The following example clears CDP entries for the specified Gigabit Ethernet interface:

```
switch# clear cdp table interface gigabitethernet 4/1
switch#
```

Related Commands	Command	Description
	<b>cdp</b>	Configures global or interface-specific CDP settings and parameters.
	<b>show cdp</b>	Displays configured CDP settings and parameters.

# clear cores

To clear all core dumps for the switch, use the **clear cores** command in EXEC mode.

**clear cores**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	1.0(2)	This command was introduced.

**Usage Guidelines** The system software keeps the last few cores per service and per slot and clears all other cores present on the active supervisor module.

**Examples** The following example shows how to clear all core dumps for the switch:

```
switch# clear cores
```

Related Commands	Command	Description
	<b>show cores</b>	Displays core dumps that have been made.

## clear counters (EXEC mode)

To clear the interface counters, use the **clear counters** command in EXEC mode.

**clear counters** {**all** | **interface** {**fc** | **mgmt** | **port-channel** | **sup-fc** | **vsan**} **number**}

### Syntax Description

<b>all</b>	Clears all interface counters.
<b>interface</b>	Clears interface counters for the specified interface.
<i>number</i>	The number of the slot or interface being cleared.

### Command Default

None

### Command Modes

EXEC mode

### Command History

Release	Modification
1.0(2)	This command was introduced.

### Usage Guidelines

The following table lists the number ranges interface types:

Keyword	Interface Type	Number
<b>fc</b>	Fibre Channel	1– 2 or 1– 9 (slot)
<b>gigabitethernet</b>	Gigabit Ethernet	1– 2 or 1– 9 (slot)
<b>mgmt</b>	Management	0–0 (management interface)
<b>port-channel</b>	PortChannel	1–128 (PortChannel)
<b>sup-fc</b>	Inband	0–0 (Inband interface)
<b>vsan</b>	VSAN	1– 4093 (VSAN ID)

This command clears counters displayed in the **show interface** command output.

### Examples

The following example shows how to clear counters for a VSAN interface:

```
switch# clear counters interface vsan 13
```

### Related Commands

Command	Description
<b>show interface</b>	Displays interface information.

## clear counters (SAN extension N port configuration mode)

To clear SAN extension tuner N port counters, use the **clear counters** command.

**clear counters**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** SAN extension N port configuration submode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** None.

**Examples** The following example shows how to clear SAN extension tuner N port counters:

```
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)# clear counters
```

Related Commands	Command	Description
	<b>show san-ext-tuner</b>	Displays SAN extension tuner information.

# clear counters interface

To clear the aggregate counters for the interface, use the **clear counters** interface command.

**clear counters interface interface snmp**

Syntax Description	Parameter	Description
	<b>interface</b>	Specifies the interface.
	<b>snmp</b>	Clears SNMP interface counters.

**Command Default** None

**Command Modes** Configuration mode

Command History	Release	Modification
	6.2(1)	Added the snmp option to the syntax description.

**Usage Guidelines** This command clears counter displayed in the **show interface** command output.

**Examples** The following example shows how to clear the aggregate counters for the interface:

```
switch(config)# clear counters interface e2/1 snmp
switch(config)#
```

Related Commands	Command	Description
	<b>show interface</b>	Displays interface information.

# clear counters interface all

To clear all interface counters, use the **clear counters interface all** command.

**clear counters interface all snmp**

<b>Syntax Description</b>	<b>snmp</b> Clears SNMP interface counters.
---------------------------	---

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Configuration mode
----------------------	--------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.2(1)	Added the snmp option to the syntax description.

<b>Usage Guidelines</b>	This command clears counter displayed in the <b>show interface</b> command output.
-------------------------	--

<b>Examples</b>	The following example shows how to clear all SNMP interface counters:
-----------------	---

```
switch(config)# clear counters interface all snmp
switch(config)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show interface</b>	Displays interface information.



# clear crypto ike domain ipsec sa

To clear the IKE tunnels for IPsec, use the **clear crypto ike domain ipsec sa** command.

```
clear crypto ike domain ipsec sa [tunnel-id]
```

<b>Syntax Description</b>	<i>tunnel-id</i> (Optional) The tunnel ID. The range is 1 to 2147483647.
---------------------------	--

<b>Command Default</b>	None
------------------------	------

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

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	2.0(x)	This command was introduced.

**Usage Guidelines** To use this command, the IKE protocol must be enabled using the **crypto ike enable** command. If the tunnel ID is not specified, all IKE tunnels are cleared.



**Note** The crypto ikes feature is not supported on the Cisco MDS 9148 and Cisco MDS 9148S, and Cisco MDS 9396S Switches.

## Examples

The following example shows how to clear all IKE tunnels:

```
switch# clear crypto ike domain ipsec sa
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>crypto ike domain ipsec</b>	Configures IKE information.
	<b>crypto ike enable</b>	Enables the IKE protocol.
	<b>show crypto ike domain ipsec</b>	Displays IKE information for the IPsec domain.

## clear crypto sa domain ipsec

To clear the security associations for IPsec, use the **clear crypto sa domain ipsec** command.

**clear crypto sa domain ipsec interface gigabitethernet slot / port {inbound | outbound} sa sa-index**

Syntax Description	Parameter	Description
	<b>interface gigabitethernet slot/port</b>	Specifies the Gigabit Ethernet interface.
	<b>inbound</b>	Specifies clearing inbound associations.
	<b>outbound</b>	Specifies clearing output associations.
	<b>sa sa-index</b>	Specifies the security association index. The range is 1 to 2147483647.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** To clear security associations, IPsec must be enabled using the **crypto ipsec enable** command. After clearing the security associations for IPsec, ensure that you wait for at least 10 seconds before you run the **system switchover** command.

**Examples** The following example shows how to clear a security association for an interface:

```
switch# clear crypto sa domain ipsec interface gigabitethernet 1/2 inbound sa 1
```

Related Commands	Command	Description
	<b>show crypto sad domain ipsec</b>	Displays IPsec security association database information.

# clear debug-logfile

To delete the debug log file, use the **clear debug-logfile** command in EXEC mode.

**clear debug-logfile** *filename*

## Syntax Description

filename	The name (restricted to 80 characters) of the log file to be cleared. The maximum size of the log file is 1024 bytes.
----------	---

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
1.0(2)	This command was introduced.

## Examples

The following example shows how to clear the debug logfile:

```
switch# clear debug-logfile debuglog
```

## Related Commands

Command	Description
<b>show debug logfile</b>	Displays the log file contents.

# clear device-alias

To clear device alias information, use the **clear device-alias** command.

**clear device-alias** {**database** | **session** | **statistics**}

Syntax Description	Parameter	Description
	<b>database</b>	Clears the device alias database.
	<b>session</b>	Clears session information.
	<b>statistics</b>	Clears device alias statistics.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** None.

**Examples** The following example shows how to clear the device alias session:

```
switch# clear device-alias session
```

Related Commands	Command	Description
	<b>show device-alias</b>	Displays device alias database information.

# clear dpvm

To clear Dynamic Port VSAN Membership (DPVM) information, use the **clear dpvm** command.

```
clear dpvm {auto-learn [pwwn pwwn-id] | session}
```

Syntax Description	Parameter	Description
	<b>auto-learn</b>	Clears automatically learned (autolearn) DPVM entries.
	<b>pwwn</b> <i>pwwn-id</i>	(Optional) Specifies the pWWN ID. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> , where <i>h</i> is a hexadecimal number.
	<b>session</b>	Clears the DPVM session and locks.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** To use this command, DPVM must be enabled using the **dpvm enable** command.

## Examples

The following example shows how to clear a single autolearned entry:

```
switch# clear dpvm auto-learn pwwn 21:00:00:20:37:9c:48:e5
```

The following example shows how to clear all autolearn entries:

```
switch# clear dpvm auto-learn
```

The following example shows how to clear a session:

```
switch# clear dpvm session
```

Related Commands	Command	Description
	dpvm enable	Enables DPVM.
	show dpvm	Displays DPVM database information.

# clear dpvm merge statistics

To clear the DPVM merge statistics, use the clear dpvm merge statistics command.

**clear dpvm merge statistics**

**Syntax Description** This command has no arguments or keywords.

**Command Default** 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 clear the DPVM merge statistics:

```
switch#(config)# clear dpvm merge statistics
switch#(config)#
```

Related Commands	Command	Description
	show dpvm merge statistics	Displays the DPVM merge statistics.

## clear fabric-binding statistics

To clear fabric binding statistics in a FICON enabled VSAN, use the **clear fabric-binding statistics** command in EXEC mode.

**clear fabric-binding statistics vsan vsan-id**

### Syntax Description

<b>vsan vsan-id</b>	Specifies the FICON-enabled VSAN. The ID of the VSAN is from 1 to 4093.
---------------------	---

### Command Default

None

### Command Modes

EXEC mode

### Command History

Release	Modification
1.1(1)	This command was introduced.

### Usage Guidelines

None

### Examples

The following example clears existing fabric binding statistics in VSAN 1:

```
switch# clear
fabric-binding statistics vsan 1
```

### Related Commands

Command	Description
<b>show fabric-binding efmd statistics</b>	Displays existing fabric binding statistics information.

# clear fcanalyzer

To clear the entire list of configured hosts for remote capture, use the **clear fcanalyzer** command in EXEC mode.

**clear fcanalyzer**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	1.0(2)	This command was introduced.

**Usage Guidelines** This command clears only the list of configured hosts. Existing connections are not terminated.

**Examples** The following example shows how to clear the entire list of configured hosts for remote capture:

```
switch# clear fcanalyzer
```

Related Commands	Command	Description
	<b>show fcanalyzer</b>	Displays the list of hosts configured for a remote capture.



## clear fcflow stats

To clear Fibre Channel flow statistics, use the **clear fcflow stats** command in EXEC mode.

**clear fcflow stats** [**aggregated**] **module** **module-number** **index** **flow-number**

Syntax Description	
<b>aggregated</b>	(Optional) Clears the Fibre Channel flow aggregated statistics.
<b>module</b>	Clears the statistics for a specified module.
<i>module-number</i>	Specifies the module number.
<b>index</b>	Clears the Fibre Channel flow counters for a specified flow index.
<i>flow-number</i>	Specifies the flow index number.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	1.0(2)	This command was introduced.

### Examples

The following example shows how to clear aggregated Fibre Channel flow statistics for flow index 1 of module 2:

```
switch(config)# clear fcflow stats aggregated module 2 index 1
```

Related Commands	Command	Description
	<b>show fcflow</b>	Displays the fcflow statistics.

## clear fcs statistics

To clear the name server statistics, use the **clear fcs statistics** command in EXEC mode.

**clear fcs statistics vsan** *vsan-id*

<b>Syntax Description</b>	<b>vsan</b> <i>vsan-id</i>	Clears FCS statistics for a specified VSAN ranging from 1 to 4093.
---------------------------	-------------------------------	--

**Command Default** None

**Command Modes** EXEC

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0(3)	This command was introduced.

### Examples

The following example shows how to clear the name server statistics:

```
switch# show fcs statistics
Name server statistics for vsan 1
=====
registration requests received = 0
deregistration requests received = 0
queries received = 23
queries sent = 27
reject responses sent = 23
RSCNs received = 0
RSCNs sent = 0
switch# clear fcs statistics vsan 1
switch# show fcs statistics
Name server statistics for vsan 1
=====
registration requests received = 0
deregistration requests received = 0
queries received = 0
queries sent = 0
reject responses sent = 0
RSCNs received = 0
RSCNs sent = 0
switch#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show fcs statistics</b>	Displays the name server statistics.

## clear fc-redirect config

To delete a FC-Redirect configuration on a switch, use the clear fc-redirect config command.

```
clear fc-redirect config vt vt-pwwn [local-switch-only]
```

Syntax Description	vt vt-pwwn	Specify the VT pWWN for the configuration to be deleted.
	local-switch-only	(Optional)

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.2(1)	

**Usage Guidelines** This command is used as a last option if deleting the configuration through the application is not possible. This command will delete any configuration (including active configurations) on FC-Redirect created by applications such as SME/DMM that may lead to data loss. When you enter this command, the host server communicates to the storage array directly by passing the individual Intelligent Service Applications causing data corruption. Use this command as a last option to clear any leftover configuration that cannot be deleted from the application (DMM/SME). Use this command while decommissioning the switch.

**Examples** The following example clears the FC-Redirect configuration on the switch:

```
switch# clear fc-redirect config vt 2f:ea:00:05:30:00:71:64
Deleting a configuration MAY result in DATA CORRUPTION.
Do you want to continue? (y/n) [n] y
```

Related Commands	Command	Description
		show fc-redirect active-configs

# clear fc-redirect decommission-switch

To remove all existing FC-Redirect configurations and disable any further FC-Redirect configurations on a switch, use the clear fc-redirect decommission-switch command.

## clear fc-redirect decommission-switch

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.2(1)	This command was introduced.

**Usage Guidelines** This command is used after write erase. The command is also used to move a switch from a fabric with FC-Redirect configurations to another fabric. After using this command, disconnect the switch from the fabric and reboot the switch before using it in another fabric.

## Examples

The following example shows how to decommission FC-Redirect on a switch:

```
switch# clear fc-redirect decommission-switch
This Command removes any FC-Redirect configuration and disables
FC-Redirect on this switch. Its usage is generally recommended in
the following cases:
  1) After 'write erase'
  2) When removing the switch from the fabric.
If NOT for the above, Decommissioning a switch MAY result in
DATA CORRUPTION.

Do you want to continue? (Yes/No) [No] Yes

Please check the following before proceeding further:
  1) Hosts / targets connected locally are NOT involved in any
    FC-Redirect configuration.
  2) No application running on this switch created an FC-Redirect
    Configuration
Please use the command 'show fc-redirect active-configs' to check
these.

Do you want to continue? (Yes/No) [No] Yes
switch#
```

## Related Commands

Command	Description
show fc-redirect active-configs	Displays all active configurations on a switch.

## clear fcs statistics

To clear the fabric configuration server statistics, use the **clear fcs statistics** command in EXEC mode.

**clear fcs statistics vsan vsan-id**

<b>Syntax Description</b>	<b>vsan</b> <i>vsan-id</i>	FCS statistics are to be cleared for a specified VSAN ranging from 1 to 4093.
---------------------------	-------------------------------	---

**Command Default** None

**Command Modes** EXEC mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0(2)	This command was introduced.

### Examples

The following example shows how to clear the fabric configuration server statistics for VSAN 10:

```
switch# clear fcs statistics vsan 10
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show fcs statistics</b>	Displays the fabric configuration server statistics information.

# clear fctimer session

To clear fctimer Cisco Fabric Services (CFS) session configuration and locks, use the **clear fctimer session** command.

**clear fctimer session**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to clear fctimer session:

```
switch# clear fctimer session
```

Related Commands	Command	Description
	<b>show fctimer</b>	Displays fctimer information.

# clear ficon

Use the **clear ficon** command in EXEC mode to clear the FICON information for the specified VSAN.

**clear ficon vsan** *vsan-id* [**allegiance** | **timestamp**]

Syntax Description	Parameter	Description
	<b>vsan</b> <i>vsan-id</i>	Specifies the FICON-enabled VSAN. The ID of the VSAN is from 1 to 4093.
	<b>allegiance</b>	(Optional) Clears the FICON device allegiance.
	<b>timestamp</b>	(Optional) Clears the FICON VSAN specific timestamp.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	1.3(1)	This command was introduced.

**Usage Guidelines** The **clear ficon vsan** *vsan-id* **allegiance** command terminates the currently executing session.

**Examples** The following example clears the current device allegiance for VSAN 1:

```
switch# clear ficon vsan 1 allegiance
```

The following example clears the VSAN clock for VSAN 20:

```
switch# clear ficon vsan 20 timestamp
```

Related Commands	Command	Description
	<b>show ficon</b>	Displays configured FICON details.

## clear fspf counters

To clear the Fabric Shortest Path First statistics, use the **clear fspf counters** command in EXEC mode.

**clear fspf counters vsan vsan-id [interface type]**

Syntax Description	Parameter	Description
	<b>vsan</b>	Indicates that the counters are to be cleared for a VSAN.
	<i>vsan-id</i>	The ID of the VSAN is from 1 to 4093.
	<b>interface type</b>	(Optional). The counters are to be cleared for an interface. The interface types are fc for Fibre Channel, and port-channel for PortChannel.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	1.0(2)	This command was introduced.

**Usage Guidelines** If the interface is not specified, then all of the counters of a VSAN are cleared. If the interface is specified, then the counters of the specific interface are cleared.

### Examples

The following example clears the FSPF t statistics on VSAN 1:

```
switch# clear fspf counters vsan 1
```

The following example clears FSPF statistics specific to the Fibre Channel interface in VSAN 1, Slot 9 Port 32:

```
switch# clear fspf counters vsan 1 interface fc 9/32
```

Related Commands	Command	Description
	<b>show fspf</b>	Displays global FSPF information for a specific VSAN.



# clear install failure-reason

To remove the upgrade failure reason log created during in-service software upgrades (ISSUs) on the Cisco MDS 9124 Fabric Switch, use the clear install failure-reason command.



**Caution** If you remove the upgrade failure reason log, then you will not have any information to help you debug in the event of an ISSU failure.

## clear install failure-reason

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes**  
EXEC mode

Command History	Release	Modification
	3.1(1)	This command was introduced.

**Usage Guidelines** This command is supported only on the Cisco MDS 9124 Fabric Switch.

**Examples** The following example removes all upgrade failure reason logs on a Cisco MDS 9124 Fabric Switch:

```
switch# clear install failure-reason
```

Related Commands	Command	Description
	<b>show install all failure-reason</b>	Displays the reasons why an upgrade cannot proceed in the event of an ISSU failure.
	<b>show install all status</b>	Displays the status of an ISSU on a Cisco MDS 9124 Fabric Switch.

