rmon through show rmon topn

rmon

To enable Remote Monitoring (RMON) on an Ethernet interface, use the rmon command in interface configuration mode. To disable RMON on the interface, use the **no**form of this command.

rmon {**native**| **promiscuous**}

no rmon

Syntax Description

native	Enables RMON on the Ethernet interface. In native mode, the router processes only packets destined for this interface.
promiscuous	Enables RMON on the Ethernet interface. In promiscuous mode, the router examines every packet.

Command Default

RMON is disabled on the interface.

Command Modes

Interface configuration

Command History

Release	Modification
11.1	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

This command enables RMON on Ethernet interfaces. A generic RMON console application is recommended in order to use the RMON network management capabilities. SNMP must also be configured. RMON provides visibility of individual nodal activity and allows you to monitor all nodes and their interaction on a LAN segment. When the **rmon** command is issued, the router automatically installs an Ethernet statistics study for the associated interface.

Note RMON can be very data and processor intensive. Users should measure usage effects to ensure that router performance is not degraded and to minimize excessive management traffic overhead. Native mode is less intensive than promiscuous mode.

All Cisco IOS software feature sets support RMON alarm and event groups. Additional RMON groups are supported in certain feature sets. Refer to the Release Notes for feature set descriptions. As a security precaution, support for the packet capture group allows capture of packet header information only; data payloads are not captured.

The RMON MIB is described in RFC 1757.

Examples

The following example enables RMON on Ethernet interface 0 and allows the router to examine only packets destined for the interface:

```
interface ethernet 0
 rmon native
```

Related Commands

Command	Description
rmon alarm	Sets an alarm on any MIB object.
rmon event	Adds or removes an event in the RMON event table that is associated with an RMON event number.
rmon queuesize	Changes the size of the queue that holds packets for analysis by the RMON process.
show rmon	Displays the current RMON agent status on the router.

rmon alarm

To set an alarm on any MIB object, use the **rmon alarm** command in global configuration mode. To disable the alarm, use the **no**form of this command.

rmon alarm *number variable interval* {**delta**| **absolute**} **rising-threshold** *value* [*event-number*] **falling-threshold** *value* [*event-number*] [**owner** *string*] [**interface** *type number* **[trap]**]

no rmon alarm *number*

Syntax Description

number	Alarm number, which is identical to the alarmIndexof the alarmTable in the Remote Monitoring (RMON) MIB.
variable	MIB object to monitor, which translates into the alarmVariable used in the alarmTable of the RMON MIB.
interval	Time, in seconds, that the alarm monitors the MIB variable. This interval is identical to the alarmIntervalused in the alarmTable of the RMON MIB.
delta	Tests the change between MIB variables, which affects the alarmSampleType in the alarmTable of the RMON MIB.
absolute	Tests each MIB variable directly, which affects the alarmSampleType in the alarmTable of the RMON MIB.
rising-threshold	Sets the value at which the alarm is triggered.
value	When used with the **rising-threshold** keyword, the value at which the alarm is triggered. When used with the **falling-threshold** keyword, the value at which the alarm is reset.
event-number	(Optional) Event number to trigger when the rising or falling threshold exceeds its limit. This value is identical to the alarmRisingEventIndex or the alarmFallingEventIndex in the alarmTable of the RMON MIB.
falling-threshold	Sets the value at which the alarm is reset.

owner	(Optional) Specifies an owner for the alarm, which is identical to the alarmOwner in the alarmTable of the RMON MIB.
string	(Optional) Name of the owner for the alarm.
interface	(Optional) Specifies that the ifIndex has to be derived from the interface name.
type	(Optional) Interface type. For more information, use the question mark (?) online help function.
number	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
trap	(Optional) Specifies that ifDescr is included in the alarm notification.

Command Default

No alarms are configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
11.2	This command was introduced.
12.2(14)SX	This command was implemented on Supervisor Engine 720 in Cisco IOS Release 12.2(14)SX.
12.2(17d)SXB	This command was implemented on Supervisor Engine 2 in Cisco IOS Release 12.2(17d)SXB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.1(1)S	This command was modified. The **interface** and **trap** keywords and the *type*and *number* arguments were added.
15.2(02)SA	This command was implemented on the Cisco ME 2600X Series Ethernet Access Switches.

