Embed IMSI into Session Id

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Feature Summary and Revision History

Summary Data

Applicable Product(s) or Functional Area	• GGSN • P-GW • SAEGW • S-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* • *GGSN Administration Guide* • *P-GW Administration Guide* • *SAEGW Administration Guide* • *S-GW Administration Guide*

Revision History

Revision Details	Release
First introduced.	21.3

Feature Description

For troubleshooting and investigating network issues related to the Diameter interface, it is important to filter the subscriber or UE specific Diameter traffic. Any traffic associated with a particular IMSI can be easily filtered, even without knowing the Diameter session ID, if the IMSI information is embedded into the Diameter Session ID AVP. This feature allows the operator to filter the subscriber or UE specific Diameter traffic.

This feature introduces a new CLI command **session-id include imsi** under the **diameter endpoint configuration** mode to embed IMSI into Diameter session ID AVP over the Gx, Gy, and Gz (Rf) interface.

Important This feature is license controlled. Contact your Cisco account representative for information on how to obtain a license.

How It Works

A new CLI command **session-id include imsi** has been added under the **diameter endpoint configuration** mode to enable/disable inclusion of IMSI in Session-Id AVP for all Diameter sessions associated with that Diameter endpoint. Operators can enable only the required Diameter endpoints and control the inclusion of IMSI in the Session-ID AVP. IMSI information is included in the Diameter Session-ID AVP over the Gx, Gy, and Gz (Rf) interface, if the **session-id include imsi** is enabled on respective Diameter endpoints.

For emergency call with "only IMEI", IMSI information is not available for that emergency PDN. Hence, this IMSI information is not included in Diameter Session-ID at Gx, Gy, and Gz interface, when **session-id include imsi** is enabled. Configuring **session-id include imsi** impacts only new PDN connection and does not have any impact on existing PDN connection behavior (Gx, Gy, and Gz (Rf)) interface. For example, if the CLI command to include IMSI is enabled for the Gy Diameter endpoint after PDN creation. If a new dedicated bearer is created after this configuration change, then in this case Gy session established for a new dedicated bearer is not included IMSI in Gy Diameter session ID.

There is no impact of session manager recovery/ICSR on the session-ID AVP. Session-ID associated with Gx, Gy, and Gz (Rf) session is recovered transparently (which is irrespective of latest endpoint configuration). New sessions come up with session IDs as per the configuration on the newly active chassis.

Limitations

Following are the known limitations of this feature:

- Assuming IMSI information as sensitive information, operator must consider security aspects before enabling this CLI option.

- For an emergency call with "Only IMEI", IMSI information is not available for the emergency PDN, hence it is not included in the diameter Session-ID at Gx, Gy, and Gz (Rf) interface.
- During ICSR upgrade scenario, it is assumed that the new CLI option must be enabled only when the upgraded chassis is in stable state and there exists no chances of ICSR downgrade.
- If new CLI is enabled in the newer version of chassis, ICSR Downgrade is not recommended.
- As new CLI option is not available in old software versions, hence ICSR downgrade is not recommended. Performing ICSR downgrade should have the following impact on the diameter sessions, which have IMSI, included as part of Session-ID.
  - Gx and Gy: Existing diameter session (Gx, Gy) should be downgraded with old format of Session-Id. In that case, both P-GW and PCRF are out of sync leading to hanging session at P-GW or/and PCRF. Any communication from PCRF (RAR)/P-GW (CCR-U) can lead to stale session deletion.
  - Gz (Rf): However, Rf sessions should be recovered properly and any Rf signaling is sent out to Rf servers properly but responses cannot be processed as diamproxy cannot parse the new format session id which again puts Rf sessions into stale state until purged.

Configuring Diameter Accounting Interim Interval

The following CLI command has been added under the **diameter endpoint** configuration mode to include IMSI in Diameter session-ID per Diameter endpoint at Gx, Gy, and Gz (Rf). Configuration changes will be applicable only to new Sessions at Gx, Gy and Rf. Configuration changes will not have any impact on existing sessions behavior at Gx, Gy, and Rf. For Gy, multiple Diameter sessions can be initiated per subscriber and the session ID format setting will bind to the subscriber. The setting will be taken to effect when the first Diameter session is established and following Gy sub sessions will keep using the session ID format used in first session.

```
configure
    context context_name
       diameter endpoint endpoint_name
           [no] session-id include imsi
           end
```

Notes:

- **session-id:** Describes Diameter Session-ID format
- **include:** Includes configured information in Diameter Session-ID
- **imsi:** Includes International Mobile Subscriber Identification (IMSI) in Diameter Session-ID
- **no:** Disables this feature, that is, IMSI is not included in the Diameter Session-ID, which is the default behavior.
- By default, CLI is disabled, hence IMSI will not be populated in Diameter Session-ID.

Monitoring and Troubleshooting

The following sections describe commands available to monitor the feature.

Show Commands and Outputs

This section provides information regarding show commands and their outputs in support of the feature.

show configuration

The output of the above command is modified to display the following new field depending on whether the CLI is enabled or disabled:

- session-id include imsi
- no session-id include imsi

show configuration [verbose]

The output of the above command is modified to display the following new field depending on whether the CLI is enabled or disabled:

- session-id include imsi
- no session-id include imsi