RLF Template Configuration Mode Commands

Rate Limiting Function (RLF) Template Configuration Mode is accessed from the Global Configuration Mode. This mode allows an operator to configure the RLF template that can be associated with Diameter and other applications for throttling and rate controlling of messages sent to external network interfaces.

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Important   Rate Limiting Function (RLF) is a license-controlled feature. A valid feature license must be installed prior to configuring this feature. Contact your Cisco account representative for more information.

Command Modes   Exec > Global Configuration > RLF Template Configuration

configure > rlf-template *rlf_template_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(cfg-rlf-template)#`

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Important   The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

delay-tolerance

Defines the maximum number of seconds a control plane signaling message can be queued before being processed. After exceeding this delay, the message is dropped.

Product	GGSN
	P-GW
	SaMOG
Privilege	Security Administrator, Administrator
Command Modes	Exec > Global Configuration > RLF Template Configuration
	configure > rlf-template *rlf_template_name*
	Entering the above command sequence results in the following prompt:
	`[`*context_name*`]`*host_name*`(cfg-rlf-template)#`
Syntax Description	```delay-tolerance``` *tolerance_value* ```[-noconfirm]``` ```default delay-tolerance```

default

Removes the configuration associated with the RLF template. Default value is 2.

tolerance_value

Specifies the maximum number of seconds a message can be queued in the RLF module. The message must be sent after expiry of "delay-tolerance" seconds.

tolerance_value must be an integer from 0 through 10. Default value is 2.

[-noconfirm]

Specifies that the command must execute without any prompts and confirmation from the user.

Usage Guidelines Use this command to define the maximum number of seconds a message can be queued in the RLF module before being processed. After exceeding this delay, the message is dropped.

Example

The following command sets the value of delay tolerance to 4 seconds:

```delay-tolerance 4```

do show

Executes all **show** commands while in Configuration mode.

Product	All
Privilege	Security Administrator, Administrator
Syntax Description	`do show`

Usage Guidelines Use this command to run all Exec mode **show** commands while in Configuration mode. It is not necessary to exit the Config mode to run a **show** command.

The pipe character | is only available if the command is valid in the Exec mode.

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Caution There are some Exec mode **show** commands which are too resource intensive to run from Config mode. These include: **do show support collection**, **do show support details**, **do show support record** and **do show support summary**. If there is a restriction on a specific **show** command, the following error message is displayed:

```
Failure: Cannot execute 'do show support' command from Config mode.
```

end

Exits the current configuration mode and returns to the Exec mode.

Product	All
Privilege	Security Administrator, Administrator
Syntax Description	`end`
Usage Guidelines	Use this command to return to the Exec mode.

exit

Exits the current mode and returns to the parent configuration mode.

Product

All

Privilege

Security Administrator, Administrator

Syntax Description

`exit`

Usage Guidelines

Use this command to return to the parent configuration mode.

msg-rate

Sets the maximum number of messages that can be processed per second.

Product	GGSN
	P-GW
	SaMOG
Privilege	Security Administrator, Administrator
Command Modes	Exec > Global Configuration > RLF Template Configuration

configure > rlf-template *rlf_template_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(cfg-rlf-template)#`

Syntax Description   **msg-rate** *tps_value* **burst-size** *size* **[-noconfirm]**

tps_value

Specifies the number of messages that can be processed per second. This is the maximum number of allowed transactions per second (TPS) for an external interface.

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Important   The TPS value (configured per external interface) is at a chassis-level and is distributed appropriately to all session managers, AAA manager, Diamproxy, or any other applications that use RLF. RLF employs the Token Bucket Algorithm to achieve the rate limiting.

tps_value must be an integer from 1 through 100000.

burst_size *size*

Defines the maximum number of messages (burst) that can be sent out together at any instant of time. If this setting is not configured, the default value is the current message rate.

Burst size is used to derive the shaping interval in such a way that it splits the 1000 ms in N slots, where N can be 1, 2, 4, 5, 10, 20, 50, and 100.

size must be an integer from 1 through 100000.

[-noconfirm]

Specifies that the command must execute without any prompts and confirmation from the user.

Usage Guidelines   Use this command to define the number of messages that can be processed per second. This is the maximum number of allowed transactions per second (TPS) for an external interface. The RLF ensures that the maximum configured TPS rate is not exceeded on the interface.

If burst-size is not configured. the messages are sent without delay when they arrive in RLF. For example, if the CLI command **msg-rate 1000 burst-size 100** is configured, then all 1,000 messages are sent to an external

interface in bursts of 100 messages (burst-size). If the burst size is not configured, then all 1,000 messages are sent as they arrive in RLF (regardless of TPS).

Example

The following command sets the value of message rate to 20:

`msg-rate 20`

threshold

Configures the threshold for rate-limiting the outgoing messages.

Product	GGSN
	P-GW
	SaMOG
Privilege	Security Administrator, Administrator
Command Modes	Exec > Global Configuration > RLF Template Configuration

configure > rlf-template *rlf_template_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(cfg-rlf-template)#`

Syntax Description
```
threshold { lower lowerThreshold_value | upper upperThreshold_value } [ -noconfirm
]
default threshold
```

default

Returns the command to its default settings.

lower *lowerThreshold_value*

This threshold indicates that the application has message-rate control enabled.

Default is 30%. If the number of outstanding messages in the RLF queue drops below 30% of msg-rate, RLF will transition to READY state.

upper *upperThreshold_value*

This threshold indicates that action will be taken when the message-rate reaches the maximum limit.

Default is 80%. If the number of outstanding messages in the RLF queue exceeds 80% of msg-rate, RLF will transition to OVER_THRESHOLD state.

Usage Guidelines
Use this command to configure the desired threshold value for rate limiting the outgoing messages.

The configurable threshold value of TPS for an interface is used to notify applications of corrective actions when the threshold criteria is met.

Example

The following command configures the upper threshold to 80 and the lower threshold to 60 for throttling and rate control:

```
threshold upper 80 lower 60
```