R Commands

rmon alarm

To configure Remote Monitoring (RMON) alarms on any integer-based Simple Network Management Protocol (SNMP) management information base (MIB) object, use the rmon alarm command. To remove an RMON alarm, use the no form of this command.

rmon alarm alarm-no MIB-obj sample-interval absolute | delta rising-threshold rising-threshold-value event-index falling-threshold fall-threshold-value [event-index] [owner name] | falling-threshold fall-threshold-value [event-index] [owner name]

no rmon alarm alarm-no MIB-obj sample-interval absolute | delta rising-threshold rising-threshold-value event-index falling-threshold fall-threshold-value [event-index] [owner name] | falling-threshold fall-threshold-value [event-index] [owner name]

Syntax Description

alarm-no	Alarm number. The range is from 1 to 65535.
MIB-obj	MIB object to monitor. The MIB object must be an existing SNMP MIB object in standard dot notation; for example, 1.3.6.1.2.1.2.2.1.17.83886080.
sample-interval	Sample interval at which the switch collects a sample value of the MIB object. The range is from 1 to 700000 seconds.
absolute	Specifies the sample type as absolute.
delta	Specifies the sample type as delta.
rising-threshold	Configures the rising threshold value at which the switch triggers a rising alarm or resets a falling alarm.
rising-threshold-value	Rising threshold value. The range is from –2147483648 to 2147483647.
event-index	Event or action that the switch takes when an alarm, rising or falling, triggers. The event index range is from 0 to 65535.
falling-threshold	Configures the falling threshold value at which the switch triggers a falling alarm or resets a rising alarm.
fall-threshold-value	Falling threshold value. The range is from –2147483648 to 2147483647. **Note** The falling threshold value must be less than the rising threshold.
owner name	(Optional) Specifies an owner for the alarm. The name can be any alphanumeric string.

Command Default

None

Command Modes

Global configuration mode

Command History	**Release**	**Modification**
		This command was introduced.

Usage Guidelines

Before you use this command, you must have configured an SNMP user and enabled SNMP notifications using the snmp-server user and snmp-server enable traps command, respectively.

You can only configure an RMON alarm on an integer-based SNMP MIB object. The MIB object must be in standard dot notation. For example, 1.3.6.1.2.1.2.2.1.17 represents ifOutOctets.17.

Absolute samples take the current snapshot of the MIB object value. Delta samples take two consecutive samples and calculate the difference between them. For example, you can set a delta type rising alarm on an error counter MIB object. If the error counter delta exceeds this value, you can trigger an event that sends an SNMP notification and logs the rising alarm event. This rising alarm will not occur again until the delta sample for the error counter drops below the falling threshold.

You can associate a particular event to each RMON alarm. RMON supports the following event types:

- SNMP notification—Sends an SNMP risingAlarm or fallingAlarm notification when the associated alarm triggers.
- Log—Adds an entry in the RMON log table when the associated alarm triggers.
- Both—Sends an SNMP notification and adds an entry in the RMON log table when the associated alarm triggers.

You can specify a different event for a falling alarm and a rising alarm.

Examples

This example shows how to configure an RMON alarm:

```
switch(config)# rmon alarm 1 1.3.6.1.2.1.2.2.1.17.83886080 5 delta rising-threshold 5 1
falling-threshold 0 owner test

switch(config)#
```

Related Commands	**Command**	**Description**
	copy running-config startup-config	Saves the running configuration to the startup configuration file.
	snmp-server enable traps	Enables SNMP notifications on the switch.
	snmp-server user	Configures an SNMP user.
	show rmon	Displays information about RMON alarms and events.

rmon hcalarm

To configure a high-capacity Remote Monitoring (RMON) alarm, use the rmon hcalarm command. To remove a high-capacity RMON alarm, use the no form of this command.

rmon hcalarm alarm-no MIB-obj sample-interval absolute | delta startupalarm startup-alarm-type rising-threshold rising-threshold-value event-index falling-threshold fall-threshold-value [event-index] [owner name]
no rmon hcalarm alarm-no MIB-obj sample-interval absolute | delta startupalarm startup-alarm-type rising-threshold rising-threshold-value event-index falling-threshold fall-threshold-value [event-index] [owner name]