Usage Guidelines

You must specify the MIB object as a dotted decimal value after the entry sequence (for example, ifEntry.10.1). You cannot specify the variable name and the instance (for example, ifInOctets.1) or the entire dotted decimal notation. The argument must be in the form *entry.integer.instance*.

To disable the RMON alarms, you must use the **no** form of the command on each configured alarm. For example, to remove alarm 1, use the **no rmon alarm 1** command.

See RFC 1757 for more information about the RMON alarm group.

When you configure a MIB object as ifInOctets.4, ifInOctets is considered as the object, .4 as the instance, and 4 as the ifIndex assigned to the interface. When using the **interface** keyword, you must not specify an instance to configure the MIB object because RMON automatically adds the ifindex to the object.

Note If you configure ifInOctets.4 and the **interface** keyword, the resultant object will be ifInOctets.4.4. This results in the failure of the RMON policy.

The **interface** keyword must be used only for objects that are indexed by the ifindex. If objects have multiple indexes, ifIndex must be the last in the sequence of indexes and the object configuration should include all the previous indexes.

Note You can configure objects that are not indexed by ifindex; however, this results in the failure of RMON policy.

Use the **trap** keyword to include the ifDescr object in the RMON rising and falling alarms.

Examples

The following example shows how to configure an RMON alarm using the **rmon alarm** command:

```
Router(config)# rmon alarm 10 ifEntry.20.1 20 delta rising-threshold 15 1 falling-threshold
 0 owner owner1
```

In this example, the RMON alarm number is set to 10. The alarm monitors the MIB variable ifEntry.20.1once every 20 seconds until the alarm is disabled, and checks the change in the rise or fall of the variable. If the ifEntry.20.1value shows a MIB counter increase of 15 or more, such as from 100000 to 100015, the alarm is triggered. The alarm in turn triggers event number 1, which is configured with the **rmon event** command. Possible events include a log entry or a Simple Network Management Protocol (SNMP) trap. If theifEntry.20.1value changes by 0 (falling threshold is 0), the alarm is reset and can be triggered again.

The following example shows how to configure an RMON alarm to monitor the MIB variable ifInOctets:

```
Router(config)# rmon alarm 30 ifInOctets 30 absolute rising-threshold 200000 1
falling-threshold 50000 1 owner xyz interface ethernet 2/1
```

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon event	Adds or removes an event in the RMON event table that is associated with an RMON event number.

Command	Description
show rmon	Displays the current RMON agent status on the router.

rmon capture-userdata

To disable the packet zeroing feature that initializes the user payload portion of each Remote Monitoring (RMON) MIB packet, use the **rmon capture-userdata** command in global configuration mode. To enable packet zeroing, use the **no** form of this command.

rmon capture-userdata

no rmon capture-userdata

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

Global configuration

Command History

Release	Modification
12.0(5)T	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Examples

The following command shows how to disable the packet zeroing feature:

```
Router(config)#
rmon capture-userdata
```

Related Commands

Command	Description
rmon collection matrix	Enables a RMON MIB matrix group of statistics on an interface.
show rmon matrix	Displays RMON statistics.

rmon collection history

To enable Remote Monitoring (RMON) history gathering on an interface, use the **rmon collection history** command in interface configuration mode. To disable the history gathering on an interface, use the **no** form of this command.

rmon collection history controlEntry *integer* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]

no rmon collection history controlEntry *integer* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]

Syntax Description

controlEntry	Specifies the RMON group of statistics using a value.
integer	Value in the range from 1 to 65535 that identifies the RMON group of statistics and matches the index value returned for Simple Network Management Protocol (SNMP) requests.
owner	(Optional) Specifies the name of the owner of the RMON group of statistics.
ownername	(Optional) Name of the owner of the RMON group of statistics.
buckets	(Optional) Specifies that a maximum number of buckets desired is set for the RMON collection history group of statistics.
bucket-number	(Optional) Maximum number of buckets.
interval	(Optional) Specifies the number of seconds for which history should be gathered in a single bucket. When the interval ends, history is collected into a new bucket.
seconds	(Optional) Number of seconds in the interval.

