

Chapter 14

Configuring RMON Alarms and Events

The JUNOS software supports monitoring routers from remote devices. These values are measured against thresholds and trigger events when the thresholds are crossed. You configure remote monitoring (RMON) alarm and event entries to monitor the value of a Management Information Base (MIB) object.

For more information on configuring RMON alarm and event entries, see “Configuring RMON Alarms and Events” on page 177 and “Summary of RMON Alarm and Event Configuration Statements” on page 197.

For more information on monitoring integer-valued MIB objects, see “Monitoring RMON Alarms and Events” on page 185.

To configure RMON alarm and event entries, you include statements at the [edit snmp] hierarchy level of the configuration:

```
[edit snmp]
rmon {
  alarm index {
    description text-description;
    falling-event-index index;
    falling-threshold integer;
    interval seconds;
    rising-event-index index;
    rising-threshold integer;
    sample-type (absolute-value | delta-value);
    startup-alarm (falling-alarm | rising alarm | rising-or-falling-alarm);
    variable oid-variable;
  }
  event index {
    community community-name;
    description description;
    type type;
  }
}
```

This chapter describes the minimum required configuration and discusses the following tasks for configuring RMON:

Minimum RMON Alarm and Event Entry Configuration on page 178

Configuring an Alarm Entry and Its Attributes on page 179

Configuring an Event Entry and Its Attributes on page 183

Example: Configuring an RMON Alarm and Event Entry on page 184

Minimum RMON Alarm and Event Entry Configuration

To enable RMON on the router, you must configure an alarm entry and an event entry. To do this, include the following statements at the [edit snmp rmon] hierarchy level:

```
[edit snmp rmon]
alarm index {
    rising-event-index index;
    rising-threshold integer;
    sample-type type;
    variable oid-variable;
}
event index;
```

Configuring an Alarm Entry and Its Attributes

An alarm entry monitors the value of a MIB variable. You can configure how often the value is sampled, the type of sampling to perform, and what event to trigger if a threshold is crossed.

This section discusses the following topics:

Configuring the Alarm Entry on page 179

Configuring the Description on page 180

Configuring the Falling Event Index or Rising Event Index on page 180

Configuring the Falling Threshold or Rising Threshold on page 180

Configuring the Interval on page 181

Configuring the Sample Type on page 181

Configuring the Startup Alarm on page 182

Configuring the Variable on page 182

Configuring the Alarm Entry

An alarm entry monitors the value of a MIB variable. The rising-event-index, rising-threshold, sample-type, and variable statements are mandatory. All other statements are optional.

To configure the alarm entry, include the alarm statement and specify an index at the [edit snmp rmon] hierarchy level:

```
[edit snmp rmon]
alarm index {
  description description;
  falling-event-index index;
  falling-threshold integer;
  interval seconds;
  rising-event-index index;
  rising-threshold integer;
  sample-type (absolute-value | delta-value);
  startup-alarm (falling-alarm | rising alarm | rising-or-falling-alarm);
  variable oid-variable;
}
```

index is an integer that identifies an alarm or event entry.

Configuring the Description

The description is a text string that identifies the alarm entry.

To configure the description, include the description statement and a description of the alarm entry at the [edit snmp rmon alarm index] hierarchy level:

```
[edit snmp rmon alarm index]
description description;
```

Configuring the Falling Event Index or Rising Event Index

The falling event index identifies the event entry that is triggered when a falling threshold is crossed. The rising event index identifies the event entry that is triggered when a rising threshold is crossed.

To configure the falling event index or rising event index, include the falling-event-index or rising-event-index statement and specify an index at the [edit snmp rmon alarm index] hierarchy level:

```
[edit snmp rmon alarm index]
falling-event-index index;
rising-event-index index;
```

index can be from 0 through 65,535. The default for both the falling and rising event index is 0.

Configuring the Falling Threshold or Rising Threshold

The falling threshold is the lower threshold for the monitored variable. When the current sampled value is less than or equal to this threshold, and the value at the last sampling interval is greater than this threshold, a single event is generated. A single event is also generated if the first sample after this entry becomes valid is less than or equal to this threshold, and the associated startup alarm is equal to falling-alarm or rising-or-falling-alarm. After a falling event is generated, another falling event cannot be generated until the sampled value rises above this threshold and reaches the rising threshold. You must specify the falling threshold as an integer. Its default is 20 percent less than the rising threshold.

By default, the rising threshold is 0. The rising threshold is the upper threshold for the monitored variable. When the current sampled value is greater than or equal to this threshold, and the value at the last sampling interval is less than this threshold, a single event is generated. A single event is also generated if the first sample after this entry becomes valid is greater than or equal to this threshold, and the associated startup-alarm is equal to rising-alarm or rising-or-falling-alarm. After a rising event is generated, another rising event cannot be generated until the sampled value falls below this threshold and reaches the falling threshold. You must specify the rising threshold as an integer.



