

set logout

Use the **set logout** command to set the number of minutes until the system disconnects an idle session automatically.

set logout *timeout*

Syntax Description

timeout Number of minutes (0 to 10,000) until the system disconnects an idle session automatically. Setting the value to 0 disables the automatic disconnection of idle sessions.

Default

The default value is 20 minutes.

Command Type

Switch command.

Command Mode

Privileged.

Examples

This example shows how to set the number of minutes until the system disconnects an idle session automatically:

```
Console> (enable) set logout 20
Sessions will be automatically logged out after 20 minutes of idle time.
Console> (enable)
```

This example shows how to disable the automatic disconnection of idle sessions:

```
Console> (enable) set logout 0
Sessions will not be automatically logged out.
Console> (enable)
```

set mls

Use the **set mls** command set to configure the MLS feature in the Catalyst 5000, 2926G, and 2926 series switches.

```
set mls agingtime [agingtime]  
set mls disable  
set mls enable  
set mls include {route_processor_ip | route_processor_name}  
set mls statistics protocol protocol port_num
```

Syntax Description

agingtime	Keyword to specify the aging time (in seconds) for an MLS entry.
<i>agingtime</i>	(Optional) MLS aging time of shortcuts to an MLS entry.
disable	Keyword to disable IP shortcut functions on the Catalyst 5000, 2926G, and 2926 series switches, disable any NFCP message processing, delete any existing shortcut entries, and prevent new shortcut entries from being established.
enable	Keyword to enable IP shortcut functions on the switch, enable NFCP message processing, and allow new shortcut entries to be established.
include	Keyword to include the specified routers to participate in MLS.
<i>route_processor_ip</i>	Router IP address if DNS is enabled.
<i>route_processor_name</i>	Name of the router if DNS is enabled.
statistics	Keyword to set protocols for statistics collection.
protocol	Keyword to specify protocols.
<i>protocol</i>	Number of protocol.
<i>port_num</i>	Number of the port.

Default

The default agingtime is set to 256 seconds.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

This command is not supported on the Catalyst 4000 and 2948G series switches.

If you are entering any of the **set mls** commands on a Catalyst 5000, 2926G, or 2926 series switch without MLS, the following warning message is displayed:

```
MLS not supported on feature card.
```

When you set the *agingtime*, it can be configured as multiples of 8 seconds in the range of 8 to 2032 seconds. The values are picked up in numerical order to achieve efficient aging. Any value for *agingtime* that is not a multiple of 8 seconds is adjusted to the closest one. For example, 65 is adjusted to 64, while 127 is adjusted to 128.

The **set mls disable** command disables IP shortcut functions on the Catalyst 5000, 2926G, and 2926 series switches, does not process any NFCP messages, deletes any existing shortcut entries, and prevents new ones from being established.

The **set mls enable** command enables the IP shortcut function on this device, processes NFCP messages, and establishes shortcuts for IP data packets.

The Catalyst 5000, 2926G, and 2926 series switches do not process NFCP messages from routers that are not configured to participate in MLS. You must use the **set mls include** command to configure a router to participate in MLS. You can specify multiple router entries on the same command line. The included router entries are saved in NVRAM and retained across a power cycle.

You must enable DNS to resolve the router's IP address.

You can configure only 64 ports using the **set mls statistics protocol** command.

Examples

These examples show how to use the **set mls** command set to configure MLS:

```
Console>(enable) set mls agingtime 512  
Multilayer switching aging time set to 512 seconds.  
Console> (enable)
```

```
Console> (enable) set mls disable  
Multilayer switching disabled  
Console> (enable)
```

```
Console> (enable) set mls enable  
Multilayer switching enabled  
Console> (enable)
```

```
Console> (enable) set mls include 170.170.2.1  
Multilayer switching enabled for router 170.170.2.1  
Console> (enable)
```

```
console>(enable) set mls statistics protocol 17 1934  
Protocol 17 port 1934 is added to protocol statistics list.  
Console> (enable)
```

Related Commands

- set mls nde**
- clear mls**
- show mls**
- show mls statistics**

set mls agingtime fast

Use the **set mls agingtime fast** command to specify the MLS aging time of shortcuts to an MLS entry that has no more than *pkt_threshold* packets switched within *fastagingtime* seconds after it is created.

```
set mls agingtime fast [fastagingtime] [pkt_threshold]
```

Syntax Description

fastagingtime (Optional) Valid values are multiples of 8 to any value in the range of 0 to 128 seconds. 0 disables fast aging. If a value is not specified, the default value is used.

pkt_threshold (Optional) Valid values are 0, 1, 3, 7, 15, 31, 63, and 127 packets. If a value is not specified, the default value is used.