Command Default

Disabled

Command Modes

Interface configuration

Command History

Release	Modification
12.0(5)T	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Examples

The following example shows how to enables an RMON MIB collection history group of statistics with an ID number of 20 and an owner as john:

```
Router(config-if)#
rmon collection history controlEntry 20 owner john
```

Related Commands

Command	Description
show rmon capture	Displays the contents of the RMON history table.
show rmon matrix	Displays the RMON MIB matrix table.

rmon collection host

To enable a Remote Monitoring (RMON) MIB host collection group of statistics on the interface, use the **rmon collection host** command in interface configuration mode. To remove the specified RMON host collection, use the **no** form of this command.

rmon collection host controlEntry *integer* [**owner** *ownername*]

no rmon collection host controlEntry *integer* [**owner** *ownername*]

Syntax Description

controlEntry	Specifies an identification number for the RMON group of statistics.
integer	Integer in the range from 1 to 65535.
owner	(Optional) Indicates that a name is specified for the owner of the RMON group of statistics.
ownername	(Optional) String value identifying the owner.

Command Default

No RMON host collection is specified.

Command Modes

Interface configuration

Command History

Release	Modification
12.0(5)T	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Examples

The following command shows how to enable an RMON collection host group of statistics with an ID number of 20 and specifies john as the owner:

```
Router(config-if)#
rmon collection host controlEntry 20 owner john
```

Related Commands

Command	Description
show rmon hosts	Displays the RMON MIB hosts table.
show rmon matrix	Displays the RMON MIB matrix table.

rmon collection matrix

To enable a Remote Monitoring (RMON) MIB matrix group of statistics on an interface, use the **rmon collection matrix** command in interface configuration mode. To remove a specified RMON matrix group of statistics, use the **no** form of this command.

rmon collection matrix controlEntry *integer* [**owner** *ownername*]

no rmon collection matrix controlEntry *integer* [**owner** *ownername*]

Syntax Description

controlEntry	Specifies an identification number for the RMON matrix group of statistics.
integer	Integer in the range from 1 to 65535.
owner	(Optional) Indicates that a name is specified for the owner of the RMON matrix group of statistics.
ownername	(Optional) String that specifies the name of the owner.

Command Default

No RMON matrix group of statistics is specified.

Command Modes

Interface configuration

Command History

Release	Modification
12.0(5)T	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

Use the **show rmon matrix**command to display RMON statistics.

Examples

The following command shows how to enable the RMON collection matrix group of statistics with an ID number of 25 and specifies john as the owner:

```
Router(config-if)#
rmon collection matrix controlEntry 25 owner john
```

Related Commands

Command	Description
show rmon matrix	Displays the RMON MIB matrix table.

rmon collection rmon1

To enable all possible autoconfigurable Remote Monitoring (RMON) MIB statistic collections on the interface, use the **rmon collection rmon1** command in interface configuration mode. To disable these statistic collections on the interface, use the **no** form of this command.

rmon collection rmon1 controlEntry *integer* [**owner** *ownername*]

no rmon collection rmon1 controlEntry *integer* [**owner** *ownername*]

Syntax Description

controlEntry	Specifies an identification number for the RMON group of statistics.
integer	Integer in the range from 1 to 65535.
owner	(Optional) Indicates that a name is specified for the owner of the RMON group of statistics.
ownername	(Optional) String that identifies the name of the owner.

Command Default

Disabled.

