OAM CLI Reference Guide

Model: S3700-24T4F

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Chapter 1 OAM Configuration Commands

1.1 OAM Configuration Commands

OAM configuration commands include:

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1.1.1 ethernet oam

Syntax

To enable or disable the OAM function, run [no] ethernet oam.
[no] ethernet oam

Parameters

None

Default Value

Ethernet OAM is disabled by default.

Command Mode

Port configuration mode

Usage Guidelines

None

Example

The following commands are used to enable the OAM function on GigaEthernet 0/2 interface.

```
Switch#
Switch#config
Switch_config#interface g0/2
Switch_config_g0/2#ethernet oam
```

1.1.2 ethernet oam {max-rate | min-rate | mode | timeout }

Syntax

[no] ethernet oam {max-rate *value1* **| min-rate** *value2* **| mode {active | passive} | timeout** *value3***}**

ethernet oam max-rate value1 is used to set the fastest transmission rate of the OAM packet.

ethernet oam max-rate value2 is used to set the slowest transmission rate of the OAM packet.

ethernet oam mode {active | passive} is used to set the OAM mode.

ethernet oam timeout value3 is used to set the timeout time of the OAM connection.

Parameters

Parameters	Description
value1	Fastest transmission rate, which ranges between 1 and 10. Its unit is packet/second.
value2	Slowest transmission rate, which ranges between 1 and 10. Its unit is second.
value3	Timeout time of the OAM connection, which ranges between 2 and 30 and whose unit is second

Default Value

The value of max-rate is 10.

The value of min-rate is 1.

The value of timeout is 5.

The value of mode is active.

Command Mode

Port configuration mode

Usage Guidelines

This command can be used to configure some optional parameters for establishing the OAM connection.

Example

The following example shows how to set the fastest and slowest connection rates of the OAM on the GigaEthernet 0/2 interface to 5 packets/second, the connection timeout time to 10 seconds and the OAM mode to passive.

Switch #config

Switch_config#

Switch_config#interface g0/2

Switch_config_g0/2# ethernet oam max-rate 5

Switch_config_g0/2#ethernet oam min-rate 5

Switch_config_g0/2#ethernet oam timeout 10

Switch_config_g0/2#ethernet oam mode passive

1.1.3 ethernet oam remote-failure {critical-event | dying-gasp | link-fault } action

Syntax

To configure the trigger action after the remote fault instruction is received, run the following command. To return to the default setting, use the no form of this command.

ethernet oam remote-failure {critical-event | dying-gasp | link-fault } action error-disable-interface
no ethernet oam remote-failure {critical-event | dying-gasp | link-fault } action

Parameters

None

Default Value

No trigger action is conducted after the remote fault instruction is received.

Command Mode

Port configuration mode

Usage Guidelines

The switch cannot generate the LINK FAULT packets and the Critical Event packets. However, these packets will be handled if they are received from the remote terminal. router can transmit and receive the Dying Gasp packet. When the local port enters the err disabled state or is closed by the administrator or the OAM function of the local port is closed by the manager, the Dying Gasp packet will be transmitted to the remote terminal that connects the local port.

Example

The following example shows how to enable error-disable-interface after receiving remote link fault on GigaEthernet 0/1.
Switch_config#interface g0/1
Switch_config_g0/1#ethernet oam remote-failure link-fault action error-disable-interface

1.1.4 ethernet oam link-monitor {symbol-period | frame | frame-period | frame-seconds | receive-crc} threshold high

Syntax

To configure the high threshold for link monitoring, run the following command.

[**no**] **ethernet oam link-monitor {symbol-period | frame | frame-period | frame-seconds | receive-crc} threshold high {none |** *value***}**

Parameters

Parameters	Description
Value	Error-signal period events ranges between 1 and 65535, whose unit is signal number. Error-frame event ranges between 1 and 65535, whose unit is frame number. Error-frame event ranges between 1 and 65535, whose unit is frame number. Error-frame second event ranges between 1 and 900, whose unit is second. Error-CRC event ranges between 1 and 65535, whose unit is frame number.