# clear ip access-list counters

To clear IP access list counters, use the **clear ip access-list counters** command in EXEC mode.

**clear ip access-list counters list-name**

## Syntax Description

<i>list-name</i>	Specifies the IP access list name (maximum 64 characters).
------------------	--

## Command Default

None

## Command Modes

EXEC

## Command History

Release	Modification
1.1(1)	This command was introduced.

## Examples

The following example clears the counters for an IP access list:

```
switch# clear ip access-list counters adminlist
```

## Related Commands

Command	Description
<b>show ip access-list</b>	Displays IP access list information.

# clear ips arp

To clear ARP caches, use the **clear ips arp** command in EXEC mode.

**clear ips arp** {**address ip-address** | **interface gigabitethernet module-number**}

Syntax Description	Parameter	Description
	<b>address</b>	Clears fcfow aggregated statistics.
	<i>ip-address</i>	Enters the peer IP address.
	<b>interface gigabitethernet</b>	Specifies the Gigabit Ethernet interface.
	<i>module-number</i>	Specifies the slot and port of the Gigabit Ethernet interface.

**Command Default** None

**Command Modes**

EXEC

**Command History**

Release	Modification
1.1(1)	This command was introduced.

**Examples**

The ARP cache can be cleared in two ways: clearing just one entry or clearing all entries in the ARP cache.

The following example clears one ARP cache entry:

```
switch# clear ips arp address 10.2.2.2 interface gigabitethernet 8/7
arp clear successful
```

The following example clears all ARP cache entries:

```
switch# clear ips arp interface gigabitethernet 8/7
arp clear successful
```

## clear ips stats

To clear IP storage statistics, use the **clear ips stats** command in EXEC mode.

```
clear ips stats {all [interface gigabitethernet slot/port] | buffer interface gigabitethernet slot/port
| dma-bridge interface gigabitethernet slot/port | icmp interface gigabitethernet slot/port | ip
interface gigabitethernet slot/port | ipv6 traffic interface gigabitethernet slot/port | mac interface
gigabitethernet slot/port | tcp interface gigabitethernet slot/port}
```

### Syntax Description

<b>all</b>	Clears all IPS statistics.
<b>interface gigabitethernet</b>	(Optional) Clears the Gigabit Ethernet interface.
<i>slot/port</i>	Specifies the slot and port numbers.
<b>buffer</b>	Clears IP storage buffer information.
<b>dma-bridge</b>	Clears direct memory access (DMA) statistics.
<b>icmp</b>	Clears ICMP statistics.
<b>ip</b>	Clears IP statistics.
<b>ipv6</b>	Clears IPv6 statistics.
<b>mac</b>	Clears Ethernet MAC statistics.
<b>tcp</b>	Clears TCP statistics.

### Command Default

None

### Command Modes

EXEC mode

### Command History

Release	Modification
3.0(1)	This command was introduced.

### Examples

The following example clears all IPS statistics on the specified interface:

```
switch# clear ips all interface gigabitethernet 8/7
switch#
```

## clear ips stats fabric interface

To clear the statistics for a given iSCSI or FCIP interface on a Cisco MDS 9000 18/4-Port Multi Service Module IPS linecard, use the clear ips stats fabric interface command.

**clear ips stats fabric interface** [**iscsi slot/port** | **fcip N**]

Syntax Description		
<b>iscsi slot/port</b>	(Optional) Clears Data Path Processor (DPP) fabric statistics for the iSCSI interface.	
<b>fcip N</b>	(Optional) Clears DPP fabric statistics for the FCIP interface.	

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.2(1)	This command was introduced.

**Usage Guidelines** None.

**Examples** The following example clears the statistics for a given iSCSI or FCIP interface:

```
switch# clear ips stats fabric interface fcip ?
<1-255>  Fcip interface number
switch# clear ips stats fabric interface fcip 1
switch#
switch# clear ips stats fabric interface iscsi 1/1
switch#
```

Related Commands	Command	Description
	<b>show ips stats fabric interface</b>	Displays the fabric-related statistics for the given iSCSI or FCIP interface on a Cisco MDS 9000 18/4-Port Multi Service Module IPS linecard.

## clear ipv6 access-list

To clear IPv6 access control list statistics, use the **clear ipv6 access-list** command.

**clear ipv6 access-list** [*list-name*]

<b>Syntax Description</b>	<b>access-list</b>	Displays a summary of access control lists (ACLs).
	<i>list-name</i>	(Optional) Specifies the name of the ACL. The maximum size is 64.

**Command Default** None

**Command Modes** EXEC mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	3.1(0)	This command was introduced.

**Usage Guidelines** You can use the **clear ipv6 access-list** command to clear IPv6-ACL statistics.

**Examples** The following example displays information about an IPv6-ACL:

```
switch# clear ipv6 access-list testlist
switch#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>ipv6 access-list</b>	Configures an IPv6-ACL.
	<b>show ipv6</b>	Displays IPv6 configuration information.

# clear ipv6 neighbors

To clear the IPv6 neighbor cache table, use the **clear ipv6 neighbors** command.

**clear ipv6 neighbors**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.1(0)	This command was introduced.

**Usage Guidelines** None.

**Examples** The following example flushes the IPv6 neighbor cache table:

```
switch# clear ipv6 neighbors
switch#
```

Related Commands	Command	Description
	<b>ipv6 nd</b>	Configures IPv6 neighbor discovery commands.
	<b>show ipv6 neighbors</b>	Displays IPv6 neighbors configuration information.

# clear islb session

To clear a pending iSLB configuration, use the **clear islb session** command.

**clear islb session**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.0(1)	This command was introduced.

**Usage Guidelines** You can use the **clear islb session** command to clear a pending iSLB configuration. This command can be executed from any switch by a user with admin privileges.

**Examples** The following example clears a pending iSLB configuration:

```
switch# clear
      islb session
```

Related Commands	Command	Description
	islb abort	Discards a pending iSLB configuration.
	<b>show islb cfs-session status</b>	Displays iSLB session details.
	show islb pending	Displays an iSLB pending configuration.
	show islb pending-diff	Displays iSLB pending configuration differences.
	show islb session	Displays iSLB session information.
	show islb status	Displays iSLB CFS status.
	show islb vrrp	Displays iSBL VRRP load balancing information.



# clear ivr fcdomain database

To clear the IVR fcdomain database, use the **clear ivr fcdomain database** command in EXEC mode.

**clear ivr fcdomain database**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.1(2)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example clears all IVR fcdomain database information:

```
switch# clear ivr fcdomain database
```

Related Commands	Command	Description
	<b>show ivr fcdomain database</b>	Displays IVR fcdomain database entry information.

# clear ivr service-group database

To clear an inter-VSAN routing (IVR) service group database, use the **clear ivr service-group database** command.

**clear ivr service-group database**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.0(1)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example clears the **ivr service-group database**:

```
switch# clear ivr service-group database
```

Related Commands	Command	Description
	<b>show ivr service-group database</b>	Displays an IVR service group database.

# clear ivr zone database

To clear the Inter-VSAN Routing (IVR) zone database, use the **clear ivr zone database** command in EXEC mode.

**clear ivr zone database**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC

**Command History**

Release	Modification
1.3(1)	This command was introduced.

## Examples

The following example clears all configured IVR information:

```
switch# clear ivr zone database
```

# clear license

To uninstall a license, use the **clear license** command in EXEC mode.

**clear license filename**

Syntax Description	filename	Specifies the license file to be uninstalled.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	1.3(2)	This command was introduced.

## Examples

The following example clears a specific license:

```
switch# clear license Ficon.lic
Clearing license Ficon.lic:
SERVER this_host ANY
VENDOR cisco
# An example fports license
INCREMENT SAN_EXTN_OVER_IP cisco 1.000 permanent 1 HOSTID=VDH=ABCD \
  NOTICE=<LicFileID>san_extn2.lic</LicFileID><LicLineID>1</LicLineID> \
  SIGN=67CB2A8CCAC2

Do you want to continue? (y/n) y
Clearing license ..done
switch#
```

Related Commands	Command	Description
	<b>show license</b>	Displays license information.

# clear line

To clear VTY sessions, use the **clear line** command in EXEC mode.

**clear line vty-name**

<b>Syntax Description</b>	<i>vtty-name</i> Specifies the VTY name (maximum 64 characters).
---------------------------	--

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC
----------------------	------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.2(1)	This command was introduced.

## Examples

The following example clears one ARP cache entry:

```
switch# clear line Aux  
arp clear successful
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	show line	Displays line information.

## clear logging

To delete the syslog information, use the **clear logging** command in EXEC mode.

```
clear logging { dropcount | logfile | nvram | onboard information [ module slot ] | session }
```

### Syntax Description

<b>logfile</b>	Clears log file messages.
<b>nvram</b>	Clears NVRAM logs.
<b>onboard information</b>	Clears onboard failure logging (OBFL) information. The types of information include <b>boot-uptime</b> , <b>cpu-hog</b> , <b>device-version</b> , <b>endtime</b> , <b>environmental-history</b> , <b>error-stats</b> , <b>exception-log</b> , <b>interrupt-stats</b> , <b>mem-leak</b> , <b>miscellaneous-error</b> , <b>module</b> , <b>obfl-history</b> , <b>obfl-log</b> , <b>rxwait</b> , <b>register-log</b> , <b>stack-trace</b> , <b>starttime</b> , <b>status</b> , <b>system-health</b> , <b>txwait</b> , and so on.
<b>module slot</b>	(Optional) Clears OBFL information for a specified module.
<b>session</b>	Clears a logging session.

### Command Default

None

### Command Modes

EXEC

### Command History

Release	Modification
9.2(1)	The TxWait OBFL file size was increased from 512 KB to 8 MB.
3.0(1)	Added the <b>onboard</b> , <b>module</b> and <b>session</b> options.
1.0(2)	This command was introduced.

### Usage Guidelines

From Cisco MDS NX-OS Release 9.2(1), the TxWait OBFL file size was increased from 512 KB to 8 MB.

If you are upgrading to Cisco MDS NX-OS Release 9.2(1) or later releases, ensure that you use the **clear logging onboard txwait** command after upgrading. Otherwise, the file will be automatically deleted and recreated at the new file size when the file size exceeds 512 KB.

If you are downgrading from Cisco MDS NX-OS Release 9.2(1) or later releases and the file size is more than 512 KB, you will be prompted with a message to use the **clear logging onboard txwait** command to delete the file after downgrading.

If you are downgrading from Cisco MDS NX-OS Release 9.2(1) or later releases and the file size is less than 512 KB, the file is automatically deleted and recreated at the 512 KB file size after downgrading.

Therefore, we recommend that you use the **clear logging onboard txwait** command immediately in the following two instances:

- After upgrading from any release prior to Cisco MDS NX-OS Release 9.2(1) to Release 9.2(1) or later

- After downgrading from Cisco MDS NX-OS Release 9.2(1) or later to any release prior to Cisco MDS NX-OS Release 9.2(1)

## Examples

The following example shows how to clear the debug log file:

```
switch# clear logging logfile
```

The following example shows how to clear the onboard system health log file:

```
switch# clear logging onboard system-health
!!!WARNING! This will clear the selected logging buffer!!
Do you want to continue? (y/n) [n]
```

## Related Commands

Command	Description
<b>show logging</b>	Displays logging information.

# clear ntp

To clear Network Time Protocol (NTP) information, use the **clear ntp** command in EXEC mode.

**clear ntp** {**session** | **statistics** {**all-peers** | **io** | **local** | **memory**}}

## Syntax Description

<b>session</b>	Clears NTP CFS session configuration and locks.
<b>statistics</b>	Clears NTP statistics.
<b>all-peers</b>	Clears I/O statistics for all peers.
<b>io</b>	Clears I/O statistics for I/O devices.
<b>local</b>	Clears I/O statistics for local devices.
<b>memory</b>	Clears I/O statistics for memory.

## Command Default

None

## 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 clear NTP statistics for all peers:

```
switch# clear ntp statistics all-peers
```

The following example shows how to clear NTP statistics for I/O devices:

```
switch# clear ntp statistics io
```

The following example shows how to clear NTP statistics for local devices:

```
switch# clear ntp statistics local
```

The following example shows how to clear NTP statistics for memory:

```
switch# clear ntp statistics memory
```

## Related Commands

Command	Description
<b>show ntp</b>	Displays the configured server and peer associations.



# clear port-security

To clear the port security information on the switch, use the **clear port-security** command in EXEC mode.

## Syntax Description

<b>database</b>	Clears the port security active configuration database.
<b>auto-learn</b>	Clears the auto-learn entries for a specified interface or VSAN.
<b>interface fc slot/port</b>	Clears entries for a specified interface.
<b>port-channel port</b>	Clears entries for a specified PortChannel. The range is 1 to 128.
<b>session</b>	Clears the port security CFS configuration session and locks.
<b>statistics</b>	Clears the port security counters.
<b>vsan vsan-id</b>	Clears entries for a specified VSAN ID. The range is 1 to 4093.

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
1.2(1)	This command was introduced.
2.0(x)	Added the <b>session</b> option.

## Usage Guidelines

The active database is read-only and **clear port-security database** command can be used when resolving conflicts.

## Examples

The following example clears all existing statistics from the port security database for a specified VSAN:

```
switch# clear port-security statistics vsan 1
```

The following example clears learnt entries in the active database for a specified interface within a VSAN:

```
switch# clear port-security database auto-learn interface fc1/1 vsan 1
```

The following example clears learnt entries in the active database up to for the entire VSAN:

```
switch# clear port-security database auto-learn vsan 1
```

## Related Commands

Command	Description
<b>show port-security</b>	Displays the configured port security information.

# clear processes log

To clear the log files on the switch, use the **clear processes log** command in EXEC mode.

**clear processes log** {**all** | **pid** **pid-number**}

Syntax Description	Parameter	Description
	<b>all</b>	Deletes all of the log files.
	<b>pid</b>	Deletes the log files of a specific process.
	<i>pid-number</i>	Specifies the process ID, which must be from 0 to 2147483647.

**Command Default** None

**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 clear all of the log files on the switch :

```
switch# clear processes log all
```

Related Commands	Command	Description
	<b>show processes</b>	Displays the detailed running or log information of processes or high availability applications.

# clear qos statistics

To clear the quality of services statistics counters, use the **clear qos statistics** command in EXEC mode.

**clear qos statistics**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Release	Modification
1.0(2)	This command was introduced.

**Usage Guidelines** None.

**Examples** The following example shows how to clear the quality of service counters:

```
switch# clear qos statistics
```

Related Commands	Command	Description
	<b>show qos statistics</b>	Displays the current QoS settings, along with a number of frames marked high priority.

## clear radius-server statistics

To clear radius server statistics, use the clear radius-server statistics command.

**clear radius-server statistics name**

<b>Syntax Description</b>	name Specifies the RADIUS name or IP address.
---------------------------	---

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Configuration mode
----------------------	--------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	NX-OS 4.2(1)	This command was introduced.

<b>Usage Guidelines</b>	None
-------------------------	------

**Examples** The following example shows how to clear the statistics sent or received from the specified server:

```
switch(config)# clear radius-server statistics 10.64.65.57
switch(config)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	tacacs+ enable	Enables TACACS+.

# clear radius session

To clear RADIUS Cisco Fabric Services (CFS) session configuration and locks, use the **clear radius session** command.

**clear radius session**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** None.

**Examples** The following example shows how to clear RADIUS session:

```
switch# clear radius session
```

Related Commands	Command	Description
	<b>show radius</b>	Displays RADIUS CFS distribution status and other details.

# clear rlir

To clear the Registered Link Incident Report (RLIR), use the **clear rlir** command in EXEC mode.

```
clear rlir {history | recent {interface fc slot-port | portnumber port-number} | statistics 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

<b>history</b>	Clears RLIR link incident history.
<b>recent</b>	Clears recent link incidents.
<b>interface fc slot/port</b>	Clears entries for a specified interface.
<b>bay port   ext port</b>	Clears entries for a specified interface on a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter.
<b>portnumber port-number</b>	Displays the port number for the link incidents.
<b>statistics</b>	Clears RLIR statistics.
<b>vsan vsan-id</b>	Specifies the VSAN ID for which the RLIR statistics are to be cleared.

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
1.3(1)	This command was introduced.
3.1(2)	Added the <b>interface bay   ext</b> option.

## Usage Guidelines

None.

## Examples

The following example clears all existing statistics for a specified VSAN:

```
switch# clear rlir statistics vsan 1
```

The following example clears the link incident history:

```
switch# clear rlir history
```

The following example clears recent RLIR information for a specified interface:

```
switch# clear rlr recent interface fc 1/2
```

The following example clears recent RLIR information for a specified port number:

```
switch# clear rlr recent portnumber 16
```

**Related Commands**

Command	Description
<b>show rscn</b>	Displays RSCN information.

# clear rmon alarms

To clear all the 32-bit remote monitoring (RMON) alarms from the running configuration, use the clear **rmon alarms** command.

**clear rmon alarms**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

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

**Usage Guidelines** You must save the changes to startup configuration to make them permanent.

**Examples** The following example clears all 32-bit RMON alarms from the running configuration:

```
switch# clear rmon alarms
switch#
```

Related Commands	Command	Description
	clear rmon all-alarms	Clears all the 32-bit and 64-bit RMON alarms.
	clear rmon hcalarms	Clears all the 64-bit RMON alarms.
	clear rmon log	Clears RMON log information.



# clear rmon all-alarms

To clear all the 32-bit and 64-bit RMON alarms from the running configuration, use the clear **rmon all-alarms** command.

