SNMP Trap Support for Ruledef and Rulebase

- Feature Summary and Revision History, on page 1
- Feature Description, on page 2
- Configuring the SNMP Trap support for Ruledef and Rulebase Feature, on page 2
- Monitoring and Troubleshooting, on page 4

Feature Summary and Revision History

Summary Data

Applicable Product(s) and Functional Area	• GGSN • P-GW
Applicable Platform(s)	• ASR 5500 • VPC - DI • VPC - SI
Feature Default	Disabled - Configuration Required
Related Changes in This Release	Not Applicable
Related Documentation	• *Command Line Interface Reference* • *ECS Administration Guide*

Revision History

Revision Details	Release
First introduced.	21.3

Feature Description

During back-to-back ICSR switchovers there are instances where a number of subscribers lose the assigned dynamic charging rules. In such cases traffic starts hitting static catchall rules, which not be charged. To track this loss, an SNMP trap is sent when traffic hit these rules. This timely tracking ensures accurate charging.

To ensure that there is no loss of dynamic charging rules, new CLIs are introduced to configure the threshold value, volume monitoring duration, and enable threshold volume for total-volume.

The threshold can be configured for a combination of rulebase and ruledef or rulebase and group-of-ruledef. This threshold is monitored across all subscribers of the system. The SNMP trap is generated when traffic reaches configured threshold value with severity information.

The SNMP trap contains information about the rulebase-name, ruledef-name or group-of-ruledef name, and volume in bytes.

Configuration and Restrictions

Following are the configuration and restrictions that are applicable to this feature:

- The CLI configurations are applicable only for static ruledefs and static group-of-ruledefs.
- P-GW and GGSN service name is not included in the trap information.
- There is no support for Session Recovery and ICSR. These per rulebase per ruledef data statistics are not check-pointed during session recovery and switchover.
- There is a single trap per rulebase and ruledef configuration per system. The SNMP trap is not per subscriber.
- The Operator can configure a maximum of 30 rulebase and ruledefs/group-of-ruledefs to monitor volume thresholds.
- Ruledef, group-of-ruledef, and Rulebase for which threshold monitoring is enabled should be configured in active-charging service configuration. Else trap is not be generated for these.
- Threshold value for total-volume is configured in bytes. The total-volume data sent towards THE external server for a particular monitoring interval is reported in kilobytes.
- As measured data forwarded to the external server is always in kilobytes, data measured in range of 1 to 999 bytes is rounded off to 1 kilobyte. Actual measured data in such cases can be checked using the **show snmp trap history** command.

Configuring the SNMP Trap support for Ruledef and Rulebase Feature

The following section provides the configuration commands in support of this feature.

threshold total-volume rulebase

The following new CLI command is added to configure or delete the threshold value of the total volume for rulebase and ruledef.

This CLI is disabled by default.

To configure the threshold value:

```
configure
        threshold total-volume rulebase rulebase_name { ruledef ruledef_name
 | group-of-ruledef gor_name } clear
        end
```

To delete the threshold value:

```
configure
        default threshold total-volume rulebase rulebase-name { ruledef
ruledef_name | group-of-ruledef gor_name }
        end
```

Notes:

- **default**: Deletes the specified threshold value.
- **total-volume**: Configures total volume amount threshold.
- **rulebase** *rulebase-name*: Configures rulebase for which threshold is monitored. For rulebase name, enter a string of size 1 to 63.
- **ruledef** *ruledef-name*: Configures ruledef for which threshold is monitored. For ruledef name, enter a string of size 1 to 63.
- **group-of-ruledef**: Configures a group-of-ruledef for which threshold is monitored.
- **threshold value for total-volume**: Enter an integer from 1 to 1000000000.
- **clear**: Configures the alarm clear threshold.

threshold poll total-volume interval

This new CLI command is added to configure the volume monitoring window duration for which to check the threshold.

This CLI is disabled by default.

To configure the threshold poll interval:

```
configure
        threshold poll total interval poll_interval
        end
```

To delete the threshold poll interval:

```
configure
        default threshold poll total interval poll_interval
        end
```

Notes:

- **default**: Configures this command with the default threshold setting. The default value is 15 minutes.
- **total-volume**: Configures total-volume threshold interval.
- **threshold poll total-volume interval** : Enter polling interval in second in the range of 300 to 14400 seconds.
- **default threshold poll total-volume**: Configures the default value. The supported default value supported is 15 minutes.

threshold monitoring total-volume

This new CLI command is added to enable or disable the threshold monitoring for the total volume.

This CLI is disabled by default.

To enable threshold monitoring for the total volume:

```
configure
        threshold monitoring total-volume
        end
```

To disable threshold monitoring for the total volume:

```
configure
        no threshold monitoring total-volume
        end
```

Notes:

- **no**: Disables the total-volume related threshold.
- **threshold monitoring total-volume** : Enables the total-volume related threshold.

Monitoring and Troubleshooting

This section provides information regarding show commands and/or their outputs in support of this feature.

Show Commands

This section lists all the show commands available to check the threshold configured and the trap output..

show snmp trap history

This command displays the following output:

```
Tue Jun 27 00:20:00 2017 Internal trap notification 1363 (TotalVolume) facility sessmgr
rulebase 'plan1' ruledef 'ip-all' threshold 200 measured value 520

Tue Jun 27 03:05:00 2017 Internal trap notification 1364 (TotalVolumeClear) facility sessmgr
 rulebase 'plan1' ruledef 'ip-all' threshold 1 measured value 0

Wed Jun 28 10:30:00 2017 Internal trap notification 1363 (TotalVolume) facility sessmgr
rulebase 'plan1' group-of-ruledef 'GOR' threshold 100 measured value 8053
```

```
Wed Jun 28 10:35:00 2017 Internal trap notification 1364 (TotalVolumeClear) facility sessmgr
 rulebase 'plan1' group-of-ruledef 'GOR' threshold 0 measured value 0
```

show threshold

This command displays the following output:

```
show threshold
Threshold operation model: ALARM
Configured thresholds:
Name:             total-volume
        Config Scope:     RuleBase[plan1]Ruledef[ip-all]
        Threshold:        200
        Clear Threshold:  0
Active thresholds:
Name:             total-volume
        Config Scope:     RuleBase[plan1]Ruledef[ip-all]
        Threshold:        200
        Clear Threshold:  0
        Poll Interval:    300Seconds
        Next Poll Time:   2017-Jun-27+00:15:00
Enabled threshold groups: (name, scope)
        total-volume           SYSTEM
Non-default poll intervals:
        total-volume                300Sec
No outstanding alarm
```