Default Value

The default value of each general link event is none.

Command Mode

Port configuration mode

Usage Guidelines

After the high threshold of an event and ethernet oam link-monitor high-threshold action error-disable-interface are configured, the local port enters the errdisabled state when the local port receives the high threshold of the event.

Example

The following example shows how to configure the high threshold of the error-frame event to 10 on interface GigaEthernet0/2.

Switch_config_g0/2#ethernet oam link-monitor symbol-period threshold high 10

1.1.5 ethernet oam link-monitor {symbol-period | frame | frame-period | frame-seconds | receive-crc} threshold low

Syntax

To configure the high threshold for link monitoring, run the following command.

[no] ethernet oam link-monitor {symbol-period | frame | frame-period | frame-seconds | receive-crc} threshold low {none | *value***}**

Parameters

Parameters	Description
Value	Error-signal period events ranges between 0 and 65535, whose unit is signal number. Error-frame event ranges between 0 and 65535, whose unit is frame number. Error-frame event ranges between 0 and 65535, whose unit is frame number. Error-frame second event ranges between 0 and 900, whose unit is second. Error-CRC event ranges between 0 and 65535, whose unit is frame number.

Default Value

The default value of the error-signal period event is 1.
The default value of the error-frame event is 1.
The default value of the error-frame period event is 1.
The default value of the error-frame second event is 1.
The default value of the error-CRC event is 10.

Command Mode

Port configuration mode

Usage Guidelines

After the low threshold of an event is configured and the locally-received event exceeds the low threshold, the Event Notification OAM packet will be transmitted to notify the peer terminal.

Example

The following example shows how to set the low threshold of the error-frame event to 10 on interface GigaEthernet0/2.
Switch_config_g0/2#ethernet oam link-monitor symbol-period threshold low 10

1.1.6 ethernet oam link-monitor {symbol-period | frame | frame-period | frame-seconds | receive-crc} window

Syntax

To configure the size of the round-query window for link monitoring, run the following command.

ethernet oam link-monitor {symbol-period | frame | frame-period | frame-seconds | receive-crc} window *value*

Parameters

Parameters	Description
Value	The error-signal period event ranges between 10 and 600 on GigaEthernet and ranges between 1 and 60 on FastEthernet. The unit is 100M signals. The error-frame event ranges between 1 and 60, whose unit is second. The error-frame period event ranges between 100 and 6000 on GigaEthernet and ranges between 10 and 600 on FastEthernet. The unit is 14881 frames. Error-frame second event ranges between 10 and 900, whose unit is second. The error-CRC event ranges between 1 and 180, whose unit is second.

Default Value

The default value of the error-signal period event is 10 on GigaEthernet and is 1 on FastEthernet.
The default value of the error-frame event is 1.
The default value of the error-frame period event is 100 on GigaEthernet and is 10 on FastEthernet.

The default value of the error-frame second event is 60.
The default value of the error-CRC event is 1.

Command Mode

Port configuration mode

Usage Guidelines

None

Example

The following example shows how to set the window of the error-frame period event to 50 on interface GigaEthernet0/2.
Switch_config_g0/2#ethernet oam link-monitor symbol-period window 50

1.1.7 ethernet oam link-monitor high-threshold action

Syntax

To configure the link-monitor trigger event with the high threshold, run ethernet oam link-monitor high-threshold action error-disable-interface. To return to the default setting, use the no form of this command.

ethernet oam link-monitor high-threshold action error-disable-interface
[no] ethernet oam link-monitor high-threshold action

Parameters

None

Default Value

The high-threshold trigger event does not exist by default.

Command Mode

Port configuration mode

Usage Guidelines

After the high threshold of an event and ethernet oam link-monitor high-threshold action error-disable-interface are configured, the local port enters the err disabled state when the local port receives the high threshold of the event.