**clear rmon all-alarms**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

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

**Usage Guidelines** You must save the changes to startup configuration to make them permanent.

**Examples** The following example clears all the 32-bit and 64-bit RMON alarms from the running configuration:

```
switch# clear rmon all-alarms
switch#
```

Related Commands	Command	Description
	clear rmon alarms	Clears all the 32-bit RMON alarms.
	clear rmon hcalarms	Clears all the 64-bit RMON alarms.
	clear rmon log	Clears RMON log information.

# clear rmon hcalarms

To clear all the 64-bit RMON alarms from the running configuration, use the clear **rmon hcalarms** command.

**clear rmon hcalarms**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

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

**Usage Guidelines** You must save the changes to startup configuration to make them permanent.

**Examples** The following example clears all the 64-bit RMON alarms from the running configuration:

```
switch# clear rmon hcalarms
switch#
```

Command	Description
clear rmon all-alarms	Clears all the 32-bit and 64-bit RMON alarms.
clear rmon alarms	Clears all the 32-bit RMON alarms.
clear rmon log	Clears RMON log information.

# clear rmon log

To clear all entries from RMON log on the switch, use the clear **rmon log** command.

**clear rmon log**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

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

**Usage Guidelines** None

**Examples** The following example clears all entries from RMON log on the switch:

```
switch# clear rmon log
switch#
```

Related Commands	Command	Description
	clear rmon alarm	Clears all the 32-bit RMON alarms.
	clear rmon hcalarms	Clears all the 64-bit RMON alarms.
	clear rmon all-alarms	Clears all the 32-bit and 64-bit RMON alarms.

# clear role session

To clear authentication role Cisco Fabric Services (CFS) session configuration and locks, use the **clear role session** command.

**clear role session**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to clear authentication role CFS session:

```
switch# clear role session
```

Related Commands	Command	Description
	<b>show role</b>	Displays role configuration information.

## clear rscn session vsan

To clear a Registered State Change Notification (RSCN) session for a specified VSAN, use the **clear rscn session vsan** command.

**clear rscn session vsan vsan-id**

<b>Syntax Description</b>	<i>vsan-id</i> Specifies a VSAN where the RSCN session should be cleared. The ID of the VSAN is from 1 to 4093.
---------------------------	---

**Command Default** None

**Command Modes** EXEC mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	3.0(1)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example clears an RSCN session on VSAN 1:

```
switch# clear rscn session vsan 1
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>rscn</b>	Configures an RSCN.
	<b>show rscn</b>	Displays RSCN information.

## clear rscn statistics

To clear the registered state change notification RSCN statistics for a specified VSAN, use the **clear rscn statistics** command in EXEC mode.

**clear rscn statistics vsan vsan-id**

### Syntax Description

<b>vsan</b>	The RSCN statistics are to be cleared for a VSAN.
<i>vsan-id</i>	The ID for the VSAN for which you want to clear RSCN statistics.

### Command Default

None

### 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 clear RSCN statistics for VSAN 1:

```
switch# clear rscn statistics 1
```

### Related Commands

Command	Description
<b>show rscn</b>	Displays RSCN information.

# clear santap module

To clear SANTap information, use the **clear santap module** command.

```
clear santap module slot-number {avt avt-pwwn [lun avt-lun] | itl target-pwwn host-pwwn | session session-id}
```

Syntax Description		
<i>slot-number</i>		Specifies the Storage Services Module (SSM) module number. The range is 1 through 13.
<b>avt</b> <i>avt-pwwn</i>		Removes the appliance virtual target (AVT) pWWN. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .
<b>lun</b> <i>avt-lun</i>		(Optional) Removes the appliance virtual target (AVT) LUN. The format is <i>0xhhhh [:hhhh [:hhhh [:hhhh ]]]</i> .
<b>itl</b> <i>target-pwwn host-pwwn</i>		Removes the SANTap Initiator Target LUN (ITL) triplet. The format of the <i>target-pwwn</i> and the <i>host-pwwn</i> is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .
<b>session</b> <i>session-id</i>		Removes a session. The range for session ID is 0 through 2147483647.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.0(1)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to remove a SANTap session:

```
switch# clear santap module 13 session 2020
```

Related Commands	Command	Description
	<b>santap module</b>	Configures the mapping between the Storage Services Module (SSM) and the VSAN where the appliance is configured.
	<b>show santap module</b>	Displays the configuration and statistics of the SANTap feature.

# clear scheduler logfile

To clear the command scheduler logfile, use the **clear scheduler logfile** command.

**clear scheduler logfile**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to clear the command scheduler logfile:

```
switch# clear scheduler logfile
```

Related Commands	Command	Description
	<b>show scheduler</b>	Displays command scheduler information.



# clear screen

To clear the terminal screen, use the **clear screen** command in EXEC mode.

**clear screen**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0(2)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to clear the terminal screen:

```
switch# clear screen
```

# clear scsi-flow statistics

To clear the SCSI flow statistics counters, use the **clear scsi-flow statistics** command.

**clear scsi-flow statistics flow-id flow-id**

## Syntax Description

<b>flow-id</b> <i>flow-id</i>	Configures the SCSI flow identification number.
----------------------------------	---

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
2.0(2)	This command was introduced.

## Usage Guidelines

None

## Examples

The following example shows how to clear the SCSI flow statistics counters for SCSI flow ID 3:

```
switch# clear sc
screen      scsi-flow
switch# clear scsi-flow ?
  statistics  Clear statistics counters
switch# clear scsi-flow statistics ?
  flow-id    Clear statistics for particular flow
switch# clear scsi-flow statistics flow-id ?
  <1-65535>  Enter the index of the SCSI flow
switch# clear scsi-flow statistics flow-id 3 ?
  <cr>      Carriage Return
switch# clear scsi-flow statistics flow-id 3
```

## Related Commands

Command	Description
<b>scsi-flow</b> <b>flow-id</b>	Configures the SCSI flow services.
<b>show scsi-flow</b>	Displays SCSI flow configuration and status.

# clear sdv

To clear specified SAN device virtualization parameters, use the **clear sdv** command in EXEC mode.

**clear sdv** {**database vsan vsan-id** | **session vsan vsan-id** | **statistics vsan vsan-id**}

Syntax Description	Parameter	Description
	<b>database</b>	Clears the SDV database.
	<b>vsan</b> <i>vsan-id</i>	Specifies the number of the VSAN. The range is 1 to 4093.
	<b>session</b>	Clears the SDV session.
	<b>statistics</b>	Clears the SDV statistics.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.1(2)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to clear SDV statistics:

```
switch# clear sdv statistics vsan 2
```

Related Commands	Command	Description
	<b>sdv enable</b>	Enables or disables SAN device virtualization.
	<b>show sdv statistics</b>	Displays SAN device virtualization statistics.

# clear snmp hostconfig

To clear all SNMP hosts from the running configuration, use the clear **snmp hostconfig** command.

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

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

**Usage Guidelines** You must save the changes to startup configuration to make them permanent:

**Examples** The following example clears the SNMP host list.

```
switch# clear snmp hostconfig
switch#
```

Command	Description
show snmp host	Displays the SNMP status and setting information.

# clear snmp counters

To clear all the SNMP counters protocol statistics, use the **clear snmp counters** command. The counters which are cleared with the help of this command are **SNMP packet counts**, **SNMP errors** and **SNMP protocol-specific counters**.

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Release	Modification
4.1(2)	This command was introduced.

**Usage Guidelines** You must save the changes to startup configuration to make them permanent:

## Examples

The following example clears the SNMP-related counters.

```
switch# clear snmp counters
switch#
```

Command	Description
show snmp	Displays the SNMP status and setting information.

# clear ssh hosts

To clear trusted SSH hosts, use the **clear ssh hosts** command in EXEC mode.

**clear ssh hosts**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	1.2(1)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to clear reset-reason information from NVRAM and volatile storage:

```
switch# clear ssh hosts
```

Related Commands	Command	Description
	<b>show ssh hosts</b>	Displays SSH host information.

## clear ssm-nvram santap module

To clear the SANTap configuration for a specific slot stored on the supervisor flash, use the clear ssm-nvram santap module command in the configuration mode.

**clear ssm-nvram santap module slot**

### Syntax Description

<b>slot</b>	Displays SANTap configuration for a module in the specified slot.
-------------	---

### Command Default

None

### Command Modes

EXEC mode

### Command History

Release	Modification
3.2(1)	This command was introduced.

### Usage Guidelines

None

### Examples

The following example shows how to clear the SANTap configuration for a slot 2:

```
switch# clear ssm-nvram santap module 2
```

### Related Commands

Command	Description
<b>ssm enable feature</b>	Enables the SANTap feature on the SSM.

## clear system reset-reason

To clear the reset-reason information stored in NVRAM and volatile persistent storage, use the **clear system reset-reason** command in EXEC mode.

**clear system reset-reason**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	1.3(2a)	This command was introduced.

**Usage Guidelines** Use this command as follows for these switches:

- In a Cisco MDS 9500 Series switch, this command clears the reset-reason information stored in NVRAM and volatile persistent storage in the active and standby supervisor modules.
- In a Cisco MDS 9200 Series switch, this command clears the reset-reason information stored in NVRAM and volatile persistent storage in the active supervisor module.

### Examples

The following example shows how to clear trusted SSH hosts:

```
switch# clear system reset-reason
```

Related Commands	Command	Description
	<b>show system reset-reason</b>	Displays system reset-reason information.



# clear tacacs+ session

To clear TACACS+ Cisco Fabric Services (CFS) session configuration and locks, use the **clear tacacs+ session** command.

**clear tacacs+ session**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** To use this command, TACACS+ must be enabled using the **tacacs+ enable** command.

**Examples** The following example shows how to clear the TACACS+ session:

```
switch# clear tacacs+ session
```

Related Commands	Command	Description
	<b>show tacacs+</b>	Displays TACACS+ CFS distribution status and other details.
	<b>tacacs+ enable</b>	Enables TACACS+.

# clear tacacs-server statistics

To clear TACACS server statistics, use the clear tacacs-server statistics command.

**clear tacacs-server statistics name**

<b>Syntax Description</b>	name Specifies the TACACS name or IP address.
---------------------------	---

<b>Command Default</b>	None
------------------------	------

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

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	NX-OS 4.2(1)	This command was introduced.

<b>Usage Guidelines</b>	None
-------------------------	------

**Examples** The following example shows how to clear the tacacs server statistics:

```
switch(config)# clear tacacs-server statistics 10.64.65.57
switch(config)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>tacacs+ enable</b>	Enables TACACS+.

# clear tlport alpa-cache

To clear the entire contents of the alpa-cache, use the **clear tlport alpa-cache** command in EXEC mode.

**clear tlport alpa-cache**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	NX-OS 5.0 and later releases	This command was deprecated.
	1.3(5)	This command was introduced.

**Usage Guidelines** None.

**Examples** The following example shows how to clear a TL port ALPA cache:

```
switch# clear tlport alpa-cache
```

Related Commands	Command	Description
	<b>show tlport alpa-cache</b>	Displays TL port alpa-cache information.

# clear user

To clear trusted SSH hosts, use the **clear user** command in EXEC mode.

**clear user** *username*

<b>Syntax Description</b>	<i>username</i> Specifies the user name to clear.
---------------------------	---

<b>Command Default</b>	None
------------------------	------

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

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.2(1)	This command was introduced.

<b>Usage Guidelines</b>	None
-------------------------	------

**Examples** The following example shows how to log out a specified user:

```
switch# clear user vsam
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	show users	Displays user information.

# clear vrrp

To clear all the software counters for the specified virtual router, use the **clear vrrp** command in EXEC mode.

```
clear vrrp statistics [ipv4 | ipv6] vr number interface {gigabitethernet slot/port | mgmt 0 | port-channel portchannel-id | vsan vsan-id}
```

## Syntax Description

<b>statistics</b>	Clears global VRRP statistics.
<b>ipv4</b>	(Optional) Clears IPv4 virtual router statistics.
<b>ipv6</b>	(Optional) Clears IPv6 virtual router statistics.
<b>vr number</b>	Clears specific virtual router statistics and specifies a VR number from 1 to 255.
<b>interface</b>	Clears an interface.
<b>gigabitethernet slot/port</b>	<b>Clears a specified Gigabit Ethernet interface.</b>
<b>mgmt 0</b>	Specifies the management interface.
<b>port-channel port-channel-id</b>	<b>Clears a specified</b> PortChannel interface. The ID of the PortChannel interface is from 1 to 128.
<b>vsan vsan-id</b>	<b>Clears a specified</b> VSAN. The ID of the VSAN is from 1 to 4093.

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
1.0(2)	This command was introduced.
3.0(1)	Added the <b>ipv4</b> and <b>ipv6</b> arguments.

## Usage Guidelines

None

## Examples

The following example shows how to clear all the software counters for virtual router 7 on VSAN 2:

```
switch# clear vrrp vr 7 interface vsan2
```

## Related Commands

Command	Description
<b>show vrrp</b>	Displays VRRP configuration information.

Command	Description
vrrp	Enables VRRP.

# clear zone

To clear all configured information in the zone server for a specified VSAN, use the **clear zone** command in EXEC mode.

```
clear zone {database | lock | statistics {lun-zoning | read-only-zoning}} vsan vsan-id
```

## Syntax Description

<b>database</b>	Clears zone server database information.
<b>lock</b>	Clears a zone server database lock.
<b>statistics</b>	Clears zone server statistics.
<b>lun-zoning</b>	Clears LUN-zoning related statistics.
<b>read-only-zoning</b>	Clears read-only zoning related statistics.
<b>vsan</b>	Clears zone information for a VSAN.
<i>vsan-id</i>	The ID of the VSAN is from 1 to 4093.

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
1.0(2)	This command was introduced.
3.0(1)	Added the <b>lock</b> option.

## Usage Guidelines

After issuing a **clear zone database** command, you need to explicitly issue the **copy running-config startup-config** to ensure that the running configuration is used when you next start the switch.

When you issue the **clear zone lock** command from a remote switch, only the lock on that remote switch is cleared. When you issue the **clear zone lock** command from the switch where the lock originated, all locks in the VSAN are cleared.



**Note** The recommended method to clear a session lock on a switch where the lock originated is by issuing the **no zone commit vsan** command.

## Examples

The following example shows how to clear all configured information in the zone server for VSAN 1:

```
switch# clear zone database vsan 1
```

---

**Related Commands**

Command	Description
<b>show zone</b>	Displays zone information for any configured interface.



# clear zone smart-zoning

To clear the smart zoning configuration, use the **clear zone smart-zoning** command.

Syntax Description	Parameter	Description
	fcalias name	Specifies auto-convert commands for an fcalias.
	fcalias-name	Specifies the fcalias name. The maximum size is 64 characters.
	vsan	Specifies the auto convert commands for a VSAN.
	vsan-id	Specifies the VSAN ID. The range is from 1 to 4093.
	zone name	Specifies the auto convert commands for a given zone.
	zone-name	Specifies the zone name. The maximum size is 64 characters.
	zoneset name	Specifies the auto convert commands for a zoneset.
	zoneset-name	Specifies the zoneset name. The maximum size is 64 characters.
	vsan	Specifies the VSAN.
	vsan-id	Specifies the VSAN ID. The range is from 1 to 4093.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	5.2(6)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example shows how to clear the smart zoning command for a VSAN:

```
switch(config)# clear zone smart-zoning vsan 1
WARNING: This command will clear smart zoning configs from the specified zone/zoneset/fcalias/vsan. Do you want to continue? (y/n) [n] y
switch(config)#
```

Related Commands	Command	Description
	<b>show zone</b>	Displays zone information for any configured interface.

# cli

To execute Cisco NX-OS commands verbosely in Tcl, use the **cli** command.

**cli** *arguments*

## Syntax Description

<i>arguments</i>	<i>arguments</i> takes the form of a single NX-OS command line to execute in a subprocess. This may include pipes and semicolon separated commands. Normal abbreviations of NX-OS keywords are allowed. Enclosing <i>arguments</i> in quotes (") is optional, but good style that adds clarity to code. The specified NX-OS command line must not cause any prompts for input from the user.
------------------	--

## Command Default

None.

## Command Modes

Interactive Tcl shell and Tcl script.

## Command History

Release	Modification
NX-OS 5.1(1)	This command was introduced.

## Usage Guidelines

The **cli** command prints the output of the specified command to the terminal and returns the output as a single string to Tcl. This would be the preferred behavior when using the interactive Tcl shell as it allows the user to verify the output of the executed NX-OS commands.

In a Tcl script, the **cli** or **clis** command is required to execute NX-OS commands.

In the Tcl shell interactive mode, the **cli** and **clis** commands are optional to execute NX-OS commands; commands that are not recognized by the Tcl shell are passed to the NX-OS shell for execution.

## Examples

The following example enables the locator LED for module 1 in an interactive Tcl shell:

```
switch# tclsh
switch-tcl# cli "locator-led module 1"
switch-tcl#
```

The following example shows how to quote a variable and use the pipe in an interactive Tcl shell. It creates a list of Supervisor-3 modules in the system and assigns it to the variable *sup*. *string trimright* removes the trailing blank line from the variable added by Tcl, but not from the terminal output:

```
switch-tcl# set type "Supervisor Module-3"
Supervisor Module-3
switch-tcl# set sups [split [string trimright [cli "show module | include \"$type\""]] '\n']

5 0 Supervisor Module-3 DS-X97-SF1-K9 active *
6 0 Supervisor Module-3 DS-X97-SF1-K9 ha-standby

switch-tcl#
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>clis</b>	Execute an NX-OS CLI command silently from Tcl.
<b>open</b>	Open a file or command pipeline and return a channel identifier.

## cli alias name

To define a command alias name, use the **cli alias name** command in configuration submenu. To remove the user-defined command alias, use the **no** form of the command.

