



CHAPTER 7

E Commands

The commands in this chapter apply to the Cisco MDS 9000 Family of multilayer directors and fabric switches. All commands are shown here in alphabetical order regardless of command mode. See [“About the CLI Command Modes”](#) section on page 1-3 to determine the appropriate mode for each command. For more information, refer to the *Cisco MDS 9000 Family CLI Configuration Guide*.

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email-contact

To configure an e-mail contact with the Call Home function, use the **email-addr** command in Call Home configuration submode. To disable this feature, use the **no** form of the command.

email-addr *email-address*

no email-addr *email-address*

Syntax Description	<i>email-address</i>	Configures an e-mail address. Uses a standard e-mail address that does not have any text size restrictions.
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Defaults	None.
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Command Modes	Call Home configuration submode.
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Command History	Release	Modification
	1.0(2)	This command was introduced.

Usage Guidelines	None.
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Examples The following example shows how to configure e-mail contact in the Call Home configuration:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# callhome
switch(config-callhome)# email-contact username@company.com
```

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

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enable

To enable the Call Home function, use the **enable** command in Call Home configuration submode. To disable this feature, use the **disable** command.

enable

Syntax Description	This command has no arguments or keywords.
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Defaults	None.
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Command Modes	Call Home configuration submode.
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Command History	Release	Modification
	1.0(2)	This command was introduced.

Usage Guidelines	To disable the Call Home function, use the disable command:
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Examples	The following example shows how to enable the Call Home function.
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```
switch# config terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
switch(config)# callhome  
switch(config-callhome)# enable
```

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

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encryption

To configure an encryption algorithm for an IKE protocol policy, use the **encryption** command. To revert to the default, use the **no** form of the command.

encryption {3des | aes | des}

no encryption

Syntax Description	3des	168-bit DES (3DES)
	aes	128-bit AES-CBC
	des	56-bit DES-CBS

Defaults	3des
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Command Modes	IKE policy configuration submode.
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Command History	Release	Modification
	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.
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Examples	The following example shows how to configure the encryption algorithm for the IKE protocol:
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```
switch# config terminal
switch(config)# crypto ike domain ipsec
switch(config-ike-ipsec)# policy 1
switch(config-ike-ipsec-policy)# encryption 3des
```

Related Commands	Command	Description
	crypto ike domain ipsec	Enters IKE configuration mode.
	crypto ike enable	Enables the IKE protocol.
	policy	Configures IKE policy parameters.
	show crypto ike domain ipsec	Displays IKE information for the IPsec domain.

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end

To exit any of the configuration modes and return to EXEC mode, use the **end** command in configuration mode.

end

Syntax Description	This command has no arguments or keywords.
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Defaults	None.
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Command Modes	Configuration mode.
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Command History	Release	Modification
	4.1(1b)	Modified the command output.
	1.0(2)	This command was introduced.

Usage Guidelines	You can also press Ctrl-Z to exit configuration mode.
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Examples	The following example shows how to exit from configure mode:
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```
switch(config-port-monitor)# end
switch#
```

The following example changes the name to george. Entering the **end** command causes the system to exit configuration mode and return to EXEC mode.

```
switch(config)# hostname george
george(config)# end
switch#
```

Related Commands	Command	Description
	exit	Exits configuration mode, or any of the configuration modes.

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enrollment terminal

To enable manual cut-and-paste certificate enrollment through the switch console, use the **enrollment terminal** command in trust point configuration submode. To revert to the default certificate enrollment process, use the **no** form of the command.

enrollment terminal

no enrollment terminal

Syntax Description

This command has no arguments or keywords.

Defaults

The default enrollment method is manual cut-and-paste, which is the only enrollment method that the MDS switch currently supports.

Command Modes

Trust point configuration submode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure trust point enrollment through the switch console:

```
switch# config terminal
switch(config)# crypto ca trustpoint admin-ca
switch(config-trustpoint)# enrollment terminal
```

The following example shows how to discard a trust point enrollment through the switch console.

```
switch(config)# crypto ca trustpoint admin-ca
switch(config-trustpoint)# no enrollment terminal
```

Related Commands

Command	Description
crypto ca authenticate	Authenticates the certificate of the certificate authority.

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errdisable detect cause link-down

To error disable and bring down a port on a link failure, use the **errdisable detect cause link-down** command. To disable this feature, use the **no** form of the command.

errdisable detect cause link-down num-times *{flaps number}* **duration***{sec}*

no errdisable detect cause link-down num-times *{flaps number}* **duration***{sec}*

Syntax Description

num-times Specifies the number of flaps. The range is from 2 to 1023.

flaps number

duration Specifies the duration in seconds. The range is from 1 to 2000000.

sec

Defaults

None.

