



# Delete Bearer and Delete Session Request

- [Feature Summary and Revision History, on page 1](#)
- [Feature Description, on page 1](#)
- [How it Works, on page 2](#)

## 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

This feature supports the following:

- Deletion of Session Request from the MME
- Deletion of Bearer Request from the PGW

This deletion helps in clearing the PDN connection at the SGW, which in turn clears resources at the cnSGW-C, and releases all the relevant TEIDs.

## Delete from MME

1. cnSGW-C sends the Sx Modification Request to the User Plane (UP) to mark the forwarding action as DROP so that all uplink or downlink packets are dropped at the SGW-U.
2. cnSGW-C sends the Delete Session Request to the PGW/SMF.
3. After SGW receives the Delete Session Response from the PGW/SMF, cnSGW-C sends the Sx Terminate Request to the UP to clear the session.
4. After UP confirms the deletion of the SGW-U session, cnSGW-C releases the allocated ID by sending request to the Node Manager, and the Delete Session Response to the MME.

## Delete from PGW

1. cnSGW-C sends the Sx Modification Request to the UP to mark the forwarding action as DROP so that all the uplink and downlink packets are dropped at the SGW-U.
2. cnSGW-C sends the Delete Bearer Request to the MME.
3. After SGW receives the Delete Bearer Response from the MME, the cnSGW-C sends the Sx Terminate Request to the UP to clear the session.
4. After UP confirms the deletion of the SGW-U session, cnSGW-C releases the allocated ID by sending request to the Node Manager, and the Delete Bearer Response to the PGW.

## Standard Compliance

The Delete Bearer and Delete Session Request Support feature complies with the following standards:

- 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.

## Call Flows

This section describes the key call flows for this feature.

Figure 1: Delete from MME Call Flow

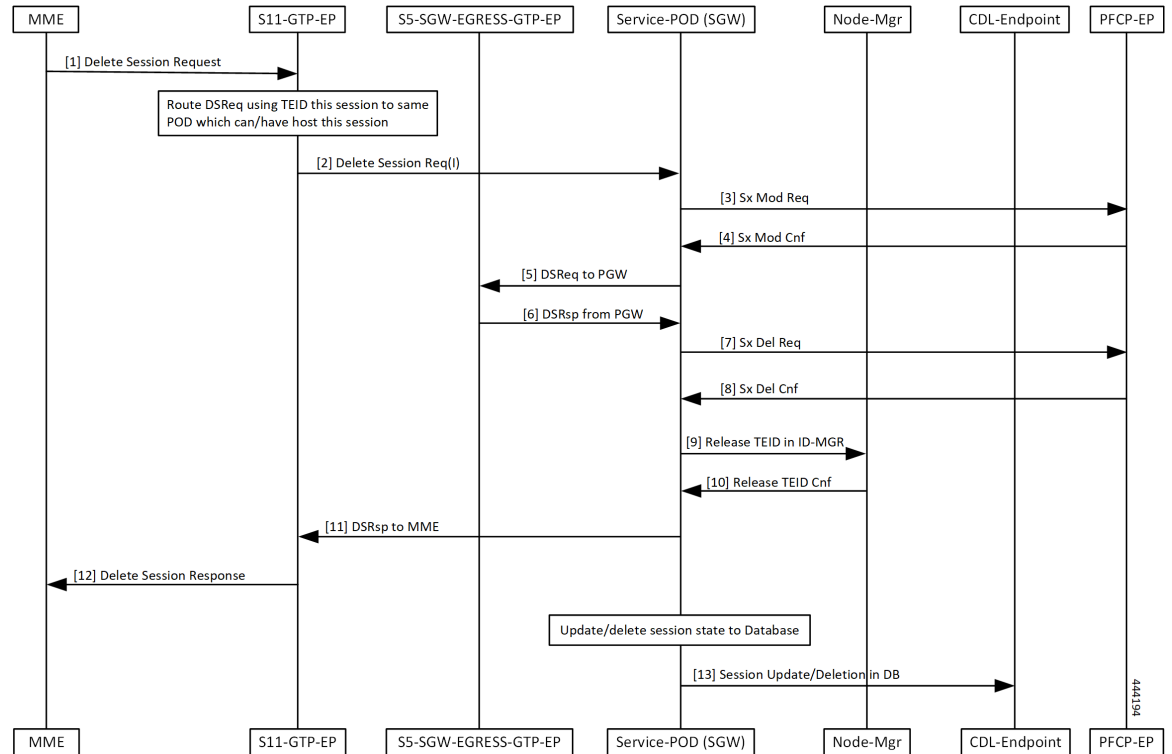


Table 3: Delete from MME Call Flow Description

| Step | Description  |
|------|--|
| 1    | The MME sends the Delete Session Request to the S11-GTP-EP.  |
| 2    | The S11-GTP-EP routes this message with TEID value to the Service-POD (SGW) which handles this session.  |
| 3    | The Service-POD (SGW) sends the Sx Modification Request to PFCP-EP.                                      |
| 4    | The PFCP-EP sends the Sx Modification Confirmation to the Service-POD (SGW).                             |
| 5    | The Service-POD (SGW) sends the Delete Session Request to the PGW through the S5-SGW-EGRESS-GTP-EP.      |
| 6    | The Service-POD (SGW) receives the Delete Session Request from the PGW through the S5-SGW-EGRESS-GTP-EP. |
| 7    | The Service-POD (SGW) sends the Sx Delete Request to PFCP-EP.  |
| 8    | The Service-POD (SGW) receives the Sx Delete Confirmation from PFCP-EP.                                  |
| 9    | The Service-POD (SGW) sends Release TEID in ID-MGR to Node-Mgr.  |
| 10   | The Service-POD (SGW) receives the Release TEID Confirmation from the Node-Mgr.                          |

| Step | Description  |
|------|--|
| 11   | The Service-POD (SGW) sends the Delete Session Response to S11-GTP-EP.                   |
| 12   | The S11-GTP-EP sends the Delete Session Response to the MME.                             |
| 13   | The Service-POD (SGW) sends the Session Update or Delete in database message to the CDL. |