**cli alias name command definition**

**no cli alias name command definition**

### Syntax Description

<i>command</i>	Specifies an alias command name. The maximum size is 30 characters.
<i>definition</i>	Specifies the alias command definition. The maximum size is 80 characters.

### Command Default

alias command.

### Command Modes

Configuration submenu

### Command History

Release	Modification
3.0(1)	This command was introduced.

### Usage Guidelines

When defining a command alias follow these guidelines:

- Command aliases are global for all user sessions.
- Command aliases persist across reboots.
- Commands being aliased must be typed in full without abbreviation.
- Command alias translation always takes precedence over any keyword in any configuration mode or submenu.
- Command alias support is only available on the supervisor module, not the switching modules.
- Command alias configuration takes effect for other user sessions immediately.
- You cannot override the default command alias alias, which is an alias for show cli alias.
- Nesting of command aliases is permitted to a maximum depth of 1. One command alias can refer to another command alias that refers to a valid command, not to another command alias.
- A command alias always replaces the first command keyword on the command line.
- You can define command aliases in either EXEC mode or configuration submenu.

### Examples

The following example shows how to define command aliases in configuration submenu:

```
switch# config
t
switch(config)# cli alias name gigint interface gigabitethernet
switch(config)# cli alias name shintbr show interface brief
switch(config)# cli alias name shfcintup shintbr| include up | include fc
```

You can display the command aliases defined on the switch using the alias default command alias.

The following example shows how to display the command aliases defined on the switch:

```
switch(config)# alias
```

```
CLI alias commands
```

```
=====
```

```
alias          :show cli alias
shfcintup     :shintbr | include up | include fc
switch(config)# shfcintup
fc3/1         18      F      on      up          swl      F      4      --
fc3/3         1       SD     --      up          swl      SD     2      --
fc6/1         22      E      auto    up          swl      E      2      --
```

### Related Commands

Command	Description
<b>alias</b>	Displays the default alias command for <b>show cli alias</b> .
<b>show cli alias</b>	Displays all configured aliases.

## cli var name (configuration)

To define a CLI variable that persists across CLI sessions and switch reloads, use the **cli var name** command in configuration submenu. To remove the user-defined persistent CLI variable, use the **no** form of the command.

**cli var name name value**  
**no cli var name name value**

### Syntax Description

<i>name</i>	Specifies a variable name. The maximum size is 31 characters.
<i>value</i>	Specifies a variable value. The maximum size is 80.

### Command Default

None

### Command Modes

Configuration submenu

### Command History

Release	Modification
3.0(1)	This command was introduced.

### Usage Guidelines

CLI variables can be used as follows:

- Entered directly on the command line.
- Passed to the child script and initiated using the run-script command. The variables defined in the parent shell are available for use in the child run-script command process.
- Passed as command-line arguments to the run-script command.
- Referenced using the syntax \$(variable).

CLI variables have the following limitations:

- You cannot reference a variable through another variable using nested references.

### Examples

The following example creates a persistent user-defined CLI variable:

```
switch# config t
switch(config)# cli var name mgmtport mgmt 0
```

### Related Commands

Command	Description
<b>show cli variables</b>	Displays all CLI variables (persistent, session and system).

## cli var name (EXEC)

To define a CLI session variable that persists only for the duration of a CLI session, use the **cli var name** command in either EXEC mode or configuration submode. To remove a user-defined session CLI variable, use the **no** form of the command.

**cli var name name value**  
**no cli var name name value**

### Syntax Description

<i>name</i>	Specifies a variable name. The maximum size is 31 characters.
<i>value</i>	Specifies a variable value. The maximum size is 80.

### Command Default

None

### Command Modes

EXEC mode

### Command History

Release	Modification
3.0(1)	This command was introduced.

### Usage Guidelines

CLI session variables can be used as follows:

- Entered directly on the command line.
- Passed to the child script and initiated using the run-script command. The variables defined in the parent shell are available for use in the child run-script command process.
- Passed as command-line arguments to the run-script command.
- Referenced using the syntax \$(variable).

CLI variables have the following limitation:

- You cannot reference a variable through another variable using nested references.

### Examples

The following example creates a user-defined CLI variable for a session:

```
switch# cli var name testinterface 3/4
```

The following example removes a user-defined CLI variable for a session:

```
switch# cli no var name testinterface 3/4
```

### Related Commands

Command	Description
<b>cli no var name</b>	Removes a user-defined session CLI variable.
<b>show cli variables</b>	Displays all CLI variables (persistent, session and system).

# clis

To execute Cisco NX-OS commands silently in Tcl, use the **clis** command.

**clis** *arguments*

## Syntax Description

<i>arguments</i>	<i>arguments</i> takes the form of a single NX-OS command line to execute in a subprocess. This may include pipes and semicolon separated commands. Normal abbreviations of NX-OS keywords are allowed. Enclosing <i>arguments</i> in quotes (") is optional, but good style that adds clarity to code. The specified NX-OS command line must not cause any prompts for input from the user.
------------------	--

## Command Default

None.

## Command Modes

Interactive Tcl shell and Tcl script.

## Command History

Release	Modification
NX-OS 5.1(1)	This command was introduced.

## Usage Guidelines

The **clis** returns the output as a single string. It does not print any output to the terminal. This is usually the desired behavior when running Tcl scripts. This prevents the terminal from getting flooded with the outputs of the executed NX-OS commands.

In a Tcl script, the **cli** or **clis** command is required to execute NX-OS commands.

In the Tcl shell interactive mode, the **cli** and **clis** commands are optional to execute NX-OS commands; commands that are not recognized by the Tcl shell are passed to the NX-OS shell for execution.

## Examples

The following example shows enables the locator LED for module 1 in a Tcl script:

```
clis "locator-led module 1"
```

The following example shows how to quote a variable and use the pipe in an interactive Tcl shell. It creates a list of Supervisor-3 modules in the system and assigns it to the variable *sup*. *string trimright* removes the trailing blank line from the variable added by Tcl, but not from the terminal output:

```
switch-tcl# set type "Supervisor Module-3"
Supervisor Module-3
switch-tcl# set sups [split [string trimright [cli "show module | include \"${type}\""] '\n']] '\n'

switch-tcl#
```

## Related Commands

Command	Description
<b>cli</b>	Execute an NX-OS CLI command in Tcl verbosely.
<b>open</b>	Open a file or command pipeline and return a channel identifier.



# clock

To configure the time zone or daylight savings time, use the clock command in configuration mode. To disable the daylight saving time adjustment, use the no form of the command.

**clock** {**summer-time** *summer-time-name start-week start-day start-month start-time end-week end-day end-month end-time offset-minutes* | **timezone** *timezone-name hours-offset minute-offset*}

**no clock** {**summer-time** *summer-time-name start-week start-day start-month start-time end-week end-day end-month end-time offset-minutes* | **timezone** *timezone-name hours-offset minute-offset*}

## Syntax Description

<b>summer-time</b>	Specifies the name of the time zone in summer.
<i>summer-time-name</i>	Specifies the name of the daylight savings time zone, ranging from 1 to 8 characters.
<i>start-week end-week</i>	Specifies the starting week and ending week, ranging from 1 (week 1) to 5 (week 5).
<i>start-dayend-day</i>	Specifies the starting day and ending day, ranging from 1 to 8 characters (Sunday to Saturday).
<i>start-monthend-month</i>	Specifies the starting month and ending month, ranging from 1 to 8 characters (January to December).
<i>start-timeend-time</i>	Specifies the starting time and ending time, ranging from 00:00 to 23:59.
<i>offset-minutes</i>	Specifies the daylight savings time offset, ranging from 1 to 1440 minutes.
<b>timezone</b>	Specifies the name of the time zone.
<i>timezone-name</i>	Specifies the name of the time zone, ranging from 1 to 8 characters.
<i>hours-offset</i>	Specifies the offset time in hours, ranging from 0 to 23. Include a dash before the number; for example, -23.
<i>minutes-offset</i>	Specifies the offset time in minutes, ranging from 0 to 59. Include a dash before the number; for example, -59.

## Command Default

Coordinated Universal Time (UTC) is the same as Greenwich Mean Time (GMT).

## Command Modes

Configuration mode.

## Command History

Release	Modification
1.0(2)	This command was introduced.
3.1(1)	Added a new set of arguments for <b>timezone</b> .

## Usage Guidelines

The appropriate daylight savings time zone name should be specified. If it is not, the default name is used.

Specify the *hours-offset* argument with a dash before the number; for example, **-23**. Specify the *minutes-offset* argument with a dash before the number; for example, **-59**.

In the **clock timezone** command, ensure that the STD timezone is not set to a non-DST timezone. Similarly, ensure that the DST timezone is set in the **clock summer-time** command. Otherwise, the SAN telemetry receivers will be unable to correlate the analytics metric timestamps.

### Examples

The following example shows how to set Pacific Daylight Time starting on Sunday in the second week of March at 2:00 A.M. and ending on Sunday in the first week of November at 2:00 A.M:

```
switch# configure terminal
switch# clock summer-time PDT 2 sunday march 02:00 1 sunday november 02:00 60
```

The following example shows how to set the time zone to Pacific Standard Time:

```
switch# configure terminal
switch(config)# clock timezone PST 0 0
```

### Related Commands

Command	Description
<b>clock set</b>	Changes the time on the switch.
<b>show clock</b>	Displays the current date and time.
<b>show run</b>	Displays changes made to the time zone configuration along with other configuration information.

# clock format

To set the clock format that is to be used in NX-OS, use the **clock format** command. To reset the clock format, use the **no** form of this command.

```
clock format { 12-hours | 24-hours | show-timezone { debug | syslog } }
```

## Syntax Description

<b>12-hours</b>	Specifies to set the clock format to 12 hours.
<b>24-hours</b>	Specifies to set the clock format to 24 hours.
<b>show-timezone debug</b>	Specifies to display the configured timezone in debug messages.
<b>show-timezone syslog</b>	Specifies to display the configured timezone in syslog messages.

## Command Default

Clock format is set to 24 hours.

Timezone is included in debug messages.

Timezone is included in syslog messages.

## Command Modes

Configuration mode (config)

## Command History

Release	Modification
1.1(1)	This command was introduced.

## Examples

The following example displays how to set the clock format to 12 hours:

```
switch# configure
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# clock format 12-hours
```

The following example displays how to reset the clock format to 24 hours:

```
switch# configure
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# no clock format 12-hours
```

## Related Commands

Command	Description
<b>show running-config</b>	Displays the active configuration of the switch.

# clock set

To change the system time on a Cisco MDS 9000 Family switch, use the **clock set** command in EXEC mode.

**clock set** *H H : MM:SS DD Month YYYY*

## Syntax Description

<i>HH:</i>	The two-digit time in hours in military format (15 for 3 p.m.).
<i>MM:</i>	The two-digit time in minutes (58).
<i>SS</i>	The two-digit time in seconds (15).
<i>DD</i>	The two-digit date (12).
<i>Month</i>	The month in words (August).
<i>YYYY</i>	The four-digit year (2002).

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
1.0(2)	This command was introduced.

## Usage Guidelines

Generally, if the system is synchronized by a valid outside timing mechanism, such as an NTP clock source, or if you have a switch with calendar capability, you do not need to set the system clock. Use this command if no other time sources are available. The time specified in this command is relative to the configured time zone.

The **clock set** command changes are saved across system resets.

## Examples

The following example shows how to set the system time:

```
switch# clock set 15:58:15 12 August 2002
Mon Aug 12 15:58:00 PDT 2002
```

# cloud discover

To initiate manual, on-demand cloud discovery, use the **cloud discover** command.

**cloud discovery** {**auto** | **fabric distribute** | **message icmp**} **no cloud discovery** {**auto** | **fabric distribute** | **message icmp**}

Syntax Description		
<b>interface</b>		(Optional) Specifies an interface for cloud discovery.
<b>gigabitethernet</b> <i>slot/port</i>		(Optional) Specifies a Gigabit Ethernet interface.
<b>port-channel</b> <i>port-channel-number</i>		(Optional) Specifies a PortChannel interface. The range for the PortChannel number is 1 to 256.

**Command Default** None

## Command Modes

EXEC mode

## Command History

Release	Modification
3.0(1)	This command was introduced.
3.2(2c)	This command was deprecated.

## Usage Guidelines

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 initiates manual, on-demand cloud discovery:

```
switch# cloud discover
```

The following example initiates manual, on-demand cloud discovery on Gigabit Ethernet interface 2/2:

```
switch# cloud discover interface gigabitethernet 2/2
```

## Related Commands

Command	Description
<b>cloud discover</b>	Configures cloud discovery.
<b>cloud-discovery enable</b>	Enables discovery of cloud memberships.
<b>show cloud discovery</b>	Displays discovery information about the cloud.
<b>show cloud membership</b>	Displays information about members of the cloud.

# cloud discovery

To configure cloud discovery, use the **cloud discovery** command in configuration mode. To remove the configuration, use the **no** form of the command.

```
cloud discovery {auto | fabric distribute | message icmp}
no cloud discovery {auto | fabric distribute | message icmp}
```

## Syntax Description

<b>auto</b>	Enables auto fabric discovery.
<b>fabric distribute</b>	Enables cloud discovery fabric distribution.
<b>message icmp</b>	Configures Internet Control Message Protocol (ICMP) as the method for sending a discovery message.

## Command Default

Auto.

## Command Modes

Configuration mode

## Command History

Release	Modification
3.0(1)	This command was introduced.
3.2(2c)	This command was deprecated.

## Usage Guidelines

The iSNS server distributes cloud and membership information across all of the switches using CFS. The cloud view is the same on all of the switches in the fabric.



**Note** If auto discovery is disabled, interface changes result in new members becoming part of an undiscovered cloud. No new clouds are formed.



**Note** This command is not supported on the Cisco MDS 9124 switch.

## Examples

The following example enables auto cloud discovery:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cloud discovery auto
```

The following example enables auto cloud discovery fabric distribution:

```
switch(config)# cloud discovery fabric distribute
```

The following example disables auto cloud discovery fabric distribution:

```
switch(config)# no  
cloud discovery fabric distribute
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>cloud discover</b>	Initiates manual, on-demand cloud discovery.
<b>cloud-discovery enable</b>	Enables discovery of cloud memberships.
<b>show cloud discovery</b>	Displays cloud discovery information.
<b>show cloud membership</b>	Displays information about members of the cloud.

# cloud-discovery enable

To enable discovery of cloud memberships, use the **cloud-discovery** command in configuration mode. To disable discovery of cloud memberships, use the **no** form of the command.

**cloud-discovery enable**  
**no cloud-discovery enable**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Disabled.

**Command Modes** Configuration mode

Release	Modification
3.0(1)	This command was introduced.
3.2(2c)	This command was deprecated.

**Usage Guidelines** This command is not supported on the Cisco MDS 9124 switch.

**Examples** The following example enables discovery of cloud memberships:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# cloud-discovery enable
```

The following example disables discovery of cloud memberships:

```
switch(config)# no
cloud-discovery enable
```

Command	Description
<b>cloud discover</b>	Initiates manual, on-demand cloud discovery.
<b>cloud discovery</b>	Configures cloud discovery.
<b>show cloud</b>	Displays cloud discovery and membership information.



# cluster

To configure a cluster feature, use the cluster command.

**cluster enable**

<b>Syntax Description</b>	enable	Enables or disables a cluster.
---------------------------	--------	--------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Configuration mode
----------------------	--------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	3.2(2)	This command was introduced.
	NX-OS 4.1(1c)	The cluster command is replaced by the feature command.

<b>Usage Guidelines</b>	Starting from Cisco NX-OS 4.x Release, the cluster command is replaced by the feature command.
-------------------------	--

**Examples** The following example enables the Cisco SME clustering:

```
switch# config terminal
switch(config)# cluster enable
switch(config)#
```

# code-page

Use the **code-page** command to configure the EBCDIC format. To disable the configuration or to revert to factory defaults, use the **no** form of the command.

```
{code-page brazil | france | international-5 | italy | japan | spain-latinamerica | uk | us-canada}
{no code-page brazil | france | international-5 | italy | japan | spain-latinamerica | uk | us-canada}
```

## Syntax Description

<b>code-page</b>	Configures code page on a FICON-enabled VSAN
<b>brazil</b>	Configures the brazil EBCDIC format.
<b>france</b>	Configures the france EBCDIC format.
<b>international-5</b>	Configures the international-5 EBCDIC format.
<b>italy</b>	Configures the <b>italy</b> EBCDIC format.
<b>japan</b>	Configures the japan EBCDIC format.
<b>spain-latinamerica</b>	Configures the spain-latinamerica EBCDIC format.
<b>uk</b>	Configures the uk EBCDIC format.
<b>us-canada</b>	Configures the us-canada EBCDIC format.

## Command Default

None

## Command Modes

Configuration mode

## Command History

Release	Modification
1.3(1)	This command was introduced.

## Usage Guidelines

This is an optional configuration. If you are not sure of the EBCDIC format to be used, we recommend retaining the **us-canada** (default) option.

## Examples

The following example configures the **italy** EBCDIC format:

```
switch(config)# ficon vsan 2
switch(config-ficon)# code-page italy
```

The following example reverts to the factory default of using the **us-canada** EBCDIC format:

```
switch(config-ficon)# no code-page
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>ficon vsan</b> <i>vsan-id</i>	Enables FICON on the specified VSAN.
<b>show ficon</b>	Displays configured FICON details.

# commit

To apply the pending configuration pertaining to the Call Home configuration session in progress, use the **commit** command in Call Home configuration submode.

**commit**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** Call Home configuration submode

Command History	Release	Modification
	1.3(1)	This command was introduced.
	2.0(1b)	This command was introduced.