NOTE: Before you configure the falling and rising threshold, check the file system on your PC card to determine its maximum file size. Use the value of the maximum size to determine how to configure the rising and falling thresholds.

To configure the falling threshold or rising threshold, include the falling-threshold or rising-threshold statement at the [edit snmp rmon alarm *index*] hierarchy level:

```
[edit snmp rmon alarm index]
falling-threshold integer;
rising-threshold integer;
```

integer can be a value from -2,147,483,647 through 2,147,483,647.

Configuring the Interval

The interval represents the period of time, in seconds, over which the monitored variable is sampled and compared with the rising and falling thresholds.

To configure the interval, include the interval statement and specify the number of seconds at the [edit snmp rmon alarm *index*] hierarchy level:

```
[edit snmp rmon alarm index]
interval seconds;
```

seconds can be a value from 1 through 2,147,483,647. The default is 60 seconds.

Configuring the Sample Type

The sample type identifies the method of sampling the selected variable and calculating the value to be compared against the thresholds. If the value of this object is absolute-value, the value of the selected variable is compared directly with the thresholds at the end of the sampling interval. If the value of this object is delta-value, the value of the selected variable at the last sample is subtracted from the current value, and the difference is compared with the thresholds.

To configure the sample type, include the sample-type statement and specify the type of sample at the [edit snmp rmon alarm *index*] hierarchy level:

```
[edit snmp rmon alarm index]
sample-type (absolute-value | delta-value);
```

absolute-value—Actual value of the selected variable is compared against the thresholds.

delta-value—Difference between samples of the selected variable is compared against the thresholds.

Configuring the Startup Alarm

The startup alarm identifies the type of alarm that can be sent when this entry is first activated. You can specify it as falling-alarm, rising-alarm, or rising-or-falling-alarm.

To configure the startup alarm, include the startup-alarm statement and specify the type of alarm at the [edit snmp rmon alarm *index*] hierarchy level:

```
[edit snmp rmon alarm index]  
startup-alarm (falling-alarm | rising-alarm | rising-or-falling-alarm);
```

falling-alarm—Generated if the first sample after the alarm entry becomes active is less than or equal to the falling threshold.

rising-alarm—Generated if the first sample after the alarm entry becomes active is greater than or equal to the rising threshold.

rising-or-falling-alarm—Generated if the first sample after the alarm entry becomes active satisfies either of the corresponding thresholds.

The default is rising-or-falling-alarm.

Configuring the Variable

The variable identifies the MIB object that is being monitored.

To configure the variable, include the variable statement and specify the object identifier or object name at the [edit snmp rmon alarm *index*] hierarchy level:

```
[edit snmp rmon alarm index]  
variable oid-variable;
```

oid-variable is a dotted decimal (for example, 1.3.6.1.2.1.2.1.2.2.1.10.1) or MIB object name (for example, ifInOctets.1.).

Configuring an Event Entry and Its Attributes

An event entry generates a notification for an alarm entry when its rising or falling threshold is crossed. You can configure the type of notification that is generated. To configure the event entry, include the event statement at the [edit snmp rmon] hierarchy level. All statements except the event statement are optional.

```
[edit snmp rmon]
event index {
    community community-name;
    description description;
    type type;
}
```

index identifies an entry event.

community-name is the trap group that is used when generating a trap. If that trap group has the rmon-alarm trap category configured, a trap is sent to all the targets configured for that trap group. The community string in the trap matches the name of the trap group. If nothing is configured, all the trap groups are examined, and traps are sent using each group with the rmon-alarm category set.

description is a text string that identifies the entry.

The *type* variable of an event entry specifies where the event is to be logged. You can specify the type as one of the following:

log—Adds the event entry to the logTable.

log-and-trap—Sends an SNMP trap and creates a log entry.

none—Sends no notification.

snmptrap—Sends an SNMP trap.

The default for the event entry type is log-and-trap.

Example: Configuring an RMON Alarm and Event Entry

Configure an RMON alarm and event entry:

```
[edit snmp]
  rmon {
    alarm 100 {
      description "input traffic on fxp0";
      falling-event-index 100;
      falling-threshold 10000;
      interval 60;
      rising-event-index 100;
      rising-threshold 100000;
      sample-type delta-value;
      startup-alarm rising-or-falling-alarm;
      variable ifInOctets.1;
    }
    event 100 {
      community bedrock;
      description "emergency events";
      type log-and-trap;
    }
  }
}
```