Command Modes

Interface configuration

Command History

Release	Modification
12.0(5)T	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Examples

The following command shows how to enable the RMON collection rmon1 group of statistics with an ID number of 30 and specifies “john” as the owner:

```
Router(config-if)#
rmon collection rmon1 controlEntry 30 owner john
```

Related Commands

Command	Description
show rmon matrix	Displays the RMON MIB matrix table.

rmon event

To add or remove an event (in the Remote Monitoring (RMON) event table) that is associated with an RMON event number, use the **rmon event** command in global configuration mode. To disable RMON on the interface, use the **no**form of this command.

rmon event *number* **[log]** [**trap** *community*] [**description** *string*] [**owner** *string*]

no rmon event *number*

Syntax Description

number	Assigned event number, which is identical to the eventIndex in the eventTable in the RMON MIB.
log	(Optional) Generates an RMON log entry when the event is triggered and sets the *eventType* in the RMON MIB to *log* or *log-and-trap*.
trap	(Optional) Specifies a Simple Network Management Protocol (SNMP) community string used for this trap. Configures the setting of the *eventType* in the RMON MIB for this row as either *snmp-trap* or *log-and-trap*. This value is identical to the *eventCommunityValue* in the eventTable of the RMON MIB.
community	(Optional) SNMP community string used for a trap.
description	(Optional) Specifies a description of the event, which is identical to the event description in the eventTable of the RMON MIB.
string	(Optional) Description of the event.
owner	(Optional) Specifies an owner for this event, which is identical to the *eventOwner*in the eventTable of the RMON MIB.
string	(Optional) Name of the event owner.

Command Default

No events are configured.

Command Modes

Global configuration

Command History

Release	Modification
11.2	This command was introduced.
12.2(14)SX	Support for this command was introduced on the Supervisor Engine 720.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was extended to the 12.2(17d)SXB release.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.2(02)SA	This command was implemented on the Cisco ME 2600X Series Ethernet Access Switches.

Usage Guidelines

Use the **trap** *community* keyword and argument to configure the setting of the *eventType* in the RMON MIB for this row as either *snmp-trap* or *log-and-trap*. This value is identical to the *eventCommunityValue* in the eventTable in the RMON MIB.

See RFC 1757 for more information about the RMON MIB.

Examples

The following example shows how to enable the **rmon event**command:

```
rmon event 1 log trap eventtrap description “High ifOutErrors” owner owner2
```

This example configuration creates RMON event number 1, which is defined as High ifOutErrors, and generates a log entry when the event is triggered by an alarm. The user owner2 owns the row that is created in the event table by this command. This configuration also generates an SNMP trap when the event is triggered.

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon alarm	Sets an alarm on any MIB object.
show rmon	Displays the current RMON agent status on the router.

rmon hc-alarms

To set a high-capacity (HC) alarm on any MIB object, use the **rmon hc-alarms** command in global configuration mode. To disable the alarm, use the **no** form of this command.

rmon hc-alarms *number variable interval* {**delta**| **absolute**} **rising-threshold** *value* [*event-number*] **falling-threshold** *value* [*event-number*] [**owner** *string*]

no rmon hc-alarms *number*

Syntax Description

number	Alarm number, which is identical to the alarmIndexobject of the alarmTable in the Remote Monitoring (RMON) MIB.
variable	MIB object to monitor, which translates into the alarmVariable object used in the alarmTable of the RMON MIB. Supports 64-bit values.
interval	Time, in seconds, the alarm monitors the MIB variable, which is identical to the alarmIntervalobject used in the alarmTable of the RMON MIB.
delta	Tests the change between MIB variables, which affects the alarmSampleType object in the alarmTable of the RMON MIB.
absolute	Tests each MIB variable directly, which affects the alarmSampleType object in the alarmTable of the RMON MIB.
rising-threshold	Sets the value at which the alarm is triggered.
value	When used with the **rising-threshold** keyword, the value at which the alarm is triggered. When used with the **falling-threshold** keyword, the value at which the alarm is reset.
event-number	(Optional) Event number to trigger when the rising or falling threshold exceeds its limit. This value is identical to the alarmRisingEventIndex object or the alarmFallingEventIndex object in the alarmTable of the RMON MIB.
falling-threshold	Sets the value at which the alarm is reset.
owner	(Optional) Specifies an owner for the alarm, which is identical to the alarmOwner object in the alarmTable of the RMON MIB.

string	(Optional) Name of the owner for the alarm.

Command Default

No alarms are configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
12.2(33)SXI	This command was introduced.
12.2(33)SRE	This command was integrated into Cisco IOS Release 12.2(33)SRE.