Default

The default *fastagingtime* is 0, no fast aging. The default *pkt_threshold* is 0.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

This command is not supported on the Catalyst 4000 and 2948G series switches.

If you enter any of the **set mls agingtime fast** commands on a Catalyst 5000, 2926G, or 2926 series switch without MLS, the following warning message displays:

```
mls not supported on feature card.
```

When you set the *fastagingtime*, it can be configured as multiples of 8 to any value in the range of 0 to 128 seconds.

The default *pkt_threshold* is 0. It can be configured as one of the 0, 1, 3, 7, 15, 31, 63, and 127 (the values picked for efficient aging). If *fastagingtime* is not configured exactly the same among these values, it is adjusted to the closest one. A typical value for *fastagingtime* and *pkt_threshold* is 32 seconds and 0 packet, respectively (it means no packet switched within 32 seconds after the entry created).

Agingtime applies to an MLS entry that has no more than *pkt_threshold* packets switched within *fastagingtime* seconds after it is created. A typical example is the MLS entry destined to/sourced from a DNS or TFTP server. This entry may never be used again after it is created. For example, only one request goes to a server and one reply returns from the server, and then the connection is closed.

The **agingtime fast** option is used to purge entries associated with very short flows, such as DNS and TFTP.

We recommend that you keep the number of MLS entries in the MLS cache below 32K. If the number of MLS entries is more than 32K, some flows (less than 1 percent) are sent to the router.

To keep the number of MLS cache entries below 32K, decrease the aging time. Aging time can be decreased up to 8 seconds. If your switch has a lot of short flows that are used by only a few packets, then you can use fast aging.

If cache entries continue to exceed 32K, decrease the normal agingtime in 64-second increments from the 256-second default.

Example

This example shows how to use the **set mls agingtime fast** command to set the agingtime:

```
Console>(enable) set mls agingtime fast 32 0
Multilayer switching fast aging time set to 32 seconds for entries with no more than 0
packet switched.
Console> (enable)
```

Related Commands

set mls nde

clear mls

show mls

show mls statistics

set mls flow

Use the **set mls flow** command to specify the minimum flow mask used for MLS. This command is needed to collect statistics for the supervisor engine module.

set mls flow destination | destination-source | full



Caution Use this command carefully. This command *purges all existing shortcuts* and affects the number of active shortcuts. This command can increase the cache usage and increase the load on the router.



Caution Be extremely careful if you enter this command and the Catalyst 5000, 2926G, or 2926 series switch already has a large number of shortcuts (greater than 16K).



Caution Do not place this command in scripts that are frequently executed—you might purge all the MLS cache entries.

Syntax Description

destination	Keyword to set the flow mask to destination flow.
destination-source	Keyword to set the flow mask to source flow.
full	Keyword to set the flow mask to an extended access list.

Default

If there are no access lists on any MLS-RP, the flow mask is set to destination flow.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

This command is not supported on the Catalyst 4000 and 2948G series switches.

This command is needed to collect statistics for the supervisor engine module. If the supervisor engine module changes the flow mask in the background frequently, all the shortcuts are purged every time.

Aging time may have to be decreased to reduce the increase in number of flows due to this command. This command is intended to be used for gathering very detailed statistics at the protocol port level; for example, when Netflow Data is exported to an RMON-II probe.

The flow mask is either destination-source or full flow even if no access lists are on MLS-RP.