Example

The following example shows how to set the high-threshold trigger event on interface GigaEthernet 0/2

to error-disable-interface.
Switch_config_g0/2#ethernet oam link-monitor high-threshold action error-disable-interface

1.1.8 ethernet oam link-monitor negotiation-supported

Syntax

To configure the link-monitor negotiation, run ethernet oam link-monitor negotiation-supported. To return to the default setting, use the no form of this command.
ethernet oam link-monitor negotiation-supported
[no] ethernet oam link-monitor negotiation-supported

Parameters

None

Default Value

Link-monitor negotiation is supported.

Command Mode

Port configuration mode

Usage Guidelines

Devices support link monitoring. However, if the third-party devices do not support link monitoring, devices automatically do not support link monitoring during OAM Discovery and the OAM connection can be established through the third-party devices in this case. Otherwise, when the link-monitor negotiation is not configured, devices mandatorily support the link-monitor function, but the OAM connection cannot be created if the third-party devices do not support the link-monitor function.

Example

The following example shows that the link-monitor function is not supported on interface GigaEthernet 0/2.
Switch_config_g0/2#no ethernet oam link-monitor negotiation-supported

1.1.9 clear ethernet oam statistics

Syntax

To clear the OAM statistics information, run the following command.

clear ethernet oam statistics [interface intf-type intf-id**]**

Parameters

Parameters	Description
Intf-id	Designates a designated interface. If an interface is not designated, the OAM statistics information on all interfaces will be deleted.

Default Value

None

Command Mode

Privileged mode

Usage Guidelines

After this command is run, the following statistics information (type-classified packet numbering information, link-event statistics information and remote trouble statistics information) is deleted meanwhile.

Example

The following example shows how to clear the OAM statistics information on interface GigaEthernet 0/2.
Switch#clear ethernet oam statistics interface g0/2

1.1.10 show ethernet oam discovery

Syntax

To display the OAM discovery information on all interfaces or a designated interface, including local DTE port loopback state, information about Local information TLV and Remote information TLV of OAM Information packet, run the following command.

show ethernet oam discovery interface [intf-type intf-id**]**

Parameters

Parameters	Description
Intf-id	Displays the Discovery information on the designated interface or on all protocol-up ports and enables the Discovery information on the OAM interface.

Default Value

None

Usage Guidelines

None

Example

The following example shows how to display OAM discovery information on port GigaEthernet 0/2.

```
Switch_config_g0/2#show ethernet oam discovery interface g0/2
GigaEthernet0/2
Local Info TLV
--------------
PDU revision:           1

Loopback status:      LB_DISABLED

OAM configurations field:
Mode                        : active
Unidirection           : not supported
Remote loopback      : supported
Link Events             : supported
Variable retrieval: not supported

Mtu size:                 1500

OUI:                         00e00f

Remote Info TLV
---------------
MAC address:               001b.0d9c.e703

PDU revision:           0

OAM configurations field:
Mode                        : active
Unidirection           : not supported
Remote loopback      : not supported
Link Events             : supported
Variable retrieval: not supported

Mtu size:                 1500

OUI:                         00000c
```

1.1.11 show ethernet oam statistics {pdu | link-monitor | remote-failure}

Syntax

To display the OAM statistics information on a designated interface or all interfaces, run the following

command. The OAM statistics information includes packet type statistics information, general link event statistics information and remote fault statistics information.

show ethernet oam statistics {pdu | link-monitor | remote-failure} interface [intf-type intf-id**]**

Parameters

Parameters	Description
Intf-id	Displays the statistics information on the designated interface or on all protocol-up ports and enables the statistics information on the OAM interface.

