

## **Clear Subscriber Request**

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# **Feature Summary and Revision History**

#### **Summary Data**

**Table 1: Summary Data** 

Applicable Product(s) or Functional Area	cnSGW-C
Applicable Platform(s)	SMI
Feature Default Setting	Enabled - Always-on
Related Documentation	Not Applicable

## **Revision History**

**Table 2: Revision History** 

Revision Details	Release
First introduced.	2020.04

# **Feature Description**

cnSGW-C handles the Clear Subscriber or the PDN Request from the Ops Center.

The Clear Subscriber Request initiates the administrative clearing of subscribers for a specific IMSI or all IMSIs using the local purge and remote signaling procedures.

Based on the OAM query, the cnSGW-C receives the Subscriber Notification message at REST-EP and triggers the Clear Subscriber Request message towards the SGW-Service.

#### **Standards Compliance**

This feature complies with the following standards specifications:

- 3GPP TS 23.401 "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access"
- 3GPP TS 23.214 "Architecture enhancements for control and user plane separation of EPC nodes"
- 3GPP TS 29.274 "3GPP Evolved Packet System (EPS); Evolved General Packet Radio Service (GPRS) Tunnelling Protocol for Control plane (GTPv2-C); Stage 3"
- 3GPP TS 29.244 "Interface between the Control Plane and the User Plane nodes"

#### **How it Works**

This section describes how this feature works.

When the cnSGW-C receives the admin-initiated Deletion Request with the purge option as "true", it initiates Sx signaling towards User Plane and exchanges following messages:

- 1. SGW sends a Sx Session Deletion Request to User Plane.
- 2. User Plane sends a Sx Session Deletion Response SGW.

When cnSGW-C receives the Deletion Request with the purge option as "false", it performs the Sx signaling towards User Plane and GTP-C signaling towards MME and PGW. The cnSGW-C exchanges the following messages with User Plane, MME, and PGW:

- 1. SGW sends the Sx Session Modification Request to the User Plane.
- 2. User Plane sends the Sx Session Modification Response to SGW.
- **3.** SGW sends the Delete Bearer Request to MME.
- **4.** SGW sends the Delete Session Request to PGW.
- **5.** MME sends the Delete Bearer Response to SGW.
- 6. PGW sends the Delete Session Response to SGW.
- 7. SGW sends the Sx Session Deletion Request to User Plane.
- **8.** User Plane sends the Sx Session Deletion Response to SGW.

cnSGW-C sends the Delete Session Request towards PGW and Delete Bearer Request towards MME. After receiving the response from both remote peers, the cnSGW-C sends Sx Session Deletion Request towards User Plane to clear the sessions.

### **Supported Clear Command**

cnSGW-C supports the following clear commands:

**Table 3: Supported Clear Commands** 

Supported Clear Command Options	GTP-C Signalling (Towards MME/PGW)	Sx Signalling (Towards UP)	Impact (Subscriber/PDN)
clear sub all	Yes	Yes	All subscribers
clear sub all purge false			
clear sub all purge true	No	Yes	All subscribers
<ul> <li>clear sub namespace sgw imsi         <i>imsi_val</i></li> <li>clear sub namespace sgw         imsi<i>imsi_val</i>purge false</li> </ul>	Yes	Yes	Subscriber with IMSI as imsi_val
clear sub namespace sgw imsiimsi_valpurge true	No	Yes	Subscriber with IMSI as imsi_val
clear sub namespace sgw imsiimsi_valebiebi_value	Yes	Yes	PDN with IMSI as imsi_val and default ebi as ebi_value

### **Call Flows**

This section describes the key call flows for this feature.

#### **Clear PDN Call Flow**

This section describes the Clear PDN call flow.

Figure 1: Clear PDN Call Flow

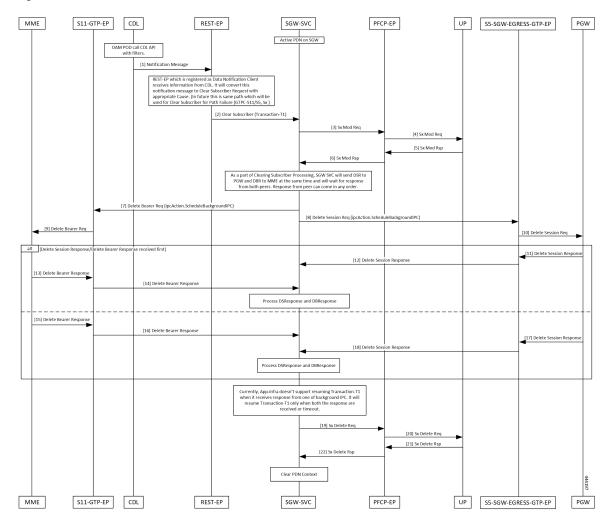


Table 4: Clear PDN Call Flow Description

Step	Description
1	The OAM pod calls the CDL API with the filters.
	CDL sends the notification message to REST EP.
2	The REST-EP converts this message to Clear Subscriber Request with a cause and sends Clear Subscriber to the SGW-Service pod.
	Transaction-T1 started.
3-6	The SGW-Service pod sends Sx Modification Request to UPF through PFCP-EP.
	The SGW-Service pod receives Sx Modification Response from UPF through PFCP-EP.
7	The SGW-Service pod sends the Delete Bearer Request to the S11-GTP-EP.
8	The SGW-Service pod sends the Delete Session Request to the S5-SGW-EGRESS-GTP-EP.

Step	Description		
9	The S11-GTP-EP sends the Delete Bearer Request to MME.		
10-12	The S5-SGW-EGRESS-GTP-EP sends the Delete Session Request to PGW.		
	The PGW sends the Delete Session Response to S5-SGW-EGRESS-GTP-EP.		
	The S5-SGW-EGRESS-GTP-EP forwards this request to the SGW-Service pod.		
13-16	MME sends the Delete Bearer Response to S11-GTP-EP.		
	S11-GTP-EP forwards to the SGW-Service pod.		
17, 18	PGW sends the Delete Session Response to S5-SGW-EGRESS-GTP-EP.		
	S5-SGW-EGRESS-GTP-EP forwards this request to the SGW-Service pod.		
19-22	The SGW-Service pod sends the Sx Delete Request to PFCP-EP.		
	The PFCP-EP forwards the request to UPF.		
	UPF sends the Sx Delete Response to PFCP-EP, which it forwards it to the SGW-Service pod.		

**Clear PDN Call Flow**