Usage Guidelines

You must specify the MIB object as a dotted decimal value after the entry sequence (for example, ifEntry.10.1). You cannot specify the variable name and the instance (for example, ifInOctets.1) or the entire dotted decimal notation. The argument must be of the form *entry.integer.instance*.

To disable the RMON alarms, you must use the **no** form of the command on each configured alarm. For example, enter **no rmon alarm 4**, where the 4 identifies which alarm is to be removed.

See RFC 3434 for more information about the RMON HC alarm group.

Examples

The following example shows how to configure an RMON HC alarm:

```
Router(config)# rmon hc-alarms 2 ifInOctets.2 20 delta rising-threshold 2000 2
falling-threshold 1000 1 owner own
```

RMON HC alarm number 2 is configured in this example. The alarm monitors the MIB variable ifInOctets.2 once every 20 seconds until the alarm is disabled, and checks the change in the rise or fall of the variable. If the ifInOctets.2value shows a MIB counter increase of 2000 or more, such as from 100000 to 100015, the alarm is triggered. The alarm in turn triggers event number 2, which is configured with the **rmon event** command. Possible events include a log entry or a Simple Network Management Protocol (SNMP) trap. If theifInOctets.*2* value changes by 1000 (falling threshold is 1000), the alarm is reset and can be triggered again.

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon event	Adds or removes an event in the RMON event table that is associated with an RMON event number.
show rmon hc-alarms	Displays the contents of the RMON HC alarm table of the router.

show rmon capture

To display the contents of the router's RMON capture table, use the **show rmon capture** command in EXEC mode.

show rmon capture

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

For additional information, refer to the RMON MIB described in RFC 1757.

You must have first enabled RMON on the interface, and configured RMON alarms and events to display alarm information with the **show rmon capture** command.

This command is available on the Cisco 2500 series and Cisco AS5200 series only.

Examples

The following is sample output from the **show rmon capture**command:

```
Router# show rmon capture
Buffer 4096 is active, owned by manager1
 Captured data is from channel 4096
 Slice size is 128, download size is 128
 Download offset is 0
 Full Status is spaceAvailable, full action is lockWhenFull
 Granted 65536 octets out of 65536 requested
 Buffer has been on since 00:01:16, and has captured 1 packets
  Current capture buffer entries:
   Packet 1 was captured 416 ms since buffer was turned on
   Its length is 326 octets and has a status type of 0
   Packet ID is 634, and contains the following data:
00 00 0c 03 12 ce 00 00 0c 08 9d 4e 08 00 45 00
01 34 01 42 00 00 1d 11 e3 01 ab 45 30 15 ac 15
31 06 05 98 00 a1 01 20 9f a8 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
```

The table below describes the significant fields shown in the ouput.

Table 1: show rmon capture Field Descriptions

Field	Description
Buffer 4096 is active	Equates to bufferControlIndex in the bufferControlTable of RMON. Uniquely identifies a valid (active) row in this table.
owned by manager1	Denotes the owner of this row. Equates to bufferControlOwner in the bufferControlTable of RMON.
Captured data is from channel	Equates to the bufferControlChannelIndex and identifies which RMON channel is the source of these packets.
Slice size is	Identifies the maximum number of octets of each packet that will be saved in this capture buffer. Equates to bufferControlCaptureSliceSize of RMON.
download size is	Identifies the maximum number of octets of each packet in this capture buffer that will be returned in an SNMP retrieval of that packet. Equates to bufferControlDownloadSliceSize in RMON.
Download offset is	Offset of the first octet of each packet in this capture buffer that will be returned in an SNMP retrieval of that packet. Equates to bufferControlDownloadOffset in RMON.
Full Status is spaceAvailable	Shows whether the buffer is full or has room to accept new packets. Equates to bufferControlFullStatus in RMON.
full action is lockWhenFull	Controls the action of the buffer when it reaches full status. Equates to bufferControlFullAction in RMON.
Granted 65536 octets	Actual maximum number of octets that can be saved in this capture buffer. Equates to bufferControlMaxOctetsGranted in RMON.
out of 65536 requested	Requested maximum number of octets to be saved in this capture buffer. Equates to bufferControlMaxOctetsRequested in RMON.
Buffer has been on since	Indicates how long the buffer has been available.
and has captured 1 packets	Number of packets captured since buffer was turned on. Equates to bufferControlCapturedPackets in RMON.