Default Value

None

Usage Guidelines

None

Example

The following example shows how to display the packet statistics information on interface GigaEthernet 0/2.

```
Switch#show ethernet oam statistics pdu interface g0/2
GigaEthernet0/2
Counters:
---------
Information OAMPDU Tx                 : 59
Information OAMPDU Rx                 : 56
Unique Event Notification OAMPDU Tx   : 0
Unique Event Notification OAMPDU Rx   : 0
Duplicate Event Notification OAMPDU TX: 0
Duplicate Event Notification OAMPDU RX: 0
Loopback Control OAMPDU Tx            : 0
Loopback Control OAMPDU Rx            : 0
Variable Request OAMPDU Tx            : 0
Variable Request OAMPDU Rx            : 0
Variable Response OAMPDU Tx           : 0
Variable Response OAMPDU Rx           : 0
Organization Specific OAMPDU Tx       : 0
Organization Specific OAMPDU Rx       : 0
Unsupported OAMPDU Tx                 : 0
Unsupported OAMPDU Rx                 : 0
Frames Lost due to OAM                : 0
```

1.1.12 show ethernet oam configuration

Syntax

To display the OAM configuration information on all interfaces or a designated interface, run the following command.

show ethernet oam configuration interface [intf-type intf-id**]**

Parameters

Parameters	Description
Intf-id	Displays the OAM configuration information on the designated interface or on all protocol-up ports and enables the configuration information on the OAM interface.

Default Value

None

Usage Guidelines

None

Example

The following example shows how to display the OAM configuration information on interface GigaEthernet 0/2.

```
Switch#show ethernet oam configuration interface g0/2
GigaEthernet0/2
General
-------
Admin state                 : enabled
Mode                        : active
PDU max rate                : 10 packets/second
PDU min rate                : 1 seconds/packet
Link timeout                : 1 seconds
High threshold action: no action

Remote Failure
--------------
Link fault action       : no action
Dying gasp action       : no action
Critical event action: no action

Remote Loopback
---------------
```

Is supported : supported
Loopback timeout : 2

Link Monitoring

Negotiation : supported
Status : on

Errored Symbol Period Event
Window : 10 * 100M symbols
Low threshold : 1 error symbol(s)
High threshold : none

Errored Frame Event
Window : 1 seconds
Low threshold : 1 error frame(s)
High threshold : none

Errored Frame Period Event
Window : 100 * 14881 frames
Low threshold : 1 error frame(s)
High threshold : none

Errored Frame Seconds Summary Event
Window : 60 seconds
Low threshold : 1 error second(s)
High threshold : none

Errored CRC Frames Event
Window : 1 seconds
Low threshold : 10 error frame(s)
High threshold : none

1.1.13 show ethernet oam runtime

Syntax

To display the OAM running information on all interfaces or a designated interface, run the following command. The OAM running information includes the control variables in some protocols and the latest 10 times status changing records.

show ethernet oam runtime interface [intf-type intf-id**]**

Parameters

Parameters	Description
Intf-id	Displays the Runtime information on the designated interface or on all protocol-up ports and enables the Runtime information on the OAM interface.

Default Value

None

Usage Guidelines

None

Example

The following example shows how to display the OAM Runtime information on interface GigaEthernet 0/2.

```
Switch#show ethernet oam runtime interface g0/2
GigaEthernet0/2
Runtime Settings:
-----------------
local_pdu              : NOT_WORKING
local_mux              : FWD
local_par              : FWD
local_link_status : OK
local_satisfied    : FALSE
local_stable       : FALSE
pdu_cnt                : 10
pdu_timer              : stopped
lost_link_timer    : stopped
remote_state_valid: FALSE
remote_stable      : FALSE
remote_evaluating : FALSE

Discovery State Machine:
------------------------
Last 10 state transition recorded: INACTIVE -> FAULT -> ACTIVE_SEND_LOCAL -> SEN
D_LOCAL_REMOTE -> SEND_LOCAL_REMOTE_OK -> SEND_ANY -> INACTIVE
```

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