Examples

These examples show how to specify that only expired flows to subnet 171.69.194.0 are exported:

```
console> (enable) set mls flow destination  
Configured flow mask is set to destination flow.  
console> (enable)  
  
console> (enable) set mls flow destination-source  
Configured flow mask is set to destination-source flow.  
console> (enable)  
  
console> (enable) set mls flow full  
Configured flow mask is set to full flow.  
console> (enable)
```

Related Commands

clear mls
show mls
set mls

set mls nde

Use the **set mls nde** command set to configure the NetFlow Data Export (NDE) feature in the Catalyst 5000, 2926G, and 2926 series switches to allow command exporting statistics to be sent to the preconfigured collector.

```
set mls nde { disable | enable }
set mls nde { collector_ip | collector_name } { udp_port_num }
set mls nde flow [destination ip_addr_spec] [source ip_addr_spec] [protocol protocol]
[src-port port_number] [dst-port port_number]
```

Syntax Description

disable	Keyword to disable NDE.
enable	Keyword to enable NDE.
<i>collector_ip</i>	IP address of the collector if DNS is enabled.
<i>collector_name</i>	Name of the collector if DNS is enabled.
<i>udp_port_num</i>	Number of the UDP port to receive the exported statistics.
flow	Keyword to add filtering to NDE.
destination	(Optional) Keyword to specify the destination IP address.
<i>ip_addr_spec</i>	(Optional) Full IP address or a subnet address in these formats: <i>ip_subnet_addr</i> , <i>ip_addr/subnet_mask</i> , or <i>ip_addr/#subnet_mask_bits</i> .
source	(Optional) Keyword to specify the source IP address.
protocol	(Optional) Keyword to specify the protocol type.
<i>protocol</i>	(Optional) Protocol type; valid values can be 0, tcp, udp, icmp, or a decimal number for other protocol families. 0 indicates “do not care.” If the protocol is not tcp or udp, we recommend that you set the dst-port <i>port_number</i> and src-port <i>port_number</i> values to 0; otherwise, no flows are displayed.
src-port	(Optional) Keyword to specify the number of the source port. Used with dst-port to specify the port pair if the protocol is tcp or udp. 0 indicates “do not care.” If the protocol is not tcp or udp, we recommend that you set the src-port value to 0; otherwise, no flows are displayed.
<i>port_number</i>	Number of the TCP/UDP port (decimal).
dst-port	(Optional) Keyword to specify the number of the destination port. Used with src-port to specify the port pair if the protocol is tcp or udp. 0 indicates “do not care.” If the protocol is not tcp or udp, we recommend that you set the dst-port value to 0; otherwise, no flows are displayed.

Default

All expired flows are exported until the filter is specified explicitly.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

This command is not supported on the Catalyst 4000 and 2948G series switches.

If you enter any of the **set mls nde** commands on a Catalyst 5000, 2926G, or 2926 series switch without MLS, the following warning message displays:

```
mls not supported on feature card.
```

Before you use the **set mls nde** command for the first time, you must configure the host to collect the MLS statistics. The host name and UDP port number are saved in NVRAM, and you do not need to specify them. If you specify a host name and UDP port, values in NVRAM overwrite the old values. Collector's values in NVRAM do not clear when NDE is disabled; this command configures the collector, but does not enable NDE automatically.

The **set mls nde enable** command enables NDE, exporting statistics to the preconfigured collector.

If you attempt to enable NDE without first specifying a collector, you see this display:

```
Console>(enable) set mls nde enable
Please set host name and UDP port number with 'set mls nde <collector_name |
collector_ip> <udp_port_number>'.
Console>(enable)
```

The **set mls nde flow** command adds filtering to the NDE. Expired flows matching the specified criteria are exported. These values are stored in NVRAM. They are not cleared when NDE is disabled. If any option is not specified in this command, it is treated as a wildcard. The NDE filter in NVRAM does not clear when NDE is disabled.