Figure 2: Delete from PGW Call Flow

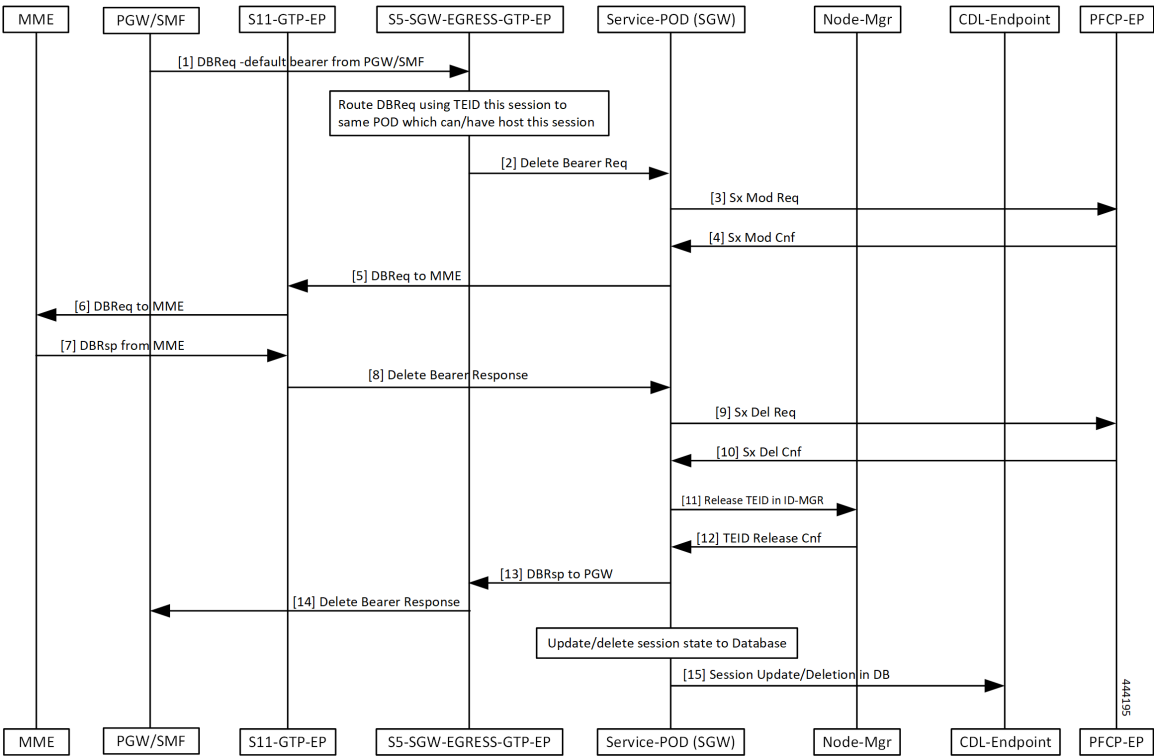


Table 4: Delete from PGW Call Flow Description

| Step | Description   |
|------|---|
| 1    | The PGW/SMF sends the Delete Bearer Request to the S5-SGW-EGRESS-GTP-EP.  |
| 2    | The S5-SGW-EGRESS-GTP-EP performs routing of this message with TEID value to the same pod that has hosted this session.<br>The S5-SGW-EGRESS-GTP-EP sends the Delete Bearer Request to the Service-POD (SGW). |
| 3    | The Service-POD (SGW) sends the Sx Modification Request to PFCP-EP and receives Sx Mod Cnf from it.   |
| 4    | The PFCP-EP sends the Sx Modification Confirmation to the Service-POD (SGW).  |
| 5    | The Service-POD (SGW) sends the Delete Bearer Request to the MME through the S11-GTP-EP.  |
| 6    | The S11-GTP-EP forwards the Delete Bearer Request to the MME.   |

| Step | Description  |
|------|--|
| 7    | The MME sends the Delete Bearer Response to the S11-GTP-EP.                              |
| 8    | The S11-GTP-EP forwards the Delete Bearer Response to the Service-POD (SGW).             |
| 9    | The Service-POD (SGW) sends the Sx Delete Request to the PFCP-EP.                        |
| 10   | The Service-POD (SGW) receives the Sx Delete Confirmation from the PFCP-EP.              |
| 11   | The Service-POD (SGW) sends the Release TEID in ID-MGR to the Node-Mgr.                  |
| 12   | The Service-POD (SGW) receives the Release TEID Confirmation from the Node-Mgr.          |
| 13   | The S11-GTP-EP sends the Delete Bearer Response to the PGW through S5-SGW-EGRESS-GTP-EP. |
| 14   | The S5-SGW-EGRESS-GTP-EP sends the Delete Bearer Response to the PGW/SMF.                |
| 15   | The Service-POD (SGW) sends the Session Update or Delete in database message to the CDL. |