Command Modes

Interface Configuration mode.

Command History

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

Usage Guidelines

The port guard feature is used in the environments where the system and application does not adapt quickly and efficiently to a port going down and back up or to a port rapidly cycling up and down which can happen in some failure modes. For example, if the port is going up and down once a second, and the system takes five seconds to stabilize after the port goes down, this situation might cause a more severe failure in the fabric.

The port guard feature gives the SAN administrator the ability to prevent this issue from occurring in environments that are vulnerable to these problems. The port can be configured to stay down after the first failure, or after a specified number of failures in a specified time period. This allows the SAN administrator to intervene and control the recovery and avoiding any problems caused by the cycling.

Examples

The following example shows how to configure the port as down when the link flaps once:

```
Switch# configure terminal
Switch (config)# interface fc1/1
Switch (config-if)# errdisable detect cause link-down
```

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The following example shows how to configure the port as down when the link flaps 5 times in 30 seconds:

```
Switch# configure terminal
Switch (config)# interface fc1/1
Switch (config-if)# errdisable detect cause link-down num-times 5 duration 30
```

The following example shows how to remove the port guard feature on the interface:

```
Switch# config t
Switch (config)# interface fc1/1
Switch (config-if)# no errdisable detect cause link-down
switch(config)#
```

Related Commands

Command	Description
device-alias commit	Commits changes to the active device alias database.
device-alias database	Configures and activates the device alias database.
show device-alias	Displays device alias information.

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event

To configure the event statement for the policy, use the **event** command. To delete the event statement for the policy, use the **no** form of the command.

```
event { cli match expression [count countnum] [time seconds] | counter name name entry-val
entry entry-op {eq | ge | gt | le | lt | ne} [exit-val value exit-op {eq | ge | gt | le | lt | ne}] |
fanabsent [fan number] time seconds | fanbad [fan number] time seconds | memory { critical
| minor | severe } | module-failure type failure-type module {slot | all} count repeats [time
seconds] | oir {fan | module | powersupply} {anyoir | insert | remove} [number] |
policy-default count repeats [time seconds] | poweroverbudget [time seconds] | snmp oid oid
get-type {exact | next} entry-op {eq | ge | gt | le | lt | ne} entry-val entry [exit-comb {and |
or}] exit-op {eq | ge | gt | le | lt | ne} exit-val exit exit-time time polling-interval interval |
temperature [module slot] [sensor number] threshold {any | major | minor}}
```

```
no event { cli match expression [count countnum] [time seconds] | counter name name entry-val
entry entry-op {eq | ge | gt | le | lt | ne} [exit-val value exit-op {eq | ge | gt | le | lt | ne}] |
fanabsent [fan number] time seconds | fanbad [fan number] time seconds | memory { critical
| minor | severe } | module-failure type failure-type module {slot | all} count repeats [time
seconds] | oir {fan | module | powersupply} {anyoir | insert | remove} [number] |
policy-default count repeats [time seconds] | poweroverbudget [time seconds] | snmp oid oid
get-type {exact | next} entry-op {eq | ge | gt | le | lt | ne} entry-val entry [exit-comb {and |
or}] exit-op {eq | ge | gt | le | lt | ne} exit-val exit exit-time time polling-interval interval |
temperature [module slot] [sensor number] threshold {any | major | minor}}
```

Syntax Description

cli	Specifies a CLI event specification.
match <i>expression</i>	Specifies the regular expression used to perform the CLI command pattern match. The CLI command must have been successfully parsed before the pattern match is attempted. The pattern match is compared with the fully expanded CLI command string. If the expression contains embedded blanks, enclose it in double quotation mark.
count <i>countnum</i>	(Optional) Specifies the number of matching occurrences before an EEM event is triggered. When a number is not specified, an EEM event is triggered after the first match. The <i>countnum</i> argument must be an integer greater than 0.
time <i>seconds</i>	(Optional) Specifies the time interval during which the one or more occurrences must take place. When the keyword is not specified, no time period check is applied.
counter	Specifies a counter event.
name <i>name</i>	Specifies the name of the counter that will be monitored. The name identifier can be any string value.
entry-val <i>entry</i>	Specifies the value with which the contents of the current counter are compared to decide if a counter event should be raised. The entry value ranges from 0 to 2147483647.

