Diameter Message Priority and Overload Handling Protection

Feature Summary and Revision History

Summary Data

Table 1: Summary Data

Applicable Product(s) or Functional Area	PCF
Applicable Platform(s)	SMI
Feature Default Setting	Enabled – Configuration required to disable
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	2023.03.0

Feature Description

The list of support options for PCF Diameter message priority and overload handling protection is as follows:

- Overload Handling Mechanism – End Points

- Engine Inbound Message Handling

- Threshold Monitoring

- Incoming Message Handling Rules

- Inbound WPS Rx Message Prioritization

- DRMP Message Prioritization

Overload Handling Mechanism – End Points:

In Ops center, the throttling of messages gets configured for both the endpoints and the messages gets dropped or returned busy based on the discard behaviour configured.

Engine Inbound Message Handling:

In the Policy Builder, the SLAs, Queue Size, and Default Instance Rate Limit of messages get specified for both Diameter and REST messages. Based on the set discard behaviour, the messages are either discarded or returned as busy.

Threshold Monitoring:

For the message types (commands) set up in the operations center, PCF Diameter End Point (EP) improves the quality to support the Message threshold per endpoint. If the inbound outstanding message count exceeds the threshold limit, then the message gets discarded. The Diameter EP doesn't process that message to Engine.

The threshold check gets implemented for Diameter EP. This feature comes with ability to enable or disable. The rules get defined in the Ops center for threshold monitoring. The Diameter EP is verified to determine the maximum number of messages still pending for all engines, and any excess messages must be dropped or rejected.

Incoming Message Handling Rules:

For Diameter Rx, Gx, and REST messages, the message handling rules are set, and priority handling is done on the engine side.

- Message Scoring for Backpressure Queue

- Per Instance TPS check and reject/ drop messages.

Inbound WPS Rx Message Prioritization:

The Rx Messages gets prioritized based on MPS Identifier and Reservation-Priority.

DRMP Message Prioritization:

The Diameter Messages gets prioritized based on DRMP Flag and the Priority.

How It Works

This section describes how Diameter Message Priority and Overload Handling Protection feature works.

Feature configuration

This section describes how to configure the Message Priority and Overload Handling.

The Diameter EP performs the discard action based on the configuration configured for the message in the Ops center. There are two types of discard action:

- DROP and
- REJECT.

To configure the Message (Command), discard action and threshold count, use the following configuration:

```
config
  advance-tuning overload-control diameter global action
threshold-reject-code 3004
  advance-tuning overload-control diameter global action threshold-action
 CCR
  discard-action REJECT
  threshold-count 2000
  advance-tuning overload-control diameter global action threshold-action
 AAR
  discard-action DROP
  threshold-count 3500
  advance-tuning overload-control diameter global action threshold-action
 STR
  discard-action DROP
  threshold-count 3500
    end
```

Note   The default value for discard-action is REJECT