Field	Description
Current capture buffer entries:	Lists each packet captured.
Packet 1 was captured 416 ms since buffer was turned on Its length is 326 octets and has a status type of 0	Zero indicates the error status of this packet. Equates to captureBufferPacketStatus in RMON, where its value options are documented.
Packet ID is	Index that describes the order of packets received on a particular interface. Equates to captureBufferPacketID in RMON.
and contains the following data:	Data inside the packet, starting at the beginning of the packet.

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon alarm	Sets an alarm on any MIB object.
rmon event	Adds or removes an event in the RMON event table that is associated with an RMON event number.
show rmon	Displays the current RMON agent status on the router.

show rmon events

To display the contents of the router's RMON event table, use the **show rmon events** command in EXEC mode.

show rmon events

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.2(02)SA	This command was implemented on the Cisco ME 2600X Series Ethernet Access Switches.

Usage Guidelines

For additional information, refer to the RMON MIB described in RFC 1757.

You must have first enabled RMON on the interface, and configured RMON events to display alarm information with the **show rmon events**command.

Examples

The following is sample output from the **show rmon events**command:

```
Router# show rmon events
Event 12 is active, owned by manager1
 Description is interface-errors
 Event firing causes log and trap to community rmonTrap, last fired 00:00:00
```

The table below describes the significant fields shown in the display.

Table 2: show rmon events Field Descriptions

Field	Description
Event 12 is active, owned by manager1	Unique index into the eventTable, showing the event status is active, and the owner of this row, as defined in the eventTable of RMON.

Field	Description
Description is interface-errors	Type of event, in this case an interface error.
Event firing causes log and trap	Type of notification that the router will make about this event. Equivalent to eventType in RMON.
community rmonTrap	If an SNMP trap is to be sent, it will be sent to the SNMP community specified by this octet string. Equivalent to eventCommunity in RMON.
last fired	Last time the event was generated.

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon event	Adds or removes an event in the RMON event table that is associated with an RMON event number.
show rmon	Displays the current RMON agent status on the router.

show rmon filter

To display the contents of a router's Remote Monitoring (RMON) filter table, use the **show rmon filter** command in privileged EXEC mode.

show rmon filter

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

For additional information, see the RMON MIB described in RFC 1757.

You must have first enabled RMON on the interface and configured RMON alarms and events to display alarm information with the **show rmon filter** command.

This command is available on the Cisco 2500 series and Cisco AS5200 series only.

Examples

The following is sample output from the **show rmon filter**command:

```
Router# show rmon filter
Filter 4096 is active, and owned by manager1
 Data offset is 12, with
 Data of  08 00 00 00 00 00 00 00 00 00 00 00 00 ab 45 30 15 ac 15 31 06
 Data Mask is ff ff 00 00 00 00 00 00 00 00 00 00 00 00 ff ff ff ff ff ff ff ff
 Data Not Mask is 0
 Pkt status is 0, status mask is 0, not mask is 0
 Associated channel 4096 is active, and owned by manager1
 Type of channel is acceptFailed, data control is off
 Generate event index 0
 Event status is eventFired, # of matches is 1482
 Turn on event index is 0, turn off event index is 0
 Description:
```

The table below describes the significant fields shown in the display.

