



# IPSG 4G Support

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## Feature Summary and Revision History

### Summary Data

Applicable Product(s) or Functional Area	IPSG
Applicable Platform(s)	All
Feature Default	Enabled - Always-on (IPSG Licence Required)
Related Changes in This Release	Not Applicable
Related Documentation	<i>IPSG Administration Guide</i>

### Revision History



#### Important

Revision history details are not provided for features introduced before releases 21.2 and N5.5.

Revision Details	Release
IPSG now supports operating in the 4G RAT environment, which enables IPSG to act as an inline service agent in the core 4G network.	21.3
First introduced.	Pre 21.2

## Feature Description

Pre StarOS Release 21.3, IPSG supported only for 3G RAT type. From StarOS Release 21.3, 4G RAT Type and EPS QoS is supported. Support has been extended for IPSG to operate in the 4G RAT environment which enables IPSG to act as an inline service agent in the core 4G network.

**Previous Behavior:** Earlier, IPSG supported only 3G RAT type and not 4G RAT type.

**New Behavior:** With StarOS Release 21.3, IPSG supports 4G RAT type. IPSG also supports ULI with TAI+ECGI and TAI, EPS QoS Profile, and generates P-GW CDRs with 4G RAT type.

**Customer Impact:** 4G calls on IPSG are supported.

### EPS QoS Profile Handling

EPS QoS profile handling is done in the following way:

- The QoS profile received from PCRF is given priority as compared to the QoS profile received from the P-GW.
- AMBRs received from PCRF are given priority when there is bandwidth limitation.
- If the Rule Level AMBRs are present, then first, the rule level bandwidth limiting is enforced and then, the APN level AMBR is enforced only for the non-GBR QCI values.
- In the accounting start message, if the QoS profile is received with GBR QCI, then the call is dropped on the IPSG. It is assumed that the QoS profile that is being received on IPSG is of default-bearer on the P-GW.
- If IPSG receives an interim update for a subscriber with a GBR QCI value, then the QCI profile is ignored and no CCR-U is sent to the PCRF.
- If the CLI command **radius accounting interim create-new-call** is configured under the IPSG service and a QoS profile is received with GBR QCI as part of the interim RADIUS update message, then the call is dropped on the IPSG. It is assumed that the QoS profile that is being received on IPSG is of the default bearer on the P-GW.
- To see the QoS profile and QCI information in the CCR-U, you must enable the trigger for the QoS change and default bearer QoS change.



#### Important

As the RAT type is EUTRAN, you must pick the correct P-GW specific dictionary in order to generate the P-GW records.

## How It Works

This section lists the working of IPSG:

- Support for the EUTRAN RAT type on IPSG creates an EPS bearer.
- The ULI information includes TAI+ECGI, TAI, and ECGI.

- This ULI information is populated to the eGCDRs and the CDRs.
- The EPS QoS information received as part of the RADIUS message is also parsed.
- The bearer type (EPS), RAT Type (eUTRAN, ULI (TAI + ECGI + TAI), and EPS QoS Information that is received as part of RADIUS message is conveyed to the Gx.
- When an interim update is received from the P-GW, IPSG handles this interim update. If the PCRF is registered as ULI change or QoS change, CCR-U is sent to the PCRF with the received information.

## Limitations and Restrictions

Following are the limitations of this feature:

- Handoff scenarios are not supported.
- Gy interface is only supported for 4G.
- CoA and disconnect messages handling is not supported.
- IPSG session replacement with EUTRAN is not supported.
- Tethering detection on IPSG is not supported.

