Sun Ethernet Fabric Operating System RMON Administration Guide

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Using This Documentation

- **Overview** – Provides information and procedures that explain how to configure Oracle RMON protocol that runs as a part of SEFOS
- **Audience** – Network administrators who configure and maintain SEFOS environments
- **Required Knowledge** – Basic knowledge of the RMON protocol

Product Documentation Library

Documentation and resources for this product and related products are available at:

- http://www.oracle.com/goto/es2-72_es2-64/docs
- http://www.oracle.com/goto/ES1-24/docs
- http://www.oracle.com/goto/sn-10gbE-72p/docs
- http://www.oracle.com/goto/sb6k-24p-10gbe/docs

Acronyms and Abbreviations

Acronym or Abbreviation	Explanation
CLI	Command-line interface
ID	Identifier
ISP	Internet service provider
NEM	Network express module
RMON	Remote monitoring
SEFOS	Sun Ethernet Fabric Operating System
SNMP	Simple Network Management Protocol

CLI Command Modes

The following table lists the configuration modes used in this document with their access and exit methods.

Command Mode	Access Method	Prompt	Exit Method
User EXEC	Access SEFOS from Oracle ILOM with read-only rights (privilege level 1).	`SEFOS>`	Use the `logout` or `exit` command to return to the Oracle ILOM prompt.
Privileged EXEC	Access SEFOS from Oracle ILOM with full administrative rights (privilege level 15).	`SEFOS#`	Use the `logout` or `exit` command to return to the Oracle ILOM prompt.
Global Configuration	From User EXEC mode, use the `enable` command.	`SEFOS(config)#`	Use the `end` command to return to Privileged EXEC mode.
Interface Configuration	From Global Configuration mode, use the `interface interface-type interface-id` command.	`SEFOS(config-if)#`	Use the `exit` command to return to Global Configuration mode, or use the `end` command to return to Privileged EXEC mode.

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RMON Overview

This section describes the SEFOS RMON protocol and provides an example topology of a typical RMON configuration.

Protocol Description

RMON is a portable implementation of the Remote Network Monitoring Protocol that conforms to RFC 2819. The RMON software provides remote monitoring of network segments from a central network manager by using an embedded probe that monitors all of the segments to which the network device is connected. RMON provides network administrators with comprehensive network-fault diagnosis, planning, and performance-tuning information. Remote probe devices perform the data collection and processing, which reduces the SNMP traffic on the network and the processing load on the management station. Instead of continuous polling, information is only transmitted to the management station, when required.

RMON provides standard information that you can use to monitor, analyze, and troubleshoot a group of distributed LANs. The standard information includes:

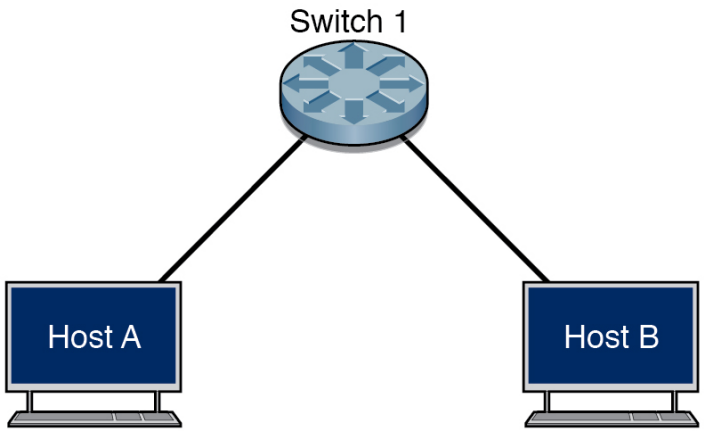
- Packets sent
- Bytes sent
- Packets dropped
- Statistics by host collected by conversations between two sets of addresses
- Certain kinds of events that have occurred

RMON supports these monitoring functions:

- Ethernet statistics, which monitor the flow and type of packets over the specific port
- Ethernet history collection, which shows the flow of packets for a particular interval of time
- Alarms, which monitor the packet size and trigger specified events when the packet count increases or decreases
- Events, which trigger the event types (none, log, or trap)

Topology Example

This example topology illustrates a general network configuration on which you can configure RMON. The procedures in this guide are based on the values given in this example topology. The values for your site might be different. However, you can use this example as a guide to configure RMON in your network environment.



This table contains the network details for the example topology. The procedures in this guide use these values in the instructions as user input.

Node	Port	MAC Address	IP Address
Host A	eth0	`00:11:22:33:44:0a`	`12.0.0.10`
Host B	eth0	`00:11:22:33:44:0b`	`12.0.0.20`
Switch 1	Port 1	`00:01:02:03:04:01`	`12.0.0.1`

Configuring RMON

This section contains procedures that explain how to configure the SEFOS RMON features. The procedures in this section are based on “Topology Example” on page 10. Before you can configure the RMON features, you must configure your network environment and enable the RMON module.