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entry-op <i>op</i>	(Optional) Compares the contents of the current counter with the exit value using a specified operator: •eq—Equal to •ge—Greater than or equal to •gt—Greater than •le—Less than or equal to •lt—Less than •ne—Not equal to
exit-val <i>value</i>	(Optional) Specifies the value with which the contents of the current counter are compared to decide whether the exit criteria are met. The exit value ranges from 0 to 2147483647.
exit-op <i>op</i>	
fanabsent	Specifies fanabsent event specification.
<i>fan number</i>	The fan number range is from 1 to 4.
time <i>seconds</i>	The seconds range is from 0 to 4294967295.
fanbad	Specifies fanbad event specification.
memory	Specifies the memory thresholds event specification.
critical	Specifies critical alert.
minor	Specifies minor alert.
severe	Specifies severe alert.
module-failure	Specifies a module failure event specification.
type	Specifies the type of failure condition.
<i>failure-type</i>	
module <i>slot</i> all	Specifies that one module or all modules must be monitored.
oir	Specifies online-insertion-removal event specification.
fan	Specifies the system fans. Optionally specifies an individual fan.
module	Specifies the system modules. Optionally specifies an individual module.
powersupply	Specifies the system power supplies. Optionally specifies an individual power supply.
anyoir insert remove	Specify the OIR event that triggers the EEM applet. •insert—OIR insert •remove—OIR remove •anyoir—Either OIR insert or OIR remove
<i>number</i>	(Optional) If you selected fan, enter a fan number to monitor for an OIR event. The number is in the range of 1-4. If you selected module, enter a module number to monitor for an OIR event. The number is in the range of 1-10. If you selected powersupply, enter a power supply number to monitor for an OIR event. The number is in the range of 1-3.
policy-default	Specifies the event in the system policy being overridden.
poweroverbudget	Specifies poweroverbudget event specification.
snmp	Specifies a SNMP event specification.
oid <i>oid</i>	Specifies the OID of data element in dot notation.

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get-type	Specifies the type of SNMP get operation to be applied to the object ID specified by the OID value argument.
exact	Retrieves the object ID specified by the OID value argument.
next	Retrieves the object ID that is the alphanumeric successor to the object ID specified by the OID value argument.
exit-comb	(Optional) Indicates the combination of exit conditions that must be met before event monitor is reenabled.
and	(Optional) Specifies that an exit comparison operator, an exit object ID value, and an exit time value must exist.
or	(Optional) Specifies that an exit comparison operator and an exit object ID value or an exit time value must exist.
exit-time <i>time</i>	
polling-interval <i>interval</i>	Specifies the time interval between consecutive polls. The value argument is an integer that represents seconds in the range from 1 to 4294967295. The minimum polling interval is 1 second.
temperature	Specifies temperature event specification.
module <i>slot</i>	(Optional) Specifies module number. The slot range is from 1 to 10.
<i>sensor number</i>	(Optional) Specifies sensor number.
threshold	Specifies major or minor threshold.
any	Specifies major or minor threshold.
major	Specifies major threshold.
mi nor	Specifies minor threshold.

Defaults

None.

Command Modes

Embedded Event Manager.

Command History

Release	Modification
NX-OS 4.1(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to specify the event criteria for an EEM applet that is run by matching a Cisco NX-OS command line interface (CLI) command.

```
switch(config-applet)# event cli match "shutdown"
```

The following example show how to specify an event criteria for an EEM applet that is run when the defined critical_errors counter exceeds the entry value:

```
switch(config)# event manager applet eventcntr-applet
switch(config-applet)# event counter name critical_errors entry-val 3 entry-op gt
switch(config-applet)#
```

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This following example shows how to specify that an EEM applet runs when a fan absent event occurs:

```
switch# configure terminal
switch(config)# event manager applet absent-applet
switch(config-applet)# event fanabsent time 42
switch(config-applet)#
```

The example example shows how to specify that an EEM applet runs when a fan absent event occurs:

```
switch# configure terminal
switch(config)# event manager applet bad-applet
switch(config-applet)# event fanbad time 42
switch(config-applet)#
```

The example shows how to specify that an EEM applet runs when a module failure event occurs:

```
switch# configure terminal
switch(config)# event manager applet modfail-applet
switch(config-applet)# event module-failure type unexpected-registration module 6 count 2
switch(config-applet)#
```

The following example shows how to specify that an EEM applet be run on the basis of an event raised when a module OIR occurs:

```
switch# configure terminal
switch(config)# event manager applet oir-applet
switch(config-applet)# event oir module anyoir
switch(config-applet)#
```

The following example shows how to use the event in the system policy being overridden:

```
switch# configure terminal
switch(config)# event policy-default count 6
switch(config)#
```

The following example shows how to specify the event criteria for an EEM applet that is run by sampling SNMP object identifier values:

```
switch# configure terminal
switch(config)# event manager applet snmp-applet
switch(config-applet)# event snmp oid 4.2.1.6 get-type next entry-op eq entry-val 42
poll-interval 2
switch(config-applet)#
```

The following example shows how to specify that an EEM applet runs when a temperature event occurs:

```
switch# configure terminal
switch(config)# event manager applet temp-applet
switch(config-applet)# event temperature threshold major
switch(config-applet)#
```

Related Commands

Command	Description
show event manager policy	Displays the register Embedded Event manager policies.