Table 3: show rmon filter Field Descriptions

Field	Description
Filter *x* is active, and owned by *y*	Unique index of the filter, its current state, and the owner, as defined in the filterTable of RMON.
Data offset is	Offset from the beginning of each packet where a match of packet data will be attempted. Equivalent to filterPktDataOffset in RMON.
Data of	Data that is to be matched with the input packet. Equivalent to filterPktData in RMON.
Data Mask is	Mask that is applied to the match process. Equivalent to filterPktDataMask in RMON.
Data Not Mask is	Inversion mask that is applied to the match process. Equivalent to filterPktDataNotMask in RMON.
Pkt status is	Status that is to be matched with the input packet. Equivalent to filterPktStatus in RMON.
status mask is	Mask that is applied to the status match process. Equivalent to filterPktStatusMask in RMON.
not mask is	Inversion mask that is applied to the status match process. Equivalent to filterPktStatusNotMask in RMON.
Associated channel *x* is active, and owned by *y*	Unique index of the channel, its current state, and the owner, as defined in the channelTable of RMON.
Type of channel is {acceptMatched | acceptFailed}	This object controls the action of the filters associated with this channel. Equivalent to channelAcceptType of RMON.
data control is {off | on }	This object controls the flow of data through this channel. Equivalent to channelDataControl in RMON.
Generate event index 0	Value of this object identifies the event that is to be generated when the associated channelDataControl is on and a packet is matched. Equivalent to channelEventIndex in RMON.
Event status is eventFired	When the channel is configured to generate events and when packets are matched, this message indicates the means of controlling the flow of those events. Equivalent to channelEventStatus in RMON.

Field	Description
# of matches is	Number of times this channel has matched a packet. Equivalent to channelMatches in RMON.
Turn on event index is	Value of this object identifies the event that is configured to turn the associated channelDataControl from off to on when the event is generated. Equivalent to channelTurnOnEventIndex in RMON.
Turn off event index is	Value of this object identifies the event that is configured to turn the associated channelDataControl from on to off when the event is generated. Equivalent to channelTurnOffEventIndex in RMON.
Description:	Comment describing this channel.

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon alarm	Sets an alarm on any MIB object.
rmon event	Adds or removes an event in the RMON event table that is associated with an RMON event number.
show rmon	Displays the current RMON agent status on the router.

show rmon hc-alarms

To display the contents of the RMON high-capacity (HC) alarm table of the router, use the **show rmon hc-alarms** command in user EXEC or privileged EXEC mode.

show rmon hc-alarms

Syntax Description

This command has no arguments or keywords.

Command Modes

User EXEC (>) Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SXI	This command was introduced.
12.2(33)SRE	This command was integrated into Cisco IOS Release 12.2(33)SRE.

Usage Guidelines

For additional information on RMON MIB, refer to the RMON MIB for HC Alarms described in RFC 3434.

You must first enable RMON on the interface and configure RMON HC alarms before you can display alarm information with the **show rmon hc-alarms** command.

Examples

The following is sample output from the **show rmon hc-alarms**command:

```
Router# show rmon hc-alarms
Monitors ifInOctets.1 every 20 second(s)
 Taking absolute samples, last value was 0
 Rising threshold Low is 4096, Rising threshold Hi is 0,
               assigned to event 0
 Falling threshold Low is 1280, Falling threshold Hi is 0,
               assigned to event 0
 On startup enable rising or falling alarm
```

The table below describes the fields shown in the display.

Table 4: show rmon hc-alarms Field Descriptions

Field	Description
Monitors ifInOctets.1	Object identifier of the particular variable to be sampled. Equivalent to alarmVariable in RMON.
every 20 seconds	Interval in seconds over which the data is sampled and compared with the rising and falling thresholds. Equivalent to alarmInterval in RMON.

Field	Description
Taking absolute samples	Method of sampling the selected variable and calculating the value to be compared against the thresholds. Equivalent to alarmSampleType in RMON.
last value was	Value of the statistic during the last sampling period. Equivalent to alarmValue in RMON.
Rising threshold Low is Rising threshold High is	Threshold for the sampled statistic. Equivalent to alarmRisingThreshold in RMON.
assigned to event	Index of the eventEntry that is used when a rising threshold is crossed. Equivalent to alarmRisingEventIndex in RMON.
Falling threshold Low is Falling threshold High is	Threshold for the sampled statistic. Equivalent to alarmFallingThreshold in RMON.
assigned to event	Index of the eventEntry that is used when a falling threshold is crossed. Equivalent to alarmFallingEventIndex in RMON.
On startup enable rising or falling alarm	Alarm that may be sent when this entry is first set to valid. Equivalent to alarmStartupAlarm in RMON.

