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CHAPTER 14

L 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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lifetime seconds

To configure the security association (SA) lifetime duration for an IKE protocol policy, use the **lifetime seconds** command in IKE policy configuration submode. To revert to the default, use the **no** form of the command.

lifetime seconds *seconds*

no lifetime seconds *seconds*

Syntax Description	<i>seconds</i>	Specifies the lifetime duration in seconds. The range is 600 to 86400.
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Defaults	86,400 seconds.
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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. The lifetime seconds command overrides the default.
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Examples	<p>The following example shows how to configure the SA lifetime duration for the IKE protocol:</p> <pre>switch# config terminal switch(config)# crypto ike domain ipsec switch(config-ike-ipsec)# policy 1 switch(config-ike-ipsec-policy)# lifetime seconds 6000</pre>
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Related Commands	Command	Description
	crypto ike domain ipsec	Enters IKE configuration mode.
crypto ike enable	Enables the IKE protocol.	
policy	Configures IKE protocol policy.	
show crypto ike domain ipsec	Displays IKE information for the IPsec domain.	

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line com1

To configure auxiliary COM 1 port, use the **line com1** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

```
line com1 --> databits number | flowcontrol hardware | modem {in | init-string {default | user-input} | set-string user-input string} | parity {even | none | odd} | speed speed | stopbits {1 | 2}
```

```
no line com1 --> databits number | flowcontrol hardware | modem {in | init-string | set-string user-input} | parity {even | none | odd} | speed speed | stopbits {1 | 2}
```

Syntax Description

databits <i>number</i>	Specifies the number of databits per character. The range is 5 to 8.
flowcontrol hardware	Enables modem flow on the COM1 port control.
modem	Enables the modem mode.
in	Enables the COM 1 port to only connect to a modem.
init-string default	Writes the default initialization string to the modem.
set-string user-input <i>string</i>	Sets the user-specified initialization string to its corresponding profile. Maximum length is 80 characters.
init-string user-default	Writes the provided initialization string to the modem.
parity	Sets terminal parity.
even	Sets even parity.
none	Sets no parity.
odd	Sets odd parity.
speed <i>speed</i>	Sets the transmit and receive speeds. The range is 110 to 115, 200 baud.
stopbits	Sets async line stopbits.
1	Sets one stop bit.
2	Sets two stop bits.

Defaults

9600 Baud
8 databits
1 stopbit
Parity none
Default init string

Command Modes

Configuration mode.

Command History

Release	Modification
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1.2(2)	This command was introduced.
3.0(1)	Added an example to show the user-input initialization string for the Supervisor-2 module.

Usage Guidelines

The **line com1** command available in **config t** command mode. The **line com1** configuration commands are available in **config-com1** submode.

You can perform the configuration specified in this section only if you are connected to the console port or the COM1 port.

We recommend you use the default initialization string. If the required options are not provided in the user-input string, the initialization string is not processed.

You must first set the user-input string before initializing the string.

For additional information on the user-input initialization string for the Supervisor-1 and Supervisor-2 modules, refer to the *Cisco SAN-OS MDS 9000 Family CLI Configuration Guide*.

Examples

The following example configures a line console and sets the options for that terminal line:

```
switch## config terminal
switch(config)#
switch(config)# line com1
switch(config-com1)# databits 6
switch(config-com1)# parity even
switch(config-com1)# stopbits 1
```

The following example disables the current modem from executing its functions:

```
switch# config terminal
switch(config)# line com1
switch(config-com1)# no modem in
```

The following example enables (default) the COM1 port to only connect to a modem:

```
switch# config terminal
switch(config)# line com1
switch(config-com1)# modem in
```

The following example writes the initialization string to the modem. This is the default.

```
switch# config terminal
switch(config)# line com1
switch(config-com1)# modem init-string default
```

The following example assigns the user-specified initialization string for a Supervisor-1 module to its corresponding profile:

```
switch# config terminal
switch(config)# line com1
switch(config-com1)# modem set-string user-input ATE0Q1&D2&C1S0=3\015
```

The following example assigns the user-specified initialization string for a Supervisor-2 module to its corresponding profile:

```
switch# config terminal
switch(config)# line com1
switch(config-com1)# modem set-string user-input ATE0Q0V1&D0&C0S0=1
```

The following example deletes the configured initialization string:

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```
switch# config terminal
switch(config)# line com1
switch(config-com1)# no modem set-string user-input ATE0Q1&D2&C1S0=3\015
```

The following example writes the user-specified initialization string to the modem:

```
switch# config terminal
switch(config)# line com1
switch(config-com1)# modem init-string user-input
```

Related Commands

Command	Description
line console	Configures primary terminal line.
line vty	Configures virtual terminal line.
show line com1	Displays COM1 information.

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line console

To configure a terminal line, use the **line console** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

line console --> **databits** *number* | **exec-timeout** *minutes* | **modem** { **in** | **init-string** | **set-string user-input** } | **parity** { **even** | **none** | **odd** } | **speed** *speed* | **stopbits** { **1** | **2** }

no line console --> **databits** *number* | **exec-timeout** *minutes* | **modem** { **in** | **init-string** { **default** | **user-input** } | **set-string user-input** *string* } | **parity** { **even** | **none** | **odd** } | **speed** *speed* | **stopbits** { **1** | **2** }

Syntax Description

databits <i>number</i>	Specifies the number of databits per character. The range is 5 to 8.
exec-timeout <i>minutes</i>	Configures exec timeout in minutes. The range is 0 to 525,600. To disable, set to 0 minutes.
modem	Enables the modem mode.
in	Enables the COM 1 port to only connect to a modem.
init-string default	Writes the default initialization string to the modem.
init-string user-input	Writes the provided initialization string to the modem.
set-string user-input <i>string</i>	Sets the user-specified initialization string to its corresponding profile. Maximum length is 80 characters.
parity	Sets terminal parity.
even	Sets even parity.
none	Sets no parity.
odd	Sets odd parity.
speed <i>speed</i>	Sets the transmit and receive speeds. Valid values for Supervisor-1 modules are between 110 and 115,200 bps (110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 57600, 115200). Valid values for Supervisor-2 modules are 9600, 19200, 38400, and 115200.
stopbits	Sets async line stopbits.
1	Sets one stop bit.
2	Sets two stop bits.

Defaults

9600 Baud.
8 databits.
1 stopbit.
Parity none.
Default init string.

Command Modes

Configuration mode.

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Command History	Release	Modification
	1.2(2)	This command was introduced.
	3.0(1)	Modified the speed option by specifying speeds for the Supervisor-1 module and Supervisor-2 module.

Usage Guidelines

The **line console** command available in **config t** command mode. The **line console** configuration commands are available in config-console submode.

When setting the **speed** option, be sure to specify one of the exact values.

Examples

The following example configures a line console and sets the options for that terminal line:

```
switch## config terminal
switch(config)##
switch(config)# line console
switch(config-console)# databits 60
switch(config-console)# exec-timeout 60
switch(config-console)# flowcontrol software
switch(config-console)# parity even
switch(config-console)# stopbits 1
```

The following example disables the current modem from executing its functions:

```
switch# config terminal
switch(config)# line console
switch(config-console)# no modem in
```

The following example enables (default) the COM1 port to only connect to a modem:

```
switch# config terminal
switch(config)# line console
switch(config-console)# modem in
```

The following example writes the initialization string to the modem. This is the default.

```
switch# config terminal
switch(config)# line console
switch(config-console)# modem init-string default
```

The following example assigns the user-specified initialization string to its corresponding profile:

```
switch# config terminal
switch(config)# line console
switch(config-console)# modem set-string user-input ATE0Q1&D2&C1S0=3\015
```

The following example deletes the configured initialization string:

```
switch# config terminal
switch(config)# line console
switch(config-console)# no modem set-string user-input ATE0Q1&D2&C1S0=3\015
```

The following example writes the user-specified initialization string to the modem:

```
switch# config terminal
```

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```
switch(config)# line console  
switch(config-console)# modem init-string user-input
```

Related Commands

Command	Description
line vty	Configures virtual terminal line.
line com1	Configures the auxiliary COM 1 port
show line console	Displays console information.

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line vty

To configure a virtual terminal line, use the **line vty** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

line vty -->exec-timeout *minutes* | **session-limit** *number*

no line vty --> exec-timeout | **session-limit** *number*

Syntax Description	exec-timeout <i>minutes</i>	Configures timeout in minutes. The range is 0 to 525600. To disable, set to 0 minutes.
	session-limit <i>number</i>	Configures the number of VSH sessions. The range is 1 to 64.