These sections show how to configure RMON:

Enabling the RMON Module

This section contains procedures that explain how to enable or disable the RMON module. Before you can configure RMON features, you must configure your network environment, as described in “Topology Example” on page 10. Fatal error messages are displayed if you execute commands without enabling the RMON feature. If the RMON module is disabled, the commands have no effect even if they are configured.

▼ Enable the RMON Module

1. **Enter Global Configuration mode.**

```
SEFOS# configure terminal
```

2. **Enable the RMON module.**

```
SEFOS(config)# set rmon enable
SEFOS(config)# exit
```

3. **Review the RMON enable status.**

```
SEFOS# show rmon
RMON is enabled
```

▼ Disable the RMON Module

1. **Enter Global Configuration mode.**

```
SEFOS# configure terminal
```

2. **Disable the RMON module.**

```
SEFOS(config)# set rmon disable
SEFOS(config)# exit
```

3. **Review the RMON details.**

```
SEFOS# show rmon
RMON is disabled
```

Configuring the Ethernet Statistics Group

The RMON Ethernet statistics group collects statistics for each monitored interface on the device and stores them in the Ethernet statistics table (`etherStatsTable`). This section contains procedures that explain how to enable or disable the Ethernet statistics group.

- "Enable the Ethernet Statistics Group" on page 12
- "Disable the Ethernet Statistics Group" on page 13

▼ Enable the Ethernet Statistics Group

You can configure the collection of statistics over any port.

1. **Enter Global Configuration mode.**

```
SEFOS# configure terminal
```

2. **Enter Interface Configuration mode.**

```
SEFOS(config)# interface extreme-ethernet 0/15
```

3. **Enable the statistics group on the specified interface (port 15).**

```
SEFOS(config-if)# rmon collection stats 1 owner myTest
SEFOS(config-if)# exit
SEFOS(config)# exit
```

4. **Verify the entries.**

```
SEFOS# show rmon statistics 1

RMON is enabled
Collection 1 on EX0/15 is active, and owned by myTest,
Monitors ifEntry.1.15 which has
 Received 1556 octets, 16 packets,
 1 broadcast and 0 multicast packets,
 0 undersized and 0 oversized packets,
 0 fragments and 0 jabbers,
 0 CRC alignment errors and 0 collisions.
 # of packets received of length (in octets):
 64: 2, 65-127: 14, 128-255: 0,
 256-511: 0, 512-1023: 0, 1024-1518: 0
```

▼ Disable the Ethernet Statistics Group

1. **Enter the interface mode for the interface.**

```
SEFOS# configure terminal
SEFOS(config)# interface extreme-ethernet 0/15
```

2. **Disable the Ethernet statistics group.**

```
SEFOS(config-if)# no rmon collection stats 1
SEFOS(config-if)# exit
SEFOS(config)# exit
```

3. **Review the statistics entry.**

```
SEFOS# show rmon statistics

RMON is enabled
Statistics entry with this index does not exist
```

Configuring the Ethernet History Group

The Ethernet history group collects a periodic statistical sampling of the data collected by the Ethernet statistics group. The history group stores the samples collected from the Ethernet statistics table in the Ethernet history table (`etherHistoryTable`). This section contains procedures that explain how to enable or disable the Ethernet history group.

- "Enable the Ethernet History Group" on page 14
- "Disable the Ethernet History Group" on page 15

▼ Enable the Ethernet History Group

You also can configure history collection over port 2.

1. **Enter Global Configuration mode for the interface.**

```
SEFOS# configure terminal
SEFOS(config)# interface extreme-ethernet 0/15
```

2. **Enable the history group on the specified interface (port 15).**

```
SEFOS(config-if)# rmon collection history 1 buckets 25 interval 30
SEFOS(config-if)# end
```

3. **Verify the entries.**

```
SEFOS# show rmon history 1

RMON is enabled
Entry 1 is active,  and owned by myTest
 Monitors ifEntry.1.15 every 30 second(s)
 Requested # of time intervals, ie buckets, is 25,
 Granted # of time intervals, ie buckets, is 25,
  Sample 1 began measuring at Jul  9 03:51:07 2010
   Received 3124 octets, 31 packets,
   0 broadcast and 0 multicast packets,
   0 undersized and 0 oversized packets,
   0 fragments and 0 jabbers,
```

```
 0 CRC alignment errors and 0 collisions,
 # of dropped packet events is 0
 Network utilization is estimated at 0
Sample 2 began measuring at Jul  9 03:51:37 2010
 Received 3124 octets, 31 packets,
 0 broadcast and 0 multicast packets,
 0 undersized and 0 oversized packets,
 0 fragments and 0 jabbers,
 0 CRC alignment errors and 0 collisions,
 # of dropped packet events is 0
 Network utilization is estimated at 0
Sample 3 began measuring at Jul  9 03:52:07 2010
 Received 3124 octets, 31 packets,
 0 broadcast and 0 multicast packets,
 0 undersized and 0 oversized packets,
 0 fragments and 0 jabbers,
 0 CRC alignment errors and 0 collisions,
 # of dropped packet events is 0
 Network utilization is estimated at 0
```