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon hc-alarms	Sets a high-capacity alarm on any MIB object.

show rmon hosts

To display the contents of the router's RMON hosts table, use the **show rmon hosts** command in EXEC mode.

show rmon hosts

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

You must have first enabled RMON on the interface, and configured RMON alarms and events to display alarm information with the **show rmon hosts** command.

This command is available on the Cisco 2500 series and Cisco AS5200 series only.

For additional information, refer to the RMON MIB described in RFC 1757.

Examples

The following is sample output from the **show rmon hosts**command:

```
Router# show rmon hosts
Host Control Entry 1 is active, and owned by manager1
 Monitors host ifEntry.1.1
 Table size is 51, last time an entry was deleted was 00:00:00
  Creation Order number is 1
   Physical address is 0000.0c02.5808
   Packets: rcvd 6963, transmitted 7041
   Octets: rcvd 784062, transmitted 858530
   # of packets transmitted: broadcast 28, multicast 48
   # of bad packets transmitted is 0
```

The table below describes the significant fields shown in the display.

Table 5: show rmon hosts Field Descriptions

Field	Description
Host Control Entry 1 is active, and owned by manager1	Unique index of the host entry, its current state, and the owner as defined in the hostControlTable of RMON.
Monitors host ifEntry.1.1	This object identifies the source of the data for this instance of the host function. Equivalent to hostControlDataSource in RMON.
Table size is	Number of hostEntries in the hostTable and the hostTimeTable associated with this hostControlEntry. Equivalent to hostControlTableSize in RMON.
last time an entry was deleted was	Time when the last entry was deleted from the hostTable.
Creation Order number is	Index that defines the relative ordering of the creation time of hosts captured for a particular hostControlEntry. Equivalent to hostCreationOrder in RMON.
Physical address is	Physical address of this host. Equivalent to hostAddress in RMON.
Packets: rcvd	Number of good packets transmitted to this address. Equivalent to hostInPkts in RMON.
transmitted	Number of packets, including bad packets transmitted by this address. Equivalent to hostOutPkts in RMON.
Octets: rcvd	Number of octets transmitted to this address since it was added to the hostTable (excluding framing bits but including FCS octets), except for those octets in bad packets. Equivalent to hostInOctets in RMON.
transmitted	Number of octets transmitted by this address since it was added to the hostTable (excluding framing bits but including FCS octets), including those octets in bad packets. Equivalent to hostOutOctets in RMON.
# of packets transmitted:	Number of good packets transmitted by this address that were broadcast or multicast.
# of bad packets transmitted is	Number of bad packets transmitted by this address.

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon alarm	Sets an alarm on any MIB object.
rmon event	Adds or removes an event in the RMON event table that is associated with an RMON event number.
show rmon	Displays the current RMON agent status on the router.

show rmon matrix

To display the contents of the router's RMON matrix table, use the **show rmon matrix** command in EXEC mode.

show rmon matrix

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

You must have first enabled RMON on the interface, and configured RMON alarms and events to display alarm information with the **show rmon matrix** command.

This command is available on the Cisco 2500 series and Cisco AS5200 series only.

For additional information, refer to the RMON MIB described in RFC 1757.

Examples

The following is sample output from the **show rmon matrix**command:

```
Router# show rmon matrix
Matrix 1 is active, and owned by manager1
 Monitors ifEntry.1.1
 Table size is 451, last time an entry was deleted was at 00:00:00
```

The table below describes the significant fields shown in the display.

Table 6: show rmon matrix Field Descriptions

Field	Description
Matrix 1 is active, and owned by manager1	Unique index of the matrix entry, its current state, and the owner as defined in the matrixControlTable of RMON.

Field	Description
Monitors ifEntry.1.1	This object identifies the source of the data for this instance of the matrix function. Equivalent to matrixControlDataSource in RMON.
Table size is 451, last time an entry was deleted was at	Size of the matrix table and the time that the last entry was deleted.

Related Commands

Command	Description
rmon	Enables RMON on an Ethernet interface.
rmon alarm	Sets an alarm on any MIB object.
rmon event	Adds or removes an event in the RMON event table that is associated with an RMON event number.
show rmon	Displays the current RMON agent status on the router.