**Usage Guidelines** CFS distribution must be enabled before you can commit the Call Home configuration.

**Examples** The following example shows how to commit the Call Home configuration commands:

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

Related Commands	Command	Description
	<b>callhome</b>	Configures the Call Home function.
	<b>callhome test</b>	Sends a dummy test message to the configured destination(s).
	<b>show callhome</b>	Displays configured Call Home information.

## commit (DMM job configuration submode)

To commit a DMM job, use the **commit** command in DMM job configuration submode. To remove the DMM job, use the **no** form of the command.

**commit**  
**no commit**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** DMM job configuration submode

Command History	Release	Modification
	3.2(1)	This command was introduced.

**Usage Guidelines** You need to configure server HBA ports, storage ports, and job attributes before you commit the job.

**Examples** The following example shows how to commit a data migration job:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# dmm module 3 job 1 destroy
switch(config-dmm-job)#
```

Related Commands	Command	Description
	<b>show dmm job</b>	Displays job information.
	<b>show dmm srvr-vt-login</b>	Enables DMM.

# configure terminal

To enter the configuration mode, use the **configure terminal** command in EXEC mode.

**configure terminal**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

**Command History**

Release	Modification
1.0(2)	This command was introduced.

**Usage Guidelines** None

**Examples** The following example enters the configuration mode:

```
switch# configure terminal  
switch(config)#
```

The following example enters the configuration mode using an abbreviated format of the command:

```
switch# config terminal  
switch(config)#
```

# contract-id

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

**contract-id** *customer-id*  
**no contract-id** *customer-id*

## Syntax Description

<i>customer-id</i>	Configures the service contract ID of the customer. Allows up to 64 characters for the contract number.
--------------------	---

## Command Default

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 contract 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)# contract-id Customer1234
```

## Related Commands

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

# copy

To save a backup of the system software, use the **copy** command in EXEC mode.

**copy source-URL destination-URL**

## Syntax Description

<i>source-URL</i>	The location URL or alias of the source file or directory to be copied.
<i>destination-URL</i>	The destination URL or alias of the copied file or directory.

The following table lists the aliases for source and destination URLs.

<b>running-config</b>	Specifies the configuration currently running on the switch. The <b>system:running-config</b> keyword represents the current running configuration file.
<b>startup-config</b>	Specifies the configuration used during initialization (startup). You can copy the startup configuration from NVRAM. The <b>nvram:startup-config</b> keyword represents the configuration file used during initialization.
<b>bootflash:</b>	Specifies the location for internal bootflash memory.
<b>log:</b>	Specifies the location for the log file system.
<b>slot0:</b>	Specifies the location for the CompactFlash memory or PCMCIA card.
<b>volatile:</b>	Specifies the location for the volatile file system.
<b>system:</b>	Specifies the location for system memory, which includes the running configuration.
<b>fabric</b>	Specifies a fabric wide startup configuration update using Cisco Fabric Services (CFS) where all the remote switches in the fabric copy their running configuration (source) file into their startup configuration (destination) file. The syntax for this command is <b>copy running-config startup-config fabric</b> .
<b>tftp:</b>	Specifies the location for a Trivial File Transfer Protocol (TFTP) network server. The syntax for this alias is tftp: <i>[[//location ]/directory ]/filename</i> .
<b>ftp:</b>	Specifies the location for a File Transfer Protocol (FTP) network server. The syntax for this alias is ftp: <i>[[//location ]/directory ]/filename</i> .
<b>scp:</b>	Specifies the location for a secure copy (scp) network server. The syntax for this alias is scp: <i>[[//location ]/directory ]/filename</i> .
<b>sftp:</b>	Specifies the location for a Secure Trivial File Transfer Protocol (SFTP) network server. The syntax for this alias is sftp: <i>[[//location ]/directory ]/filename</i> .
<b>log:</b>	Specifies the location for log files stored in the same directory.
<b>debug:</b>	Specifies the location for the debug files stored in the debug partition.
<b>nvram:</b>	Specifies the switch NVRAM.



<b>core:</b>	Specifies the location of the cores from any switching or supervisor module to an external flash (slot 0) or a TFTP server.
<i>filename</i>	The name of the flash file.
<i>sup-1sup-2</i>	The number of the supervisor module, where sup-1 is the slot 5 supervisor (active) and sup-2 is the slot 6 supervisor (standby).

**Command Default**

None.

**Command Modes**

EXEC mode.

**Command History**

Release	Modification
NX-OS 4.2(1)	Added a note.
1.3(4)	Command modified.
2.1(1a)	Added the <b>fabric</b> keyword and functionality.

**Usage Guidelines**

This command makes the running and the backup copy of the software identical.

A file can only be copied from an active supervisor to a standby supervisor, not from standby to active.

This command does not allow 127.x.x.x IP addresses.

The copy function will not be completed if the required space is not available in the directory. First change to the required directory (for example, **cd bootflash:**) and verify the available space (for example, **dir bootflash:**).

The entire copying process may take several minutes.

Do not copy a file from an external source directly to the standby supervisor. You must copy from the external source to the active supervisor, and then copy the saved file to the standby supervisor.

You can save cores (from the active supervisor module, the standby supervisor module, or any switching module) to an external flash (slot 0) or to a TFTP server in one of two ways:

- On demand—to copy a single file based on the provided process ID.
- Periodically—to copy core files periodically as configured by the user.

You copy the logfile to a different location using the **copy log:messages** command.

The debug partition contains debugging files created by the software for troubleshooting purposes.

The **running-config startup-config fabric** parameters allow you to use CFS to force every switch in the Fibre Channel fabric to copy their running configuration (source) to their startup configuration (destination).



**Note** If any remote switch fails to complete the **copy running-config startup-config fabric** process, the initiator switch also does not complete saving its startup-configuration. This means that both the remote switch and the initiator switch have failed to save their startup-configuration (the old startup-configuration reverts back). All the other switches in the network would have succeeded.

## Examples

The following example saves your configuration to the startup configuration:

```
switch# copy system:running-config nvram:startup-config
```

The following example copies the file called samplefile from the slot0 directory to the mystorage directory:

```
switch# copy slot0:samplefile slot0:mystorage/samplefile
```

The following example copies a file from the current directory level:

```
switch# copy samplefile mystorage/samplefile
```

If the current directory is slot0:mydir, this command copies slot0:mydir/samplefile to slot0:mydir/mystorage/samplefile.

The following example downloads a configuration file from an external CompactFlash to the running configuration:

```
switch copy slot0:dns-config.cfg system:running-config
```

The following example saves a running configuration file to an external CompactFlash:

```
switch# copy system:running-config slot0:dns-config.cfg
```

The following example saves a startup configuration file to an external CompactFlash:

```
switch# copy system:startup-config slot0:dns-config.cfg
```

The following example uses CFS to cause all switches in the fabric to copy their running configuration (source) file to their startup configuration (destination) file:

```
switch# copy running-config startup-config fabric
[#####] 100%
switch#
```




---

**Note** If any remote switch fails to complete the **copy running-config startup-config fabric** process, the initiator switch also does not complete saving its startup-configuration. This means both the remote switch and the initiator switch have failed to save their startup-configuration (the old startup-configuration reverts back). All the other switches in the network would have succeeded.

---




---

**Note** When you copy a file to an ftp server from a Cisco Fabric Switch for IBM BladeCenter, you must enter the full path. For example: switch# copy running-config ftp://172.25.161.201/mnt/hd2/bch6-inagua-bay3\_cfg1.txt, If you do not enter the full path, the command will not succeed.

---

The following example creates a backup copy of the binary configuration:

```
switch# copy nvram:startup-config nvram:snapshot-config
```

The following example copies an image in bootflash on the active supervisor to the bootflash on the standby supervisor:

```
switch# copy bootflash:myimage bootflash://sup-2/myimage
```

The following example creates a running configuration copy in bootflash:

```
switch# copy system:running-config bootflash:my-config
```

The following examples creates a startup configuration copy in bootflash:

```
switch# copy nvram:startup-config bootflash:my-config
```

#### Related Commands

Command	Description
<b>cd</b>	Changes the default directory or file system.
<b>dir</b>	Displays a list of files on a file system.
<b>reload</b>	Reloads the operating system.
<b>show version</b>	Displays the version of the running configuration file.

# copy licenses

To save a backup of the installed license files, use the **copy licenses** command in EXEC mode.

**copy licenses source-URL destination-URL**

## Syntax Description

<i>source-URL</i>	The location URL or alias of the source file or directory to be copied.
<i>destination-URL</i>	The destination URL or alias of the copied file or directory.

The following table lists the aliases for source and destination URLs.

<b>bootflash:</b>	Specifies the location for internal bootflash memory.
<b>slot0:</b>	Specifies the location for the CompactFlash memory or PCMCIA card.
volatile:	Specifies the location for the volatile file system.
<i>filename</i>	Specifies the name of the license file with a .tar extension.

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
1.3(4)	This command was introduced.

## Usage Guidelines

The copy function will not be completed if the required space is not available in the directory. First change to the required directory (for example, **cd bootflash:**) and verify the available space (for example, **dir bootflash:**).

We recommend backing up your license files immediately after installing them and just before issuing a **write erase** command.

## Examples

The following example saves a file called Enterprise.tar to the bootflash: directory:

```
switch# copy licenses bootflash:/Enterprise.tar
Backing up license done
```

## Related Commands

Command	Description
<b>cd</b>	Changes the default directory or file system.
<b>dir</b>	Displays a list of files on a file system.
<b>install license</b>	Installs a license file.

## copy startup-config running-config

To copy the startup configuration to the running configuration, use the **copy startup-config running-config** command.

**copy startup-config running-config**

### Command Default

None.

### Command Modes

Privileged EXEC (#)

### Command History

Release	Modification
8.5(1)	Added a warning to alert users about overwriting the running configuration with startup configuration.
1.3(4)	This command was introduced.

### Examples

The following example displays how to copy the startup configuration to the running configuration:

```
switch# copy startup-config running-config
Warning: This command will overwrite the running-config with startup-config.
Do you wish to proceed anyway? (y/n) [n] y
Copy complete.
```

### Related Commands

Command	Description
<b>copy running-config startup-config</b>	Copies the running configuration to the startup configuration.

## copy ssm-nvram standby-sup

To copy the contents of the Storage Services Module (SSM) NVRAM to the standby Supervisor 2 module when migrating from a Supervisor 1 to Supervisor 2 module, use the **copy ssm-nvram standby-sup** command in EXEC mode.

**copy ssm-nvram standby-sup**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	3.0(1)	This command was introduced.

**Usage Guidelines** This command should only be used for migrating from a Supervisor 1 to a Supervisor 2 module. When both modules in the switch are the same, you should not use this command; use the **copy** command instead.

**Examples** The following example copies the contents of the SSM NVRAM to the standby Supervisor 2 module:

```
switch# copy ssm-nvram standby-sup
```

Related Commands	Command	Description
	copy	Saves a backup of the system software.

## counter (port-group-monitor configuration mode)

To configure individual counter in a port group monitor policy to use non-default values, use the counter command. To reset the counter to its default values in a Port Group Monitor policy, use the no form of the command.

```
counter {rx-performance | tx-performance} poll-interval interval delta rising-threshold rising
threshold falling-threshold low threshold
no counter {rx-performance | tx-performance} poll-interval interval delta rising-threshold rising
threshold falling-threshold falling-threshold
```

### Syntax Description

rx-performance	Configures RX performance counter.
tx-performance	Configures TX performance counter.
poll-interval	Configures poll interval for counter.
interval	Displays poll interval in seconds. The range is from 0 to 2147483647.
delta	Displays the threshold type.
rising-threshold	Configures the upper threshold value which is the percentage of the polling interval.
rising-threshold	Sets numerical upper threshold limit. The range is from 0 to 100.
falling-threshold	Configures the lower threshold value which is the percentage of the polling interval.
falling-threshold	Sets numerical falling threshold limit. The range is from 0 to 100.

### Command Default

None

### Command Modes

Configuration Port Group Monitor mode

### Command History

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

### Usage Guidelines

This command is available in port-group-monitor configuration mode.

### Examples

The following example shows how to configure monitoring of a specific counter within a Port Group Monitor policy:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)#port-group name pgmon
switch(config-port-group-monitor)# counter rx-performance
switch(config-port-group-monitor)# counter tx-performance
switch(config-port-group-monitor)#
```

The following example shows how to turn off the monitoring of a specific counter in the given policy:

```

switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# no port-group-monitor name pgmon
switch(config-port-group-monitor)# no counter rx-performance
switch(config-port-group-monitor)# no counter tx-performance
switch(config-port-group-monitor)#show port-group-monitor
-----
Port Group Monitor : enabled
-----
Policy Name : pgmonAdmin status : Not Active
Oper status  : Not Active
Port type    : All Port Groups
-----Counter
Threshold Interval %ge Rising Threshold %ge Falling Threshold In Use-----
-----RX Performance Delta 60 80 20
YesTX Performance Delta 60 80 20
No-----

```

**Related Commands**

Command	Description
<b>show port-group-monitor</b>	Displays Port Group Monitor information.



## counter (port-monitor configuration mode)

To configure individual counter in a port-monitor policy to use non-default values, use the **counter** command. To reset the counter to its default values in a port-monitor policy, use the **no** form of the command.

```
counter {credit-loss-reco | err-pkt-from-port | err-pkt-from-xbar | err-pkt-to-xbar | invalid-crc |
invalid-words | link-loss | lr-rx | lr-tx | rx-datarate | signal-loss | state-change | sync-loss |
timeout-discards | tx-credit-not-available | tx-datarate | tx-discards | tx-slowport-count |
tx-slowport-oper-delay | txwait} poll-interval seconds {absolute | delta} rising-threshold count1
event RMON-ID warning-threshold count2 falling-threshold count3 event RMON-ID portguard
{errordisable | flap}
no counter {credit-loss-reco | err-pkt-from-port | err-pkt-from-xbar | err-pkt-to-xbar | invalid-crc |
invalid-words | link-loss | lr-rx | lr-tx | rx-datarate | signal-loss | state-change | sync-loss |
timeout-discards | tx-credit-not-available | tx-datarate | tx-discards | tx-slowport-count |
tx-slowport-oper-delay | txwait} poll-interval seconds {absolute | delta} rising-threshold count1
event RMON-ID warning-threshold count2 falling-threshold count3 event RMON-ID portguard
{errordisable | flap}
```

### Syntax Description

<b>credit-loss-reco</b>	Configures the credit loss recovery counter 1.3.6.1.4.1.9.9.289.1.2.1.1.37.
<b>err-pkt-from-port</b>	Configures the err-pkt-from-port counter 1.3.6.1.4.1.9.9.779.1.1.1.1.4.0.1.
<b>err-pkt-from-xbar</b>	Configures the err-pkt-from-xbar counter 1.3.6.1.4.1.9.9.779.1.1.1.1.4.0.2.
<b>err-pkt-to-xbar</b>	Configures the err-pkt-to-xbar counter 1.3.6.1.4.1.9.9.779.1.1.1.1.4.0.3.
<b>input-errors</b>	Configures the input errors counter.
<b>invalid-crc</b>	Configures the invalid-crc counter 1.3.6.1.4.1.9.9.289.1.2.1.1.6.
<b>invalid-words</b>	Configures the invalid-words counter 1.3.6.1.4.1.9.9.289.1.2.1.1.5.
<b>link-loss</b>	Configures the link failure counter 1.3.6.1.4.1.9.9.289.1.2.1.1.1.
<b>lr-rx</b>	Configures the number of link reset responses received by the Fibre Channel port 1.3.6.1.4.1.9.9.289.1.2.1.1.9.
<b>lr-tx</b>	Configures link reset responses transmitted by the Fibre Channel port 1.3.6.1.4.1.9.9.289.1.2.1.1.10.
<b>rx-datarate</b>	Configures the receive performance counter 1.3.6.1.2.1.31.1.1.1.6.
<b>rx-datarate-burst</b>	Configures the receive datarate burst counter.
<b>sfp-rx-power-low-warn</b>	Configures the SFP receive power low warning counter.
<b>sfp-tx-power-low-warn</b>	Configures the SFP transmit power low warning counter.
<b>signal-loss</b>	Configures the signal-loss counter 1.3.6.1.4.1.9.9.289.1.2.1.1.3.
<b>state-change</b>	Configures the state-change counter. 1.3.6.1.4.1.9.9.289.1.2.1.1.46.

<b>sync-loss</b>	Configures the sync-loss counter 1.3.6.1.4.1.9.9.289.1.2.1.1.2.
<b>timeout-discards</b>	Configures the timeout-discards counter 1.3.6.1.4.1.9.9.289.1.2.1.1.35.
<b>tx-credit-not-available</b>	Configures the transmit credit not available counter 1.3.6.1.4.1.9.9.289.1.2.1.1.38.
<b>tx-datarate</b>	Configures the transmit performance counter 1.3.6.1.2.1.31.1.1.1.10.
<b>tx-datarate-burst</b>	Configures the transmit datarate burst counter.
<b>tx-discards</b>	Configures the transmit discards counter 1.3.6.1.4.1.9.9.289.1.2.1.1.36.
<b>tx-slowport-count</b>	Configure the tx-slowport-count counter.
<b>tx-slowport-oper-delay</b>	Configure the tx-slowport-oper-delay counter. 1.3.6.1.4.1.9.9.289.1.2.1.1.45.
<b>txwait</b>	Configures the txwait counter. 1.3.6.1.4.1.9.9.289.1.2.1.1.47.
<b>warning-signal-threshold</b> <i>count1</i>	Configures the warning signal threshold.
<b>alarm-signal-threshold</b> <i>count2</i>	Configures the alarm signal threshold.
<b>portguard congestion-signals</b>	Configures the congestion signal.
<b>poll-interval</b> <i>seconds</i>	Configures poll interval in seconds. The range is from 1 to 700000 seconds.
<b>absolute</b>	Absolute threshold type.
<b>delta</b>	Delta threshold type.
<b>rising-threshold</b> <i>count3</i>	Sets numerical upper threshold limit. The range is from 0 to 184467440737095516151.
<b>event-id</b> <i>RMON-ID</i>	Event ID. The range is from 0 to 2147483647. <b>Note</b> You can also configure the following RMON events: <ul style="list-style-type: none"> <li>• Event 1: Fatal</li> <li>• Event 3: Error</li> <li>• Event 4: Warning</li> <li>• Event 5: Information</li> </ul>
<b>warning-threshold</b> <i>count4</i>	Sets numerical warning threshold limit. The range is from 0 to 18446744073709551615.
<b>alerts</b>	Specify to configure alerts.
<b>obfl</b>	Sets OBFL alerts.
<b>rmon</b>	Sets RMON alerts.

<b>syslog</b>	Sets syslog alerts.
<b>none</b>	Clears all alerts.
<b>datarate</b> <i>count5</i>	Configures the datarate counter.
<b>falling-threshold</b> <i>count6</i>	Sets numerical lower threshold limit. The range is from 0 to 18446744073709551615.
<b>portguard DIRL</b>	Sets the port guard action for Dynamic Ingress Rate Limiting (DIRL).
<b>portguard FPIN</b>	Sets the port guard action for Fabric Performance Impact Notifications (FPIN).
<b>portguard cong-isolate-recover</b>	Sets the port guard action to recover traffic when traffic congestion is detected on a port.
<b>portguard errordisable</b>	Sets the port guard action to disable errors on a port when a given threshold criteria is met.
<b>portguard flap</b>	Sets the port guard action to flap a port when a give threshold criteria is met.

**Command Default** None

**Command Modes** Port monitor configuration mode.

Release	Modification
8.5(1)	Added the <b>input-errors</b> , <b>rx-datarate-burst</b> , <b>sfp-rx-power-low-warn</b> , <b>sfp-tx-power-low-warn</b> , <b>tx-datarate-burst</b> , <b>warning-signal-threshold</b> , <b>alarm-signal-threshold</b> , <b>portguard congestion-signals</b> , <b>alerts</b> , <b>datarate</b> , <b>DIRL</b> , <b>FPIN</b> , and <b>cong-isolate-recover</b> keywords.
6.2(17)	Added the <b>state-change</b> keyword to the syntax description.
6.2(15)	Added the <b>warning-threshold</b> keyword to the syntax description.
6.2(13)	Added <b>tx-slowport-count</b> , <b>tx-slowport-oper-delay</b> , and <b>txwait</b> keywords to the syntax description.
5.2(2a)	Added <b>err-pkt-from-port</b> , <b>err-pkt-from-xbar</b> , <b>err-pkt-to-xbar</b> new counters to the syntax description.
4.2(1)	This command was introduced.

**Usage Guidelines** The rx-datarate and tx-datarate are calculated using the inoctets and outoctets on an interface. We recommend that you use the delta threshold type for all the counters except the tx-slowport-oper-delay counter which uses absolute threshold type.

**Examples** The following example shows how to configure the credit loss recovery counter within a Port Monitor policy:

```
switch# configure
```

```
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# port-monitor name pgmon
switch(config-port-monitor)# counter credit-loss-reco poll-interval 60 delta rising-threshold
5 event 4 falling-threshold 1 event 4
```

The following example shows how to configure the err-pkt-from-port counter:

```
switch# configure
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# port-monitor name pgmon
switch(config-port-monitor)# counter err-pkt-from-port poll-interval 30 delta rising-threshold
50 event 50 falling-threshold 40 event 40
```

**Related Commands**

Command	Description
<b>show port-monitor</b>	Displays port monitor information.

# counter tx-slowport-count

To configure the tx-slowport-count counter, use the counter tx-slowport-count command. To reset the counter use the no form of the command.

```
counter tx-slowport-count poll-interval seconds {absolute | delta} rising-threshold count1 event
event-id [falling-threshold count2 event event-id]
no counter tx-slowport-count poll-interval seconds {absolute | delta} rising-threshold count1
event event-id [falling-threshold count2 event event-id]
```

## Syntax Description

poll-interval	Configures poll interval for the counter.
seconds	Displays the poll-interval in seconds.
absolute	Displays the threshold type.
delta	Displays the threshold type.
rising-threshold	Configures the upper threshold limit for the counter.
count1	Sets a numerical for the rising threshold limit.
event	Configures rising-threshold event.
event-id	Sets a numerical for the rising threshold event.
falling-threshold	Configures the lower threshold value for the counter.
count2	Sets a numerical for the falling threshold limit.
event	Configures falling-threshold event.
event-id	Sets a numerical for the falling-threshold event.

## Command Default

Default values of the different parameters for the counter.

## Command Modes

Configuration Port Monitor mode.

## Command History

Release	Modification
6.2(13)	This command was introduced.

## Examples

The following example shows how to configure the tx-slowport-count counter within a Port Monitor policy:

```
switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# port-monitor name pmon
switch(config-port-monitor)# counter tx-slowport-count poll-interval 1 delta rising-threshold
```

```
1 event 3 falling-threshold 0 event 4
switch(config-port-monitor)#
```

The following example shows how to reset to the default values for the tx-slowport-count counter within a Port Monitor policy:

```
switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# port-monitor name pmon
switch(config-port-monitor)# no counter tx-slowport-count poll-interval 1 delta
rising-threshold 1 event 3 falling-threshold 0 event 4
```

Configuration for this counter are reset to use default values.

```
switch(config-port-monitor)#
```

#### Related Commands

Command	Description
<b>show port-monitor</b>	Displays Port Monitor information.

## counter tx-slowport-oper-delay

To configure the tx-slowport-oper-delay counter, use the counter tx-slowport-oper-delay command. To reset the counter use the no form of the command.

**counter tx-slowport-oper-delay poll-interval seconds absolute rising-threshold value event event-id [falling-threshold value event event id]**

**no counter tx-slowport-oper-delay poll-interval seconds absolute rising-threshold value event event-id [falling-threshold value event event id]**

### Syntax Description

poll-interval	Configures poll interval for counter.
seconds	Displays the poll-interval in seconds.
absolute	Displays the threshold type.
rising-threshold	Configures the upper threshold value for the counter.
value	Sets a numerical value (in milliseconds) for the rising-threshold.
event	Configures rising-threshold event.
event-id	Sets a numerical for the rising threshold event.
falling-threshold	Configures the lower threshold value for the counter.
value	Sets a numerical (in milliseconds) for the falling-threshold.
event	Configures falling-threshold event.
event-id	Sets a numerical for the event.

### Command Default

Default values of the different parameters for the counter.

### Command Modes

Configuration Port Monitor mode

### Command History

Release	Modification
6.2(13)	This command was introduced.

### Examples

The following example shows how to configure the tx-slowport-oper-delay counter within a Port Monitor policy:

```
switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# port-monitor name pmon
switch(config-port-monitor)# counter tx-slowport-oper-delay poll-interval 1 absolute
rising-threshold 1 event 3 falling-threshold 0 event 4
switch(config-port-monitor)#
```

The following example shows how to reset to the default values for the tx-slowport-oper-delay counter within a Port Monitor policy:

```
switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# port-monitor name pmon
switch(config-port-monitor)# no counter tx-slowport-oper-delay poll-interval 1 absolute
rising-threshold 1 event 3 falling-threshold 0 event 4
Configuration for this counter are reset to use default values.
switch(config-port-monitor)#
```

---

**Related Commands**

Command	Description
<b>show port-monitor</b>	Displays Port Monitor information.



## counter txwait

To configure the txwait counter, use the counter txwait command. To reset the counter use the no form of the command.

**counter txwait poll-interval seconds {absolute|delta} rising-threshold percentage1 event event-id [falling-threshold percentage2 event event-id]**

**no counter txwait poll-interval seconds {absolute|delta} rising-threshold percentage1 event event-id [falling-threshold percentage2 event event-id]**

### Syntax Description

poll-interval	Configures poll interval for counter.
seconds	Displays the poll-interval in seconds.
absolute	Displays the threshold type.
delta	Displays the threshold type.
rising-threshold	Configures the upper threshold value for the counter.
percentage1	Sets a numerical limit (in percentage) for the rising-threshold.
event	Configures a rising-threshold event.
event-id	Sets a numerical limit (in percentage) for the rising-threshold.
falling-threshold	Configures the lower threshold value for the counter.
percentage2	Sets a numerical limit for the falling-threshold.
event	Configures a falling-threshold event.
event-id	Sets a numerical for the event.

### Command Default

Default values of the different parameters for the counter..

### Command Modes

Configuration Port Monitor mode.

### Command History

Release	Modification
6.2(13)	This command was introduced.

### Examples

The following example shows how to configure the txwait counter within a Port Monitor policy:

```
switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# port-monitor name pmon
switch(config-port-monitor)# counter txwait poll-interval 1 delta rising-threshold 1 event
  3 falling-threshold 0 event 4
switch(config-port-monitor)#
```

The following example shows how to reset to the default values for the txwait counter within a Port Monitor policy:

```
switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# port-monitor name pmon
switch(config-port-monitor)# no counter txwait poll-interval 1 delta rising-threshold 1
event 3 falling-threshold 0 event 4
Configuration for this counter are reset to use default values.

switch(config-port-monitor)#
```

---

**Related Commands**

Command	Description
<b>show port-monitor</b>	Displays Port Monitor information.

# crlookup

To set the CRLLookup, use the **crlookup** command. To disable this feature, use the **no** form of the command.

**crlookup attribute-name attribute-name search-filter string base-DN string**  
**no crlookup attribute-name attribute-name search-filter string base-DN string**

## Syntax Description

attribute-name attribute-name	Specifies LDAP attribute name. The maximum size is 128 characters.
search-filter	Specifies LDAP search filter. The maximum length is 128 characters.
string	Specifies search map search filter . The maximum length is 128 characters.
base-DN	Configure base DN to be used for search operation. The Maximum length is 63 characters.
string	Specifies search map base DN name. The Maximum length is 63 characters.

## Command Default

None

## Command Modes

Configuration mode

## Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

## Usage Guidelines

None

## Examples

```
The following example shows how to set the CRLLookup:
switch(config)#ldap search-map s1
switch(config-ldap-search-map)# CRLLookup attribute-name certificate RevocationList"
search-filter" (&(objectClass=CRLDistributionPoint))" base-DN "CN=CDP,CN=Public Key
Services,CN=Services,CN=Configuration,DC=DCBU-ACS"
GROUP_NAME: map1
CRL
ATTR_NAME: map1
SEARCH_FLTR: map1
BASE_DN: DN1
Sending the SET_REQ
switch(config-ldap-search-map)#end
```

## Related Commands

Command	Description
<b>show ldap-server groups</b>	Displays the configured LDAP server groups.

## crypto ca authenticate

To associate and authenticate a certificate of the certificate authority (CA) and configure its CA certificate (or certificate chain), use the **crypto ca authenticate** command in configuration mode. The CA certificate or certificate chain is assumed to already be available in Privacy Enhanced Mail (PEM) (base-64) encoded format.

**crypto ca authenticate trustpoint-label**

### Syntax Description

<i>trustpoint-label</i>	Specifies the name of the trust point. The maximum size is 64 characters.
-------------------------	---

### Command Default

None

### Command Modes

Configuration mode.

### Command History

Release	Modification
3.0(1)	This command was introduced.

### Usage Guidelines

This command authenticates the CA to the switch by obtaining the self-signed certificate of the CA that contains the public key of the CA. Because the CA signs its own certificate, you should manually authenticate the public key of the CA by contacting the CA administrator when you execute this command.

This command is required when you initially configure certificate authority support for the switch. Before you attempt CA authentication, first create the trust point using the **crypto ca trustpoint** command. The CA certificate fingerprint (the MD5 or SHA hash of the certificate) is generally published by the CA. When authenticating the CA, the certificate fingerprint is displayed. The administrator needs to compare it with the one published by the CA and accept the CA certificate only if it matches.

If the CA being authenticated is a subordinate CA (meaning that it is not self-signed), then it is certified by another CA which in turn may be certified by yet another CA and so on until there is a self-signed CA. In this case, the subordinate CA in question is said to have a CA certificate chain certifying it. The entire chain must be input during CA authentication. The maximum length that the CA certificate chain supports is ten.

The trust point CA is the certificate authority configured on the switch as the trusted CA. Any peer certificate obtained will be accepted if it is signed by a locally trusted CA or its subordinates.



**Note** The trust point configuration (created by the **crypto ca trustpoint** command) is persistent only if saved explicitly using the **copy running-config startup-config** command. The certificates and CRL associated to a trust point are automatically made persistent if the trust point in question was already saved in the startup configuration. Conversely, if the trust point was not saved in the startup configuration, the certificates and CRL associated to it are not made persistent automatically because they do not exist without the corresponding trust point after the switch reboots. To ensure that the configured certificates, CRLs and key pairs are made persistent, always save the running configuration to the startup configuration.

### Examples

The following example authenticates a CA certificate called admin-ca:

```

switch# config terminal
switch(config)# crypto ca authenticate myCA
input (cut & paste) CA certificate (chain) in PEM format;
end the input with a line containing only END OF INPUT :
-----BEGIN CERTIFICATE-----
MIIC4jCCAoygAwIBAgIQBWDSiay0GZRPSRI1jK0ZeJANBgkqhkiG9w0BAQUFADCB
kDEgMB4GCSqGSIb3DQEJARYRYWlhbmRrZUBjaXNjb55jb20xCzAJBgNVBAYTAKlO
MRIwEAYDVQQIEwllYXJuYXRha2ExEjAQBgNVBACTCUJhbmdhbG9yZTEOMAwGA1UE
ChMFQ2l2Y28xEzARBgNVBAsTCm5ldHN0b3JhZ2UxEjAQBgNVBAMTCUFwYXJuYSBD
QTAEFw0wNTA1MDMyMjQ2MzdaFw0wNzA1MDMyMjU1MTdaMIGQMSAwHgYJKoZIhvcN
AQkBFhFhbWVufuZGt1QGNpc2NvLmNvbTElMAkGA1UEBhMCSU4xEjAQBgNVBAGTCUth
cm5hdGFrYTESMBAGA1UEBxMJQmFuZ2Fsb3JlMQ4wDAYDVQQKEwVDaXNjbzETMBEG
A1UECXMKbWV0c3RvcnFnZTESMBAGA1UEAxMJQXhcm5hIENBMFwDQYJKoZIhvcN
AQEBBQADSwAwSAJBAMW/7b3+DXJPANBsIHHzluNccNM87ypyzwuoSNZXOMpeRXXI
OzyBAGiXT2ASFuUOWqliDM8rO/41jf8RxxvYKvysCAwEAAaOBvzCBvDALBgNVHQ8E
BAMCACYwDwYDVR0TAQH/BAUwAwEB/zAdBgNVHQ4EFgQUJyJyRoMbrCNMRU2OyRhQ
GgsWbHEwawYDVR0fBGQwYjAuoCygKoYoaHR0cDovL3NzZS0wOC9DZXJ0RW5yb2xs
L0FwYXJuYSUyMENBLmNybDAwOC6gLIYqZmlsZTovL1xccc3N1LTA4XEN1cnRFbnJv
bGxcQXBhcm5hJTlWQ0EuY3JsMBAGCSsGAQQBgjcVAQQDAgEAMA0GCSqGSIb3DQEB
BQUAA0EAHv6UQ+8nE399Tww+KaGr0g0NIJaNgLh0AFcT0rEyuyt/WYGPzksF9Ea
NBG7E0oN66zex0EOEfG1Vs6mXpl//w==
-----END CERTIFICATE-----
END OF INPUT
Fingerprint(s): MD5 Fingerprint=65:84:9A:27:D5:71:03:33:9C:12:23:92:38:6F:78:12
Do you accept this certificate? [yes/no]:y

```

**Related Commands**

Command	Description
<b>crypto ca trustpoint</b>	Configures the trust point.
<b>show crypto ca certificates</b>	Displays configured trust point certificates.
<b>show crypto ca trustpoints</b>	Displays trust point configurations.

## crypto ca crl request

To configure a new certificate revocation list (CRL) downloaded from the certificate authority (CA), use the **crypto ca crl request** command in configuration mode.

**crypto ca crl request trustpoint-label source-file**

### Syntax Description

<i>trustpoint-label</i>	Specifies the name of the trust point. The maximum size is 64 characters.
<i>source-file</i>	Specifies the location of the CRL in the form <b>bootflash:filename</b> . The maximum size is 512.

### Command Default

None

### Command Modes

Configuration mode.

### Command History

Release	Modification
3.0(1)	This command was introduced.

### Usage Guidelines

Cisco MDS NX-OS allows you to pre-download CRLs for the trust points and cache the CRLs in the cert store using the **crypto ca crl request** command. During the verification of a peer certificate by IPsec/IKE or SSH, the issuer CA's CRL will be consulted only if it had already been configured locally, and revocation checking is configured to use CRL. Otherwise, CRL checking is not done and a certificate is considered to be not revoked if no other revocation checking methods are configured. This mode of CRL checking is called CRL optional.

The other modes of revocation checking are called CRL best-effort and CRL mandatory. In these modes, if the CRL is not found locally, there is an attempt to fetch it automatically from the CA. These modes are not supported in MDS SAN-OS release 3.0(1).

The CRL file specified should contain the latest CRL in either Privacy Enhanced Mail (PEM) format or Distinguished Encoding Rules (DER) format.



**Note** The trust point configuration (created by the **crypto ca trustpoint** command) is persistent only if saved explicitly using the **copy running-config startup-config** command. The certificates and CRL associated to a trust point are automatically made persistent if the trust point in question was already saved in the startup configuration. Conversely, if the trust point was not saved in the startup configuration, the certificates and CRL associated to it are not made persistent automatically because they do not exist without the corresponding trust point after the switch reboots. To ensure that the configured certificates, CRLs and key pairs are made persistent, always save the running configuration to the startup configuration.

### Examples

The following example configures a CRL for the trust point or replaces the current CRL:

```
switch# config t
switch(config)# crypto ca crl request admin-ca bootflash:admin-ca.crl
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>revocation-check</b>	Configures trust point revocation check methods.
<b>show crypto ca crl</b>	Displays configured certificate revocation lists (CRL).