Use the following syntax to specify an IP subnet address:

- *ip_subnet_addr*—This is the short subnet address format. The trailing decimal number 00 in an IP address YY.YY.YY.00 specifies the boundary for an IP subnet address. For example, 172.22.36.00 indicates a 24-bit subnet address (subnet mask 172.22.36.00/255.255.255.0), and 173.24.00.00 indicates a 16-bit subnet address (subnet mask 173.24.00.00/255.255.0.0). However, this format can identify only a subnet address of 8, 16, or 24 bits.
- *ip_addr/subnet_mask*—This is the long subnet address format, for example, 172.22.252.00/255.255.252.00 indicates a 22-bit subnet address. This format can specify a subnet address of any bit number. To provide more flexibility, the *ip_addr* is a full host address, such as 172.22.253.1/255.255.252.00.
- *ip_addr/maskbits*—This is the simplified long subnet address format. The mask bits specify the number of bits of the network masks. For example, 172.22.252.00/22 indicates a 22-bit subnet address. The *ip_addr* is a full host address, such as 193.22.253.1/22, which has the same subnet address as the *ip_subnet_addr*.

If the *protocol* value is not set to tcp or udp, we recommend you set the *dst_port* and *src_port* values to 0; otherwise, no flows will be displayed.

When you use the **set mls nde** {*collector_ip* | *collector_name*} {*udp_port_num*} command, the host name and UDP port number are saved in NVRAM and need not be specified again. If a host name and UDP port are specified, values in NVRAM are overwritten with the new values. Collector's values in NVRAM are not cleared when NDE is disabled.

Examples

These examples show how to use the **set mls nde** command set to configure NDE:

```
Console> (enable) set mls nde Stargate 120
Netflow data export not enabled.
Netflow data export to port 120 on 172.20.15.1(Stargate)
Console> (enable)

Console>(enable) set mls nde enable
Netflow data export enabled.
Netflow data export to port 120 on 172.20.15.1 (Stargate)
Console> (enable)

Console> (enable) set mls nde disabled
Netflow data export disabled.
Console> (enable)

Console> (enable) set mls nde flow destination 171.69.194.140/24
Netflow data export: destination filter set to 171.69.194.0/24
Console> (enable)

Console> (enable) set mls nde flow destination 171.69.194.140
Netflow data export: destination filter set to 171.69.194.140/32
Console> (enable)

Console>(enable) set mls nde flow destination 171.69.194.140/24 source 171.69.173.5/24
Netflow data export: destination filter set to 171.69.194.0/24
Netflow data export: source filter set to 171.69.173.0/24
Console>(enable)

console> (enable) set mls nde flow source 171.69.194.140 protocol 51
Netflow data export: source filter set to 171.69.194.140/32
Netflow data export: protocol filter set to 51.
Console> (enable)

Console>(enable) set mls nde flow dst-port 23
Netflow data export: destination port filter set to 23.
Console>(enable)

Console>(enable) set mls nde flow source 171.69.194.140 dst-port 23
Netflow data export: destination port filter set to 23
Netflow data export: source filter set to 171.69.194.140/32
Console>(enable)
```

Related Commands

- clear mls**
- show mls**
- show mls statistics**
- set mls**
- set mls agingtime fast**

set module disable

Use the **set module disable** command to disable a module.

```
set module disable mod_num
```

Syntax Description

mod_num Number of the module. You can specify a series of modules by entering a comma between each module number (for example, 2,3,5). You can specify a range of modules by entering a dash between module numbers (for example, 2-5).

Default

The default configuration has all modules enabled.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

Avoid disabling a module when you are connected via a Telnet session; if you disable your session, you will disconnect your Telnet session.

If there are no other network connections to the Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switch (for example, on another module), you have to reenable the module from the console.

Examples

This example shows how to disable module 3 when connected via the console port:

```
Console> (enable) set module disable 3  
Module 3 disabled.  
Console> (enable)
```

This example shows how to disable module 2 when connected via a Telnet session:

```
Console> (enable) set module disable 2  
This command may disconnect your telnet session.  
Do you want to continue (y/n) [n]? y  
Module 2 disabled.
```

Related Commands

set module enable

show module

set module enable

Use the **set module enable** command to enable a module.

```
set module enable mod_num
```

Syntax Description

mod_num Number of the module to enable.

Default

The default setting has all modules enabled.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

If an individual port on a module was previously disabled, enabling the module does not enable the disabled port.

Example

This example shows how to enable module 2:

```
Console> (enable) set module enable 2  
Module 2 enabled.  
Console> (enable)
```

Related Commands

set module disable
show module

set module name

Use the **set module name** command to set the name for a module.

```
set module name mod_num [mod_name]
```

Syntax Description

mod_num Number of the module.

mod_name (Optional) Name created for the module.