Syntax Description

alarm-no	Alarm number. The range is from 1 to 65535.
MIB-obj	MIB object to monitor. The MIB object must be an existing SNMP MIB object in standard dot notation; for example, 1.3.6.1.2.1.2.2.1.17.83886080.
sample-interval	Sample interval at which the switch collects a sample value of the MIB object. The range is from 1 to 700000 seconds.
absolute	Specifies the sample type as absolute.
delta	Specifies the sample type as delta.
startupalarm	Configures the startup alarm type.
startup-alarm-type	Startup alarm type. The range is from 1 to 3, where 1 is rising, 2 is falling, and 3 is rising or falling.
rising-threshold	Configures the rising threshold value at which the switch triggers a rising alarm or resets a falling alarm.
rising-threshold-value	Rising threshold value. The range is from 0 to 18446744073709551615.
event-index	Event or action that the switch takes when an alarm, rising or falling, triggers. The event index range is from 0 to 65535.
falling-threshold	Configures the falling threshold value at which the switch triggers a falling alarm or resets a rising alarm.
fall-threshold-value	Falling threshold value. The range is from 0 to 18446744073709551615. **Note** The falling threshold value must be less than the rising threshold.
ownername	(Optional) Specifies an owner for the alarm. The name can be any alphanumeric string.

Command Default   None

Command Modes

Global configuration mode

Command History

Release	Modification
	This command was introduced.

Usage Guidelines

Before you use this command, you must have configured an SNMP user and enabled SNMP notifications using the snmp-server user and snmp-server enable traps command, respectively.

You can configure a high-capacity RMON alarm on any integer-based SNMP MIB object. The MIB object must be in standard dot notation. For example, 1.3.6.1.2.1.2.2.1.17 represents ifOutOctets.17.

Absolute samples take the current snapshot of the MIB object value. Delta samples take two consecutive samples and calculate the difference between them. For example, you can set a delta type rising alarm on an error counter MIB object. If the error counter delta exceeds this value, you can trigger an event that sends an SNMP notification and logs the rising alarm event. This rising alarm will not occur again until the delta sample for the error counter drops below the falling threshold.

You can associate a particular event to each high-capacity RMON alarm. RMON supports the following event types:

- SNMP notification—Sends an SNMP risingAlarm or fallingAlarm notification when the associated high-capacity alarm triggers.
- Log—Adds an entry in the RMON log table when the associated high-capacity alarm triggers.
- Both—Sends an SNMP notification and adds an entry in the RMON log table when the associated high-capacity alarm triggers.

You can specify a different event for a falling high-capacity alarm and a rising high-capacity alarm.

Examples

This example shows how to configure an RMON high-capacity alarm:

```
switch(config)# rmon hcalarm 3 1.3.6.1.2.1.2.2.1.17.83886080 5 delta startupalarm 3
rising-threshold 5 1 falling-threshold 3 3 owner test

switch(config)#
```

Related Commands

Command	Description
copy running-config startup-config	Saves the running configuration to the startup configuration file.
snmp-server enable traps	Enables SNMP notifications on the switch.
snmp-server user	Configures an SNMP user.
show rmon	Displays information about RMON alarms and events.

rmon event

To configure Remote Monitoring (RMON) events to associate with RMON alarms, use the rmon event command. To remove an RMON event, use the no form of this command.

rmon event event-index [description string] [log] [trap] [owner name]
no rmon event event-index [description string] [log] [trap] [owner name]

Syntax Description

event-index	Event or action that the switch takes when an alarm, rising or falling, triggers. The event index range is from 0 to 65535.
description string	(Optional) Specifies a description for the event. The description can be any alphanumeric string.
log	(Optional) Specifies that an RMON log be generated when the event occurs.
trap	(Optional) Specifies that an SNMP trap be generated when the event occurs.
owner name	(Optional) Specifies an owner for the alarm. The name can be any alphanumeric string.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
	This command was introduced.

Usage Guidelines

Before you use this command, you must have configured an SNMP user and enabled SNMP notifications using the snmp-server user and snmp-server enable traps command, respectively.

You can reuse the same event with multiple RMON alarms.

Examples

This example shows how to configure an RMON event:

```
switch(config)# rmon event 1 owner test

switch(config)#
```

Related Commands

Command	Description
copy running-config startup-config	Saves the running configuration to the startup configuration file.
snmp-server enable traps	Enables SNMP notifications on the switch.
snmp-server user	Configures an SNMP user.
show rmon	Displays information about RMON alarms and events.