# crypto ca enroll

To request a certificate for the switch's RSA key pair created for this trust point CA, use the **crypto ca enroll** command in configuration mode.

**crypto ca enroll trustpoint-label**

<b>Syntax Description</b>	<i>trustpoint-label</i> Specifies the name of the trust point. The maximum size is 64 characters.
---------------------------	---

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Configuration mode
----------------------	--------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	3.0(1)	This command was introduced.

**Usage Guidelines** An MDS switch can enroll with the trust point CA to get an identity in the form of a certificate. You can enroll your switch with multiple trust points, thereby getting a separate identity certificate from each.

When enrolling with a trust point, you must specify an RSA key pair to be certified. This key pair must be generated and associated to the trust point before generating the enrollment request. The association between the trust point, key pair, and identity certificate is valid until it is explicitly removed by deleting the identity certificate first, followed by disassociating the key pair, and deleting the CA certificates (in any order), and finally deleting the trust point itself, in that order only.

Use the **crypto ca enroll** command to generate a request to obtain an identity certificate from each of your trust points corresponding to authenticated CAs. The certificate signing request (CSR) generated is per Public-Key Cryptography Standards (PKCS) #10 standard, and is displayed in PEM format. Cut and paste it and submit it to the corresponding CA through e-mail or the CA website. The CA administrator issues the certificate and makes it available to you either through the website or by sending it in e-mail. You need to import the obtained identity certificate to the corresponding trust point using the **crypto ca import trustpoint-label certificate** command.

The challenge password is not saved with the configuration. This password is required in the event that your certificate needs to be revoked, so you must remember this password.

## Examples

The following example generates a certificate request for an authenticated CA:

```
switch# config t
switch(config)# crypto ca enroll myCA
Create the certificate request ..
Create a challenge password. You will need to verbally provide this
password to the CA Administrator in order to revoke your certificate.
For security reasons your password will not be saved in the configuration.
Please make a note of it.
Password:nbv123
The subject name in the certificate will be: Vegas-1.cisco.com
Include the switch serial number in the subject name? [yes/no]:no
Include an IP address in the subject name [yes/no]:yes
```



```

ip address:209.165.200.226
The certificate request will be displayed...
-----BEGIN CERTIFICATE REQUEST-----
MIIBqzCCARQCAQAwHDEaMBGGA1UEAxMRVmVnYXNjby5jb20wgZ8wDQYJ
KoZlIhvcNAQEEBQADgY0AMIGJAoGBAL8Y1UAJ2NC7jUJ1DVA5MqNigJ2kt8r141KY
0JC6ManNy4qxk8VeMXZSiLJ4JgTzKWdxbLDkTTysnjuCXGvjb+wj0hEhv/y51T9y
P2NJJ8ornqShrvFZgC7ysN/PyMwKcgzhbVpj+rargZvHtGJ91XTq4WoVksCzXv8S
VqyH0vEvAgMBAAGgTzAVBgkqhkiG9w0BCQcxCBMGBmJ2MTIzMDYGCsGSIb3DQEJ
DjEpMCCwJQYDVR0RAQH/BBswGYIRVmVnYXNjby5jb22HBKwWH6IwDQYJ
KoZlIhvcNAQEEBQADgYEAkT60KER6Qo8nj0sDXZVHSfJZh6K6JtDz3Gkd99G1FWgt
PftrNcWUE/pw6HayfQl2T3ecgNwe12d15133YBF2bktExiI6U188nTOjg1XMjja8
8a23bNDpNsM8rklwA6hWkrVL8NUZEFJxqbjfngPNTZacJCUS6ZqKCMetbKytUx0=
-----END CERTIFICATE REQUEST-----

```

**Related Commands**

Command	Description
<b>crypto ca import trustpoint-label certificate</b>	Imports the identity certificate obtained from the CA to the trust point.
<b>crypto key generate rsa</b>	Generates an RSA key pair.
<b>rsa keypair</b>	Configures and associates the RSA key pair details to a trust point.
<b>show crypto key mypubkey rsa</b>	Displays all RSA public key configurations.

## crypto ca export

To export the RSA key pair and the associated certificates (identity and CA) of a trust point within a Public-Key Cryptography Standards (PKCS) #12 format file to a specified location, use the **crypto ca export** command in configuration mode.

**crypto ca export**trustpoint-label pkcs12 destination-file-url pkcs12-password

Syntax Description		
	<i>trustpoint-label</i>	Specifies the name of the trust point. The maximum size is 64 characters.
	<b>pkcs12</b> <i>destination-file-url</i>	Specifies a destination file in <b>bootflash:filename</b> format. The maximum size is 512 characters.
	<i>pkcs12-password</i>	Specifies the password to be used to protect the RSA private key in the exported file. The maximum size is 64 characters.

**Command Default** None

### Command Modes

Configuration mode

### Command History

Release	Modification
3.0(1)	This command was introduced.

### Usage Guidelines

You can export the identity certificate along with the associated RSA key pair and CA certificate (or certificate chain) to a PKCS #12 format file for backup purposes. You can later import the certificate and RSA key pair to recover from a system crash on your switch.

### Examples

The following example shows how to export a certificate and key pair in PKCS #12 format:

```
switch# config terminal
switch(config)# crypto ca export admin-ca pkcs12 bootflash:adminid.p12 nbv123
```

### Related Commands

Command	Description
<b>crypto ca import trustpoint-label certificate</b>	Imports the identity certificate obtained from the CA to the trust point.
<b>crypto ca import trustpoint-label pkcs12</b>	Imports the identity certificate and associated RSA key pair and CA certificate (chain) to a trust point.
<b>crypto key generate rsa</b>	Generates an RSA key pair.
<b>rsa keypair</b>	Configures and associates the RSA key pair details to a trust point.
<b>show crypto key mypubkey rsa</b>	Displays any RSA public key configurations.

# crypto ca import

To import the identity certificate alone in PEM format or the identity certificate and associated RSA key pair and CA certificate (or certificate chain) in Public-Key Cryptography Standards (PKCS) #12 form, use the **crypto ca import** command in configuration mode.

**crypto ca import trustpoint-label {certificate | pkcs12 source-file-url pkcs12-password}**

Syntax Description		
<i>trustpoint-label</i>		Specifies the name of the trust point. The maximum size is 64 characters.
<b>pkcs12</b> <i>source-file-url</i>		Specifies a source file in <b>bootflash:filename</b> format. The maximum size is 512 characters.
<i>pkcs12-password</i>		Specifies the password that was used to protect the RSA private key in the imported PKCS#12 file. The maximum size is 64 characters.

**Command Default** None

**Command Modes** Configuration mode

Command History	Release	Modification
	3.0(1)	This command was introduced.

**Usage Guidelines**

The first form of the command, **crypto ca import trustpoint-label certificate**, is used to import (by cut and paste means) the identity certificate obtained from the CA, corresponding to the enrollment request generated earlier in the trust point and submitted to the CA. The administrator is prompted to cut and paste the certificate.

The second form of the command, **crypto ca import trustpoint-label pkcs12 source-file-url pkcs12-password**, is used to import the complete identity information (that is, the identity certificate and associated RSA key pair and CA certificate or certificate chain) into an empty trust point. This command is useful for restoring the configuration after a system goes down.



**Note** The trust point configuration (created by the **crypto ca trustpoint** command) is persistent only if saved explicitly using the **copy running-config startup-config** command. The certificates and CRL associated to a trust point are automatically made persistent if the trust point in question was already saved in the startup configuration. Conversely, if the trust point was not saved in the startup configuration, the certificates and CRL associated to it are not made persistent automatically because they do not exist without the corresponding trust point after the switch reboots. To ensure that the configured certificates, CRLs and key pairs are made persistent, always save the running configuration to the startup configuration.

## Examples

The following example installs an identity certificate obtained from a CA corresponding to an enrollment request made and submitted earlier:

```
switch# config t
```

```

switch(config)# crypto ca import myCA certificate
input (cut & paste) certificate in PEM format:
-----BEGIN CERTIFICATE-----
MIIEADCCA6qgAwIBAgIKCj00oQAAAAAAdDANBgkqhkiG9w0BAQUFADCBkDEgMB4G
CSqGSIb3DQEJARYRYWlhbmRrZUBjaXNjby5jb20xCzAJBgNVBAYTAklOMRIwEAYD
VQQIEWlLYXJuYXRha2ExEjAQBGNVBAcTCUJhbmdhbG9yZTEOMAwGA1UEChMFQ2l2
Y28xEzARBGNVBAstCm5ldHN0b3JhZ2UxEjAQBGNVBAMTCUFwYXJuYSBDQTAEFw0w
NTExMTIwMzAyNDBaFw0wNjExMTIwMzEyNDBaMBwxGjAYBgNVBAMTEVZlZ2FzLTEu
Y2l2Y28uY29tMIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQC/GNVACdjQu41C
dQ1WkjkjSICdpLfk5eJSmNCQujGpzcKsZPFXjF2UoiyeCYE8ylncWyw5E08rJ47
glxr42/sI9IRIb/8udU/cj9jSSfKK56koa7xWYAu8rDfz8jMCnIM4WlaY/q2q4Gb
x7RifdV06uFqFZEgs17/Elash9LxLwIDAQABo4ICEzCCAg8wJQYDVR0RAQH/BBsw
GYIRVmVnYXMTms5jAXNjby5jb22HBKwWH6IwHQYDVR0OBByEFKLi+2sspWEfgrR
bhWmlVyo9jngMIHMBGNVHSMEGcQwgcGAFCCo8kaDG6wjTEVNjSkYUBoLFmxxoYGW
pIGTMIGQMSAwHgYJKoZIHvcNAQkBFhFhbWfuZGt1QGNpc2NvLmNvbTELMakGA1UE
BhMCSU4xEjAQBGNVBAgTCUthcm5hdGFryTESMBAGA1UEBxMJQmFuZ2Fsb3JlMQ4w
DAYDVQQKEwVdaXNjbzETMBEAGA1UECzMkbnV0c3RvcnFnZTESMBAGA1UEAxMjQXbh
cm5hIENBghAFYnKJrLQZlE9JEiWMrRl6MGsGA1UdHwRkMGtWlQAsocCqGKGh0dHA6
Ly9zcm50dMDGvQ2VydEVucm9sbC9BcGFybmElMjBDQS5jcmwwMKAuoCyGKmZpbGU6
Ly9zcXhNzZS0wOFxDZXJ0RW5yb2xsXEFwYXJuYXUyMENBLmNybDcBbigYIKwYBBQUH
AQEEfjB8MdsGCCsGAQUFBzAChi9odHRwOi8vc3NlLTA4L0NlcnRFbnJvbGwvc3Nl
LTA4X0FwYXJuYXUyMENBLmNydDA9BggrBgEFBQcwoAoYxZmlsZTovL1xccc3NlLTA4
XENlcnRFbnJvbGwvc3NlLTA4X0FwYXJuYXUyMENBLmNydDANBgkqhkiG9w0BAQUF
AANBADbGBGsbe7GNLh9xeOTWBNbm24U69ZSuDDcOcUZUUTgrpnTqVpPyejtsyflw
E36cIZu4WsExREqxbTk8ycx7V5o=
-----END CERTIFICATE-----

```

The following example shows how to import a certificate and key pair in a Public-Key Cryptography Standards (PKCS) #12 format file:

```

switch# config t
witch(config)# crypto ca import admin-ca pkcs12 bootflash:adminid.p12 nbv123

```

## Related Commands

Command	Description
<b>crypto ca enroll</b>	Generates a certificate signing request for a trust point.
<b>crypto ca export trustpoint-label pkcs12</b>	Exports the RSA key pair and associated certificates of a trust point.
<b>crypto key generate rsa</b>	Generates the RSA key pair.
<b>rsakeypair</b>	Configures trust point RSA key pair details.
<b>show crypto ca certificates</b>	Displays the identity and CA certificate details.
<b>show crypto key mypubkey rsa</b>	Displays any RSA public key configurations.

# crypto ca lookup

To configure the type of certstore that PKI will use for authentication, use the `crypto ca lookup` command in configuration mode. To disable this feature, use the `no` form of the command.

**crypto ca lookup** {**both** | **local** | **remote**}

Syntax Description	both	Specifies both local and remote certstore.
	local	Specifies local certstore.
	remote	Specifies remote certstore.

**Command Default** None

**Command Modes** Configuration mode

Command History	Release	Modification
	NX-OS 5.0(1a)	This command was introduced.

**Usage Guidelines** None

## Examples

The following example shows how to configure both local and remote certstore:

```
switch(config)# crypto ca lookup both
switch(config)#
```

The following example shows how to configure local certstore:

```
switch(config)# crypto ca lookup local
switch(config)#
```

The following example shows how to configure remote certstore:

```
switch(config)# crypto ca lookup remote
switch(config)#
```

Related Commands	Command	Description
	<b>show crypto ssh-auth-map</b>	displays mapping filters applied for SSH authentication.

# crypto ca remote ldap

To configure Ldap certstore, use the `crypto ca remote ldap` command in configuration mode. To disable this feature, use the `no` form of the command.

**crypto ca remote ldap** {*crl-refresh-time* *hours* | *server-group* *group-name*}

## Syntax Description

<i>crl-refresh-time</i>	Specifies timer to fetch crl from remote certstore.
<i>hours</i>	Specifies timer value in hours. The range will be from 0 - 744. i.e. The refresh time can be configured at max for one month. So $31 * 24 = 744$ . And if refresh-time is 0 then the refresh routine will be executed once at the time of configuration.
<i>server-group</i>	Specifies LDAP server group.
<i>group-name</i>	Specifies LDAP server group name. The maximum size is 64 characters.

## Command Default

None

## Command Modes

Configuration mode

## Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

## Usage Guidelines

None

## Examples

The following example shows how to configure timer to fetch crl from remote certstore:

```
switch(config)# crypto ca remote ldap crl-refresh-time 124
switch(config)#
```

The following example shows how to configure LDAP server group:

```
switch(config)# crypto ca remote ldap server-group admin
switch(config)#
```

## Related Commands

Command	Description
<b>show crypto ssh-auth-map</b>	displays mapping filters applied for SSH authentication.

# crypto ca test verify

To verify a certificate file, use the **crypto ca test verify** command in configuration mode.

**crypto ca test verify certificate-file**

<b>Syntax Description</b>	<i>certificate-file</i>	Specifies the certificate filename in the form <b>bootflash:filename</b> . The maximum size is 512 characters.
---------------------------	-------------------------	--

**Command Default** None

**Command Modes** Configuration mode.

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	3.0(1)	This command was introduced.

**Usage Guidelines** The **crypto ca test verify** command is only a test command. It verifies the specified certificate in PEM format by using the trusted CAs configured and by consulting the CRL or OCSP if needed, as per the revocation checking configuration.