▼ Disable the Ethernet History Group

1. Enter Global Configuration mode for the interface.

```
SEFOS# configure terminal
SEFOS(config)# interface extreme-ethernet 0/15
```

2. Disable the Ethernet history group.

```
SEFOS(config-if)# no rmon collection history 1
SEFOS(config-if)# end
SEFOS(config)# exit
```

3. Review the RMON history.

```
SEFOS# show rmon history

RMON is enabled
% History entry with this index does not exist
```

Configuring Events

The event group generates events whenever an alarm condition takes place in the device. The alarm group calls the event group, so you must first create an event for the alarm to call. This

section contains procedures that explain how to create or disable events. To create an event, you must set the event type (none, log, or trap) and provide an event description.

- "Create an Event" on page 16
- "Disable an Event" on page 16

Create an Event

1. **Enter Global Configuration mode.**

```
SEFOS# configure terminal
```

2. **Create an event that can be triggered for every rise in the flow of packets.**

```
SEFOS(config)# rmon event 1 description rise log owner myTest trap PUBLIC
```

3. **Create an event that can be triggered for every fall in the flow of packets.**

```
SEFOS(config)# rmon event 2 description fall log owner myTest trap NETMAN
SEFOS(config)# exit
```

4. **Review the RMON events.**

```
SEFOS# show rmon events

RMON is enabled
Event 1 is active, owned by myTest
 Description is rise
 Event firing causes log and trap to community PUBLIC,
 Time last sent is Feb  9 15:01:37 2010
 Logging Event With Description : rise
 Logging Event With Description : rise

Event 2 is active, owned by system
 Description is fall
 Event firing causes log and trap to community NETMAN,
 Time last sent is Feb  9 14:59:07 2010
 Logging Event With Description : fall
```

Disable an Event

1. **Enter Global Configuration mode.**

```
SEFOS# configure terminal
```

2. **Disable the event.**

```
SEFOS(config)# no rmon event 1
SEFOS(config)# exit
```

3. **Review the event table.**

```
SEFOS# show rmon events

RMON is enabled
Event table is empty
```

Configuring Alarms

The alarm group periodically takes statistical samples from variables in the probe and compares them with the thresholds that have been configured. When a threshold is crossed, an event is generated using the alarm hysteresis mechanism. This section contains procedures that explain how to create or disable alarms.

- "Create an Alarm" on page 17
- "Disable an Alarm" on page 18

▼ Create an Alarm

To create an alarm, you must configure these parameters:

- Alarm variable (object identifier)
- Alarm sample type
- Alarm interval
- Start up alarm
- Rise or fall threshold values
- Event index

You must create an event table entry before you can create an alarm. For instructions on how to create an event, see "Create an Event" on page 16.

1. **Create an alarm for absolute samples.**

```
SEFOS(config)# rmon alarm 1 1.3.6.1.2.1.16.1.1.1.6.1 20 absolute rising-threshold 500 1
 falling-threshold 200 2 owner myTest
```

2. **Create an alarm for delta samples.**

```
SEFOS(config)# rmon alarm 2 1.3.6.1.2.1.16.1.1.1.7.1 25 delta rising-threshold 200
 falling-threshold 100 owner system
```

3. **Review the alarm configuration.**

```
SEFOS# show rmon alarms

RMON is enabled
Alarm 1 is active,  owned by myTest
 Monitors 1.3.6.1.2.1.16.1.1.1.6.1 every 20 second(s)
 Taking absolute samples, last value was 837
 Rising threshold is 200, assigned to event 1
 Falling threshold is 100, assigned to event 2
 On startup enable rising alarm
 Alarm 2 is active,  owned by system
 Monitors 1.3.6.1.2.1.16.1.1.1.7.1 every 25 second(s)
 Taking delta samples, last value was 201
 Rising threshold is 100, assigned to event 1
 Falling threshold is 50, assigned to event 2
 On startup enable falling alarm
```

▼ Disable an Alarm

1. **Enter Global Configuration mode.**

```
SEFOS# configure terminal
```

2. **Disable the alarm.**

```
SEFOS(config)# no rmon alarm 1
```

3. **Review the alarm table.**

```
SEFOS# show rmon alarms

RMON is enabled
Alarm table is empty
```