Defaults None.

Command Modes Configuration mode.

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

Usage Guidelines The **line vty** command is available in **config t** command mode. The **line vty** configuration commands are available in config-line submode.

Examples The following example configures a virtual terminal line and sets the timeout for that line:

```
switch## config terminal
switch(config)# line vty
switch(config-line)# exec-timeout 60
```

Related Commands	Command	Description
	line console	Configures primary terminal line.
	line com1	Configures the auxiliary COM 1 port

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link (SDV virtual device configuration submode)

To link a virtual device to a real device, use the **link** command in SDV virtual device configuration submode. To remove a link, use the **no** form of the command.

link { **device-alias** *device-name* | **pwwn** *pwwn-name* }

no link { **device-alias** *device-name* | **pwwn** *pwwn-name* }

Syntax Description	device-alias	Links a virtual device to a device alias.
	<i>device-name</i>	
	pwwn <i>pwwn-name</i>	Links a virtual device to a pWWN. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> , where <i>h</i> is a hexadecimal number.

Defaults None.

Command Modes SDV virtual device configuration submode.

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

Usage Guidelines None.

Examples The following example shows how to link a virtual device to a device alias:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# sdv virtual-device name sqal vsan 1
switch(config-sdv-virt-dev)# link device-alias sqa3
```

The following example shows how to link a virtual device to a pWWN:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# sdv virtual-device name sqal vsan 1
switch(config-sdv-virt-dev)# link pwwn 21:00:00:04:cf:cf:45:40
```

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

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link-state-trap

To enable an SNMP link state trap on an interface, use the **link-state-trap** command in interface configuration submode. To disable an SNMP link state trap, use the **no** form of the command.

link-state-trap

no link-state-trap

Syntax Description This command has no arguments or keywords.

Defaults Enabled.

Command Modes Interface configuration submode.

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

Usage Guidelines None.

Examples The following example shows how to enable an SNMP link state trap on interface bay2:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# interface bay 2
switch(config-if)# link-state-trap
```

The following example shows how to disable an SNMP link state trap on interface bay2:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# interface bay 2
switch(config-if)# no link-state-trap
```

Related Commands	Command	Description
	show interface	Displays interface information.

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link-state-trap (SME)

To enable an Simple Network Management Protocol (SNMP) link state trap on an interface, use the **link-state-trap** command. To disable this feature, use the **no** form of the command.

link-state-trap

no link-state-trap

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes Interface configuration submode.

Command History	Release	Modification
	3.2(2)	This command was introduced.

Usage Guidelines None.

Examples The following example enables the link-state-trap on the SME interface:

```
switch# config t
switch(config)# interface sme 4/1
switch(config-if)# link-state-trap
```

The following example disables the link-state-trap on the SME interface:

```
switch# config t
switch(config)# interface sme 4/1
switch(config-if)# no link-state-trap
```

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load-balancing

To enable cluster reload balancing for all targets or specific targets, use the **load-balancing** command. To disable this command, use the **no** form of the command.

load-balancing { **enable** | *target wwn* }

no load-balancing { **enable** | *target wwn* }

Syntax Description

enable	Enables cluster load balancing.
<i>target wwn</i>	Specifies the world-wide name (WWN) of the target port.

Defaults

None.

Command Modes

Cisco SME cluster configuration submode.

Command History

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

Usage Guidelines

The reload balancing operation is performed by the Cisco SME administrator for all or specific target ports. This operation first unbinds all the targets from the Cisco SME interfaces. The targets are then associated, one at a time, based on the load-balancing algorithm.

The reload balancing operation can be triggered if the targets remain unconnected due to errors in the prior load balancing operations in the backend.

Examples

The following example enables reload balancing in Cisco SME:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# load-balancing enable
switch(config-sme-cl-node)#
```

The following example adds the host to the Cisco SME interface based on the load-balancing policy:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# load-balancing 17:11:34:44:44:12:14:10
switch(config-sme-cl-node)#
```

Related Commands

Command	Description
show sme cluster	Displays Cisco SME information.

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logging abort

To discard the logging Cisco Fabric Services (CFS) distribution session in progress, use the **logging abort** command in configuration mode.

logging abort

Syntax Description This command has no other arguments or keywords.

Defaults None.

Command Modes Configuration mode.

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

Usage Guidelines None.