**Examples** The following example shows how to verify a certificate file. Verify status code 0 means the verification is successful.

```
switch(config)# crypto ca test verify bootflash:id1.pem
verify status oode:0
verify error msg:
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show crypto ca certificates</b>	Displays configured trust point certificates.

# crypto ca trustpoint

To create a trust point certificate authority (CA) that the switch should trust, and enter trust point configuration submode (config-trustpoint), use the **crypto ca trustpoint** command in configuration mode. To remove the trust point, use the **no** form of the command.

**crypto ca trustpoint trustpoint-label**  
**no crypto ca trustpoint trustpoint-label**

## Syntax Description

<i>trustpoint-label</i>	Specifies the name of the trust point. The maximum size is 64 characters.
-------------------------	---

## Command Default

None

## Command Modes

Configuration mode

## Command History

Release	Modification
3.0(1)	This command was introduced.

## Usage Guidelines

Trust points have the following characteristics:

- A trust point corresponds to a single CA, which an MDS switch trusts for peer certificate verification for any application.
- A CA must be explicitly associated to a trust point using the CA authentication process using the **crypto ca authenticate** command.
- An MDS switch can have many trust points and all applications on the switch can trust a peer certificate issued by any of the trust point CAs.
- A trust point is not restricted to a specific application.
- The MDS switch can optionally enroll with a trust point CA to get an indemnity certificate for itself.

You do not need to designate one or more trust points to an application. Any application should be able to use any certificate issued by any trust point as long as the certificate purpose satisfies application requirement.

You do not need more than one identity certificate from a trust point or more than one key pair to be associated to a trust point. A CA certifies a given identity (name) only once and does not issue multiple certificates with the same subject name. If you need more than one identity certificate for a CA, define another trust point for the same CA, associate another key pair to it, and have it certified, provided CA allows multiple certificates with same subject name.



**Note** Before using the **no crypto ca trustpoint** command to remove the trust point, first delete the identity certificate and CA certificate (or certificate chain) and then disassociate the RSA key pair from the trust point. The switch enforces this behavior to prevent the accidental removal of the trust point along with the certificates.

## Examples

The following example declares a trust point CA that the switch should trust and enters trust point configuration submode:



```
switch#  
config terminal  
  
switch(config)# crypto ca trustpoint admin-ca  
switch(config-trustpoint)#
```

The following example removes the trust point CA:

```
switch#  
config terminal  
  
switch(config)# no crypto ca trustpoint admin-ca
```

**Related Commands**

Command	Description
<b>crypto ca authenticate</b>	Authenticates the certificate of the certificate authority.
<b>crypto ca enroll</b>	Generates a certificate signing request for a trust point.
<b>show crypto ca certificates</b>	Displays the identity and CA certificate details.
<b>show crypto ca trustpoints</b>	Displays trust point configurations.

# crypto cert ssh-authorize

To configure mapping filter for SSH, use the `crypto cert ssh-authorize` command in configuration mode. To disable this feature, use the `no` form of the command.

**crypto cert ssh-authorize name map map name1 mapname2**

## Syntax Description

<i>name</i>	Specifies issuer name of the certificate. The maximum size is 64 characters.
map	Specifies mapping filter.
map name	Specifies the name of the mapping filter that is already configured. The maximum size is 64 characters.

## Command Default

None

## Command Modes

Configuration mode

## Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

## Usage Guidelines

None

## Examples

The following example shows how to configure mapping filter for SSH:

```
switch(config)# crypto cert ssh-authorize DCBU map map1 map2
switch(config)#
```

The following example shows how to configure default mapping filter for SSH:

```
switch(config)# crypto cert ssh-authorize default map map1 map2
switch(config)#
```

## Related Commands

Command	Description
<b>show crypto ssh-auth-map</b>	displays mapping filters applied for SSH authentication.

# crypto certificatemap mapname

To configure the certificate map that will be used for filtering the certificate request, use the **crypto certificatemap mapname** command in configuration mode. To disable this feature, use the no form of the command.

**crypto certificatemap mapname mapname**

## Syntax Description

<i>mapname</i>	Specifies the name of the filter map. The maximum size is 64 characters.
----------------	--

## Command Default

None

## Command Modes

Configuration mode

## Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

## Usage Guidelines

None

## Examples

The following example shows how to display mapping filters applied for SSH authentication:

```
switch(config)# crypto certificatemap mapname map1
switch(config-certmap-filter)#
```

## Related Commands

Command	Description
<b>show crypto ssh-auth-map</b>	displays mapping filters applied for SSH authentication.

# crypto global domain ipsec security-association lifetime

To configure global parameters for IPsec, use the **crypto global domain ipsec security-association lifetime** command. To revert to the default, use the **no** form of the command.

**crypto global domain ipsec security-association lifetime** {**gigabytes** *number* | **kilobytes** *number* | **megabytes** *number* | **seconds** *number*}  
**no crypto global domain ipsec security-association lifetime** {**gigabytes** | **kilobytes** | **megabytes** | **seconds**}

## Syntax Description

<b>gigabytes</b> <i>number</i>	Specifies a volume-based key duration in gigabytes. The range is 1 to 4095.
<b>kilobytes</b> <i>number</i>	Specifies a volume-based key duration in kilobytes. The range is 2560 to 2147483647.
<b>megabytes</b> <i>number</i>	Specifies a volume-based key duration in megabytes. The range is 3 to 4193280.
<b>seconds</b> <i>number</i>	Specifies a time-based key duration in seconds. The range is 600 to 86400.

## Command Default

450 gigabytes and 3600 seconds

## Command Modes

Configuration mode.

## Command History

Release	Modification
2.0(x)	This command was introduced.

## Usage Guidelines

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

The global security association lifetime value can be overridden for individual IPsec crypto maps using the **set** command in IPsec crypto map configuration submode.

## Examples

The following example shows how to configure the system default before the IPsec:

```
switch# config terminal
switch(config)# crypto global domain ipsec security-association lifetime gigabytes 500
```

## Related Commands

Command	Description
<b>crypto ipsec enable</b>	Enables IPsec.
<b>set (IPsec crypto map configuration submode)</b>	Configures IPsec crypto map entry parameters.
<b>show crypto global domain ipsec</b>	Displays the global attributes for IPsec.

# crypto ike domain ipsec

To enter IKE configuration submode, use the **crypto ike domain ipsec** command.

**crypto ike domain ipsec**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** None

**Command Modes** Configuration mode

Command History	Release	Modification
	2.0(x)	This command was introduced.

**Usage Guidelines** To configure IKE protocol attributes, IKE must be enabled using the **crypto ike enable** command.



**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.

- The crypto ike feature is not supported on the Cisco MDS 9148 and Cisco MDS 9148S, and Cisco MDS 9396S Switches.

## Examples

The following example shows how enter IKE configuration mode:

```
switch# config terminal
switch(config)# crypto ike domain ipsec
switch(config-ike-ipsec)#
```

Related Commands	Command	Description
	<b>crypto ike enable</b>	Enables the IKE protocol.
	<b>show crypto ike domain ipsec</b>	Displays IKE information for the IPsec domain.

## crypto ike domain ipsec rekey sa

To rekey an IKE crypto security association (SA) in the IPsec domain, use the **crypto ike domain ipsec rekey sa** command.

**crypto ike domain ipsec rekey sa** *sa-index*

### Syntax Description

<i>sa-index</i>	Specifies the SA index. The range is 1 to 2147483647.
-----------------	---

### Command Default

None

### Command Modes

EXEC mode

### Command History

Release	Modification
2.0(x)	This command was introduced.

### Usage Guidelines

To use this command, IKE must be enabled using the **crypto ike enable** command.



**Note** This command is not supported on the Cisco MDS 9124 switch.

- The crypto ike feature is not supported on the Cisco MDS 9148 and Cisco MDS 9148S, and Cisco MDS 9396S Switches.

### Examples

The following example rekeys an IKE crypto SA:

```
switch# crypto ike domain ipsec rekey sa 100
```

### Related Commands

Command	Description
<b>crypto ike enable</b>	Enables the IKE protocol.
<b>show crypto ike domain ipsec</b>	Displays IKE information for the IPsec domain.

# crypto ike enable

To enable IKE, use the **crypto ike enable** command. To disable IKE, use the **no** form of the command.

**crypto ike enable**  
**no crypto ike enable**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** Disabled.

**Command Modes** Configuration mode.

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

**Usage Guidelines** The IKE protocol cannot be disabled unless IPsec is disabled.  
 The configuration and verification commands for the IKE protocol are only available when the IKE protocol is enabled on the switch. When you disable this feature, all related configurations are automatically discarded.



**Note** This command is not supported on the Cisco MDS 9124 switch.

- The crypto ike feature is not supported on the Cisco MDS 9148 and Cisco MDS 9148S, and Cisco MDS 9396S Switches.

## Examples

The following example shows how to enable the IKE protocol:

```
switch# config terminal
switch(config)# crypto ike enable
```

Related Commands	Command	Description
	<b>clear crypto ike domain ipsec sa</b>	Clears IKE protocol information clear IKE SAs.
	<b>crypto ipsec enable</b>	Enables IPsec.
	<b>show crypto ike domain ipsec</b>	Displays IKE information for the IPsec domain.

# crypto ipsec enable

To enable IPsec, use the **crypto ipsec enable** command. To disable IPsec, use the **no** form of the command.

**crypto ipsec enable**  
**no crypto ipsec enable**

**Syntax Description** This command has no other arguments or keywords.

**Command Default** Disabled.

**Command Modes** Configuration mode.

Release	Modification
2.0(x)	This command was introduced.

**Usage Guidelines** To enable the IPsec, the IKE protocol must be enabled using the **crypto ike enable** command. The configuration and verification commands for IPsec are only available when IPsec is enabled on the switch. When you disable this feature, all related configurations are automatically discarded.



**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 IPsec:

```
switch# config terminal
switch(config)# crypto ipsec enable
```

Command	Description
<b>show crypto global domain ipsec</b>	Displays IPsec crypto global information.
<b>show crypto map domain ipsec</b>	Displays IPsec crypto map information.
<b>show crypto transform-set domain ipsec</b>	Displays IPsec crypto transform set information.



# crypto key generate rsa

To generate an RSA key pair, use the **crypto key generate rsa** command in configuration mode.

**crypto key generate rsa** [**label** *key-pair-label*] [**exportable**] [**modulus** *key-pair-size*]

## Syntax Description

<b>label</b> <i>key-pair-label</i>	(Optional) Specifies the name of the key pair. The maximum size is 64 characters.
<b>exportable</b>	(Optional) Configures the key pair to be exportable.
<b>modulus</b> <i>key-pair-size</i>	(Optional) Specifies the size of the key pair. The size ranges from 512 to 2048.

## Command Default

By default, the **key** is not exportable. The default **label** is switch FQDN. The default **modulus** is 512.

## Command Modes

Configuration mode.

## Command History

Release	Modification
3.0(1)	This command was introduced.

## Usage Guidelines

You can generate one or more RSA key pairs and associate each RSA key pair with a distinct trust point CA, where the MDS switch enrolls to obtain identity certificates. The MDS switch needs only one identity per CA, which consists of one key pair and one identity certificate.

Cisco MDS NX-OS allows you to generate RSA key pairs with a configurable key size (or modulus). The default key size is 512. Valid modulus values are 512, 768, 1024, 1536, and 2048.

You can also configure an RSA key pair label. The default key pair label is FQDN.

## Examples

The following example shows how to configure an RSA key pair called newkeypair:

```
switch# config terminal
switch(config)# crypto key generate rsa label newkeypair
```

The following example shows how to configure an RSA key pair called testkey, of size 768, that is exportable:

```
switch# config terminal
switch(config)# crypto key generate rsa label testkey exportable modulus 768
```

The following example shows how to generate an exportable RSA key with the switch name as the default label and 512 as the default modulus:

```
switch# config terminal
switch(config)# crypto key generate rsa exportable
```

## Related Commands

Command	Description
<b>crypto key zeroize rsa</b>	Deletes RSA key pair configurations.

Command	Description
<b>rsa</b> keypair	Configures trust point RSA key pair details.
<b>show crypto key mypubkey</b> rsa	Displays information about configured RSA key pairs.

# crypto key zeroize rsa

To delete an RSA key pair from the switch, use the **crypto key zeroize rsa** command in configuration mode.

**crypto key zeroize rsa key-pair-label**

<b>Syntax Description</b>	<i>key-pair-label</i> Specifies the RSA key pair to delete. The maximum size is 64 characters.
---------------------------	--

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Configuration mode
----------------------	--------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	3.0(1)	This command was introduced.

**Usage Guidelines** If you believe the RSA key pair on your switch was compromised in some way and should no longer be used, you should delete it.

After you delete the RSA key pair on the switch, ask the CA administrator to revoke your switch's certificates at the CA. You must supply the challenge password you created when you originally requested the switch's certificates.

Before deleting a key pair, you should delete the identity certificates corresponding to it in various trust points if the identity certificates exist, and then disassociate the key pair from those trust points. The purpose of this is to prevent accidental deletion of a key pair for which there exists an identity certificate in a trust point.



**Note** The trust point configuration, certificates, and key pair configurations are made persistent only after saving to the startup configuration. To be consistent with this configuration behavior, the delete behavior is also the same. That is, the deletions are made persistent only after saving to the startup configuration. **Use the copy running-config startup-config** command to make the certificate and key pair deletions persistent.

## Examples

The following example shows how to delete an RSA key pair called testkey:

```
switch# config terminal
switch(config)# crypto key zeroize rsa testkey
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>crypto key generate rsa</b>	Configures an RSA key pair.
	<b>rsakeypair</b>	Configures trust point RSA key pair details.
	<b>show crypto key mypubkey rsa</b>	Displays information about configured RSA key pairs.

## crypto map domain ipsec (configuration mode)

To specify an IPsec crypto map and enter IPsec crypto map configuration mode, use the **crypto map domain ipsec** command. To delete an IPsec crypto map or a specific entry in an IPsec crypto map, use the **no** form of the command.

```
crypto map domain ipsec map-name [seq-number]
no crypto map domain ipsec map-name [seq-number]
```

### Syntax Description

<i>map-name</i>	Specifies the map name. Maximum length is 63 characters.
<i>seq-number</i>	(Optional) Specifies the sequence number for the map entry. The range is 1 to 65535.

### Command Default

None

### Command Modes

Configuration mode

### Command History

Release	Modification
2.0(x)	This command was introduced.

### Usage Guidelines

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

The sequence number determines the order in which IPsec crypto map entries are applied.

### Examples

The following example specifies entry 1 for IPsec crypto map IPsecMap and enters IPsec crypto map configuration mode:

```
switch# config terminal
switch(config)# crypto map domain ipsec IPsecMap 1
switch(config-crypto-map-ip)#
```

The following example deletes an IPsec crypto map entry:

```
switch# config terminal
switch(config)# no crypto map domain ipsec IPsecMap 1
```

The following example deletes the entire IPsec crypto map:

```
switch# config terminal
switch(config)# no crypto map domain ipsec IPsecMap
```

### Related Commands

Command	Description
<b>crypto ipsec enable</b>	Enables IPsec.
<b>crypto transform-set domain ipsec</b>	Configures the transform set for an IPsec crypto map.

Command	Description
set (IPsec crypto map configuration submode)	Configures IPsec crypto map entry parameters.
show crypto map domain ipsec	Displays IPsec crypto map information.

## crypto map domain ipsec (interface configuration submode)

To configure an IPsec crypto map on a Gigabit Ethernet interface, use the **crypto map domain ipsec** command in interface configuration submode. To remove the IPsec crypto map, use the **no** form of the command.

**crypto map domain ipsec** *map-name*  
**no crypto map domain ipsec**

### Syntax Description

<i>map-name</i>	Specifies the map name. Maximum length is 63 characters.
-----------------	--

### Command Default

None

### Command Modes

Interface configuration submode

### Command History

Release	Modification
2.0(x)	This command was introduced.

### Usage Guidelines

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

The sequence number determines the order in which crypto maps are applied.

### Examples

The following example shows how to specify an IPsec crypto map for a Gigabit Ethernet interface:

```
switch# config terminal
switch(config)# interface gigabitethernet 1/2
switch(config-if)# crypto map domain ipsec IPsecMap
```

### Related Commands

Command	Description
<b>crypto ipsec enable</b>	Enables IPsec.
<b>show crypto map domain ipsec</b>	Displays IPsec crypto map information.
<b>show interface</b>	Displays interface information.

## crypto transform-set domain ipsec

To create and configure IPsec transform sets, use the **crypto transform-set domain ipsec** command. To delete an IPsec transform set, use the **no** form of the command.

```
crypto transform-set domain ipsec set-name {esp-3des|esp-des} [esp-aes-xcbc-mac|esp-md5-hmac
|esp-sha1-hmac]
crypto transform-set domain ipsec set-name esp-aes {128|256} [ctr {esp-aes-xcbc-mac|
esp-md5-hmac|esp-sha1-hmac}|esp-aes-xcbc-mac|esp-md5-hmac|esp-sha1-hmac]
no crypto transform-set domain ipsec set-name {esp-3des|esp-des} [esp-aes-xcbc-mac|
esp-md5-hmac|esp-sha1-hmac]
no crypto transform-set domain ipsec set-name esp-aes {128|256} [ctr {esp-aes-xcbc-mac|
esp-md5-hmac|esp-sha1-hmac}|esp-aes-xcbc-mac|esp-md5-hmac|esp-sha1-hmac]
```

### Syntax Description

<i>set-name</i>	Specifies the transform set name. Maximum length is 63 characters.
<b>esp-3des</b>	Specifies ESP transform using the 3DES cipher (128 bits).
<b>esp-des</b>	Specifies ESP transform using the DES cipher (56 bits).
<b>esp-aes-xcbc-mac</b>	Specifies ESP transform using AES-XCBC-MAC authentication.
<b>esp-md5-hmac</b>	Specifies ESP transform using MD5-HMAC authentication.
<b>esp-sha1-hmac</b>	Specifies ESP transform using SHA1-HMAC authentication.
<b>esp-aes</b>	Specifies ESP transform using the AES cipher (128 or 256 bits).
<b>128</b>	Specifies ESP transform using AES 128-bit cipher.
<b>256</b>	Specifies ESP transform using AES 256-bit cipher.
<b>ctr</b>	Specifies AES in counter mode.

### Command Default

None

The default mode of AES is CBC (Cyber Block Chaining).

### Command Modes

Configuration mode.

### Command History

Release	Modification
2.0(x)	This command was introduced.
5.2(2)	The <b>esp-aes-xcbc-mac</b> keyword was not supported.

### Usage Guidelines

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

You can use this command to modify existing IPsec transform sets. If you change a transform set definition, the change is only applied to crypto map entries that reference the transform set. The change is not applied

to existing security associations, but used in subsequent negotiations to establish new security associations. If you want the new settings to take effect sooner, you can clear all or part of the security association database using the **clear crypto sa domain ipsec** command.

### Examples

The following example shows how to configure an IPsec transform set:

```
switch# config terminal
switch(config)# crypto transform-set domain ipsec Set1 esp-aes 128
```

### Related Commands

Command	Description
<b>clear crypto sa domain ipsec</b>	Clears security associations.
<b>crypto ipsec enable</b>	Enables IPsec.
<b>show crypto transform-set domain ipsec</b>	Displays IPsec crypto transform set information.



# customer-id

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

**customer-id** *customer-id*  
**no customer** *customer-id*

## Syntax Description

<i>customer-id</i>	Specifies the customer ID. The maximum length is 64 alphanumeric characters in free format.
--------------------	---

## Command Default

None

## Command Modes

Call Home configuration submenu

## Command History

Release	Modification
1.0(2)	This command was introduced.

## Usage Guidelines

None.

## Examples

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

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# callhome
switch(config-callhome)# customer-id Customer1234
```

## Related Commands

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