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event manager applet

To register an applet with the Embedded Event Manager (EEM) and to enter applet configuration mode, use the **event manager applet** command.

event manager applet *applet-name*

Syntax Description	<i>applet-name</i>	The applet name can be any case-sensitive alphanumeric string up to 29 characters.
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Defaults	None.
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Command Modes	Embedded Event Manager.
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Command History	Release	Modification
	NX-OS 4.1(3)	This command was introduced.

Usage Guidelines	None.
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Examples	This example shows how to register an applet with EEM and to enter applet configuration mode:
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```
switch# configure terminal
switch(config)# event manager applet eem-applet
switch(config-applet)#
```

Related Commands	Command	Description
	show event manager policy	Displays the register Embedded Event manager policies.

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event manager policy

To register and activate an Embedded Event Manager policy (EEM) script policy, use the **event manager policy** command.

event manager policy *policy-script*

no event manager policy *policy-script*

Syntax Description	<i>policy-script</i> Specifies the EEM policy script. This name becomes the name of the EEM policy. The maximum size is 29 characters.					
Defaults	None.					
Command Modes	EXEC mode.					
Command History	<table><tr><th>Release</th><th>Modification</th></tr><tr><td>NX-OS 4.1(3)</td><td>This command was introduced.</td></tr></table>		Release	Modification	NX-OS 4.1(3)	This command was introduced.
Release	Modification					
NX-OS 4.1(3)	This command was introduced.					
Usage Guidelines	The EEM schedules and runs policies on the basis of an event specification that is contained within the policy itself. When the event manager policy command is invoked, the EEM examines the policy and registers it to be run when the specified event occurs.					
Examples	The following example shows how to register a policy: switch# configure terminal switch(config)# event manager policy modulescript switch(config)#					
Related Commands	<table><tr><th>Command</th><th>Description</th></tr><tr><td>event manager applet</td><td>Displays an applet with the Emedded Event manager.</td></tr></table>		Command	Description	event manager applet	Displays an applet with the Emedded Event manager.
Command	Description					
event manager applet	Displays an applet with the Emedded Event manager.					

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event manager environment

To configure an EEM environment variable, use the **event manager environment** command. To disable an EEM environment variable, use the **no** form of the command.

event manager environment *variable-name variable-value*

no event manager environment *variable-name variable-value*

Syntax Description	<i>variable-name</i>	Specifies the name of the EEM environment variable. The variable name can be any case-sensitive alphanumeric string up to 32 characters.
	<i>variable-value</i>	Specifies the value of the EEM environment. The variable name can be any case-sensitive alphanumeric string up to 32 characters.

Defaults	None.
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Command Modes	Embedded Event Manager.
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Command History	Release	Modification
	NX-OS 4.1(3)	This command was introduced.

Usage Guidelines	None.
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Examples	The following example shows how to set an EEM environment variable:
	<pre>switch# configure terminal switch(config)# event manager environment emailto "admin@anyplace.com" switch(config)#</pre>

Related Commands	Command	Description
	show event manager policy	Displays the register Embedded Event manager policies.
	show event manager environment	Displays the name and value of the Embedded Event manager.

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exit

To exit any configuration mode or close an active terminal session and terminate the EXEC, use the **exit** command at the system prompt.

exit

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC and configuration modes.

Command History	Release	Modification
	4.1(1b)	Modified the command output.
	1.0(2)	This command was introduced.

Usage Guidelines Use the **exit** command at the EXEC levels to exit the EXEC mode. Use the **exit** command at the configuration level to return to privileged EXEC mode. Use the **exit** command in interface configuration mode to return to configuration mode. You also can press **Ctrl-Z**, or use the **end** command, from any configuration mode to return to EXEC mode.



Note

The **exit** command is associated with privilege level 0. If you configure AAA authorization for a privilege level greater than 0, this command will not be included in the command set for that privilege level.

Examples The following example displays an exit from the submode:

```
switch(config-port-monitor)# exit
switch(config)#
```

The following example displays an exit from the interface configuration mode for VRRP to return to the interface configuration mode.

```
switch(config-if-vrrp)# exit
switch(config-if)#
```

The following example displays an exit from the interface configuration mode to return to the configuration mode.

```
switch(config-if)# exit
switch(config)#
```

The following example shows how to exit an active session (log-out).

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```
switch# exit
```

Related Commands

Command	Description
end	Returns you to EXEC mode.

 exit

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