Examples The following example shows how to discard logging CFS distribution session in progress:

```
switch# config terminal
switch(config)# logging abort
```

Related Commands	Command	Description
	show logging	Displays logging information.

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logging commit

To apply the pending configuration pertaining to the logging Cisco Fabric Services (CFS) distribution session in progress in the fabric, use the **logging commit** command in configuration mode.

logging commit

Syntax Description This command has no other arguments or keywords.

Defaults None.

Command Modes Configuration mode.

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

Usage Guidelines None.

Examples The following example shows how to commit changes to the active logging configuration:

```
switch# config terminal
switch(config)# logging commit
```

Related Commands	Command	Description
	show logging	Displays logging information.

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logging console

To set console logging, use the **logging console** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

logging console [*severity-level*]

no logging console [*severity-level*]

Syntax Description	<i>severity-level</i> (Optional) Specifies the maximum severity of messages logged. The range is 0 to 7, where 0 is emergency, 1 is alert, 2 is critical, 3 is error, 4 is warning, 5 is notify, 6 is informational, and 7 is debugging.				
Defaults	Disabled. The default severity level is 2.				
Command Modes	Configuration mode.				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>1.0(2)</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.0(2)	This command was introduced.
Release	Modification				
1.0(2)	This command was introduced.				
Usage Guidelines	The switch logs messages at or above the configured severity level.				
Examples	<p>The following example reverts console logging to the factory set default severity level of 2 (critical). Logging messages with a severity level of 2 or above will be displayed on the console.</p> <pre>switch# config terminal switch(config)# logging console 2</pre>				
Related Commands	<table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>show logging</td> <td>Displays logging configuration information.</td> </tr> </tbody> </table>	Command	Description	show logging	Displays logging configuration information.
Command	Description				
show logging	Displays logging configuration information.				

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logging distribute

To enable Cisco Fabric Services (CFS) distribution for logging, use the **logging distribute** command. To disable this feature, use the **no** form of the command.

logging distribute

no logging distribute

Syntax Description This command has no other arguments or keywords.

Defaults Disabled.

Command Modes Configuration mode.

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

Usage Guidelines Before distributing the Fibre Channel timer changes to the fabric, the temporary changes to the configuration must be committed to the active configuration using the **logging commit** command.

Examples The following example shows how to change the distribute logging configuration changes:

```
switch# config terminal
switch(config)# logging distribute
```

Related Commands	Command	Description
	logging commit	Commits the logging configuration changes to the active configuration.
	show logging	Displays logging information.

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logging level

To modify message logging facilities, use the **logging level** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

logging level *facility-name severity-level*

no logging level *facility-name severity-level*

Syntax Description	<i>facility-name</i>	Specifies the required facility name (for example acl , or ivr , or port , etc.)
	<i>severity-level</i>	Specifies the maximum severity of messages logged. The range is 0 to 7, where 0 is emergency, 1 is alert, 2 is critical, 3 is error, 4 is warning, 5 is notify, 6 is informational, and 7 is debugging.

Defaults Disabled.

Command Modes Configuration mode.

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

Usage Guidelines The switch logs messages at or above the configured severity level.

Examples Configures Telnet or SSH logging for the kernel facility at level 4 (warning). As a result, logging messages with a severity level of 4 or above will be displayed:

```
switch# config terminal
switch(config)# logging level kernel 4
```

Related Commands	Command	Description
	show logging	Displays logging configuration information.

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logging logfile

To set message logging for logfile, use the **logging logfile** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

logging logfile *filename severity-level* [**size** *filesize*]

no logging logfile *filename severity-level* [**size** *filesize*]

Syntax Description		
	<i>filename</i>	Specifies the log filename. Maximum length is 80 characters.
	<i>severity-level</i>	Specifies the maximum severity of messages logged. The range is 0 to 7, where 0 is emergency, 1 is alert, 2 is critical, 3 is error, 4 is warning, 5 is notify, 6 is informational, and 7 is debugging.
	size <i>filesize</i>	(Optional) Specifies the log file size. The range is 4096 to 4194304 bytes.

Defaults None.

Command Modes Configuration mode.

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

Usage Guidelines The switch logs messages at or above the configured severity level.

Examples The following example configures logging information for errors or events above a severity level of 3 (errors) to be logged in a file named ManagerLogFile. By configuring this limit, the file size is restricted to 3,000,000 bytes:

```
switch# config terminal
switch(config)# logging logfile ManagerLogFile 3 size 3000000
```

Related Commands	Command	Description
	show logging	Displays logging configuration information.