Default

The default configuration has no module names configured for any modules.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

If the module name is not specified, any previously specified name is cleared.

Use the **set module name** command to set the module for the RSM. Additional **set module** commands are not supported by the RSM.

Example

This example shows how to set the name for module 1 to Supervisor:

```
Console> (enable) set module name 1 Supervisor  
Module name set.  
Console> (enable)
```

Related Command

show module

set multicast router

Use the **set multicast router** command to manually configure a port as a multicast router port.

set multicast router *mod/ports...*

Syntax Description

mod Number of the module.

/ports... Number of the ports on the module.

Default

By default, no ports are configured as multicast router ports.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

When you enable CGMP or IGMP snooping, the ports to which a multicast-capable router is attached are identified automatically. The **set multicast router** command allows you to configure multicast router ports statically.

IGMP is not supported on the Catalyst 4000 and 2948G series switches.

Example

This example shows how to configure a multicast router port:

```
Console> (enable) set multicast router 3/1
Port 3/1 added to multicast router port list.
Console> (enable)
```

Related Commands

clear multicast router
set cgmp
set igmp
show multicast router
show multicast group count

set ntp broadcastclient

Use the **set ntp broadcastclient** command to enable or disable NTP in broadcast-client mode.

```
set ntp broadcastclient {enable | disable}
```

Syntax Description

enable Keyword to enable NTP in broadcast-client mode.

disable Keyword to disable NTP in broadcast-client mode.

Default

The default setting for this command is disabled.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

The broadcast-client mode assumes that a broadcast server, such as a router, sends time-of-day information regularly to the Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switch.

Examples

This example shows how to enable an NTP broadcast client:

```
Console> (enable) set ntp broadcastclient enable  
NTP Broadcast Client mode enabled.  
Console> (enable)
```

This example shows how to disable an NTP broadcast client:

```
Console> (enable) set ntp broadcastclient disable  
NTP Broadcast Client mode disabled.  
Console> (enable)
```

Related Command

show port broadcast

set ntp broadcastdelay

Use the **set ntp broadcastdelay** command to configure a time-adjustment factor so the Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switch can receive broadcast packets.

set ntp broadcastdelay *microseconds*

Syntax Description

microseconds Estimated round-trip time, in microseconds, for NTP broadcasts. Allowable range is from 1 to 999999.

Default

By default, the NTP broadcast delay is set to 3000.

Command Type

Switch command.

Command Mode

Privileged.

Example

This example shows how to set the NTP broadcast delay to 4000 microseconds:

```
Console> (enable) set ntp broadcastdelay 4000  
NTP broadcast delay set to 4000 microseconds.  
Console> (enable)
```

Related Command

show port broadcast

set ntp client

Use the **set ntp client** command to enable or disable the Catalyst 5000, 4000, 2948G, 2926G, and 2926 series switches as an NTP client.

```
set ntp client {enable | disable}
```

Syntax Description

enable Keyword to enable the Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switch as an NTP client.

disable Keyword to disable the Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switch as an NTP client.

Default

By default, NTP client mode is disabled.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

You can configure NTP in either broadcast-client mode or client mode. The broadcast-client mode assumes that a broadcast server, such as a router, sends time-of-day information regularly to the Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switch.

The client mode assumes that the client (the Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switch) regularly sends time-of-day requests to the NTP server.

Example

This example shows how to enable NTP client mode:

```
Console> (enable) set ntp client enable  
NTP client mode enabled.  
Console> (enable)
```

Related Command

show port broadcast

set ntp server

Use the **set ntp server** command to configure the IP address of the NTP server.

```
set ntp server ip_addr
```

Syntax Description

ip_addr IP address of the NTP server providing the clock synchronization.

Default

There is no default setting for this command.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

The client mode assumes that the client (the Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switch) sends time-of-day requests regularly to the NTP server. A maximum of ten servers per client is allowed.

Example

This example shows how to configure an NTP server:

```
Console> (enable) set ntp server 172.20.22.191  
NTP server 172.20.22.191 added.  
Console> (enable)
```

Related Commands

clear ntp server
show port broadcast