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logging module

To set message logging for linecards, use the **logging module** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

logging module [*severity-level*]

no logging module [*severity-level*]

Syntax Description	<i>severity-level</i>	(Optional) Specifies the maximum severity of messages logged. The range is 0 to 7, where 0 is emergency, 1 is alert, 2 is critical, 3 is error, 4 is warning, 5 is notify, 6 is informational, and 7 is debugging.				
Defaults	None.					
Command Modes	Configuration mode.					
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>1.0(2)</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.0(2)	This command was introduced.	
Release	Modification					
1.0(2)	This command was introduced.					
Usage Guidelines	None.					
Examples	<p>The following example sets message logging for modules at level 7:</p> <pre>switch## config terminal switch(config)# logging module 7</pre>					
Related Commands	<table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>show logging</td> <td>Displays logging configuration information.</td> </tr> </tbody> </table>	Command	Description	show logging	Displays logging configuration information.	
Command	Description					
show logging	Displays logging configuration information.					

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logging monitor

To set monitor message logging, use the **logging monitor** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

logging monitor *severity level*

Syntax Description	logging monitor	Sets message logging.
	<i>severity level</i>	Specifies the maximum severity of messages logged. The range is 0 to 7, where 0 is emergency, 1 is alert, 2 is critical, 3 is error, 4 is warning, 5 is notify, 6 is informational, and 7 is debugging.

Defaults None.

Command Modes Configuration mode.

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

Usage Guidelines None.

Examples The following example sets terminal line (monitor) message logging at level 2:

```
switch## config terminal
switch(config)# logging monitor 2
```

Related Commands	Command	Description
	show logging	Displays logging configuration information.

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logging server

To set message logging for the remote server, use the **logging server** command.

```
logging server [hostname | ip address severity_level | facility auth | authpriv | cron | daemon | ftp
| kernel | local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7 | lpr | mail | news |
syslog | user | uucp]
```

Syntax	Description
logging server	Sets message logging for remote server.
<i>hostname</i>	Specifies the host name for remote server.
<i>ip address</i>	Specifies IP address for the remote server.
<i>severity_level</i>	Specifies the maximum severity of messages logged. The range is 0 to 7, where 0 is emergency, 1 is alert, 2 is critical, 3 is error, 4 is warning, 5 is notify, 6 is informational, and 7 is debugging.
facility	Specifies facility to use when forwarding to server.
auth	Specifies auth facility.
authpriv	Specifies authpriv facility.
cron	Specifies Cron/at facility.
daemon	Specifies daemon facility.
ftp	Specifies file transfer system facility.
kernel	Specifies kernel facility.
local0	Specifies local0 facility.
local1	Specifies local1 facility.
local2	Specifies local2 facility.
local3	Specifies local3 facility.
local4	Specifies local4 facility.
local5	Specifies local5 facility.
local6	Specifies local6 facility.
local7	Specifies local7 facility.
lpr	Specifies lpr facility.
mail	Specifies mail facility.
news	USENET news facility.
syslog	Specifies use syslog facility.
user	Specifies user facility.
uucp	Specifies Unix-to-Unix copy system facility.

Defaults None.

Command Modes Configuration mode.

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

Usage Guidelines None.

Examples Enable message logging to the specified remote server for level 7 messages:

```
switch## config terminal  
switch(config)# logging sever sanjose 7
```

Related Commands	Command	Description
	show logging	Displays logging configuration information.

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logging timestamp

To set the time increment for the message logging time stamp, use the **logging timestamp** command. To negate the previously issued command or to revert to factory defaults, use the **no** form of the command.

logging timestamp {microseconds | milliseconds | seconds}

no logging timestamp {microseconds | milliseconds | seconds}

Syntax Description	microseconds	Sets the logging time stamp to microseconds.
	milliseconds	Sets the logging time stamp to milliseconds.
	seconds	Sets the logging time stamp to seconds.

Defaults Seconds.

Command Modes Configuration mode.

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

Usage Guidelines None.

Examples The following example sets the logging time stamp to milliseconds:

```
switch## config terminal
switch(config)# logging timestamp milliseconds
```

Related Commands	Command	Description
	show logging	Displays logging configuration information.