



# Access Bearer Release Support

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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. | 2020.03.0 |

## Feature Description

cnSGW-C supports the handling of the Release Access Bearer (RAB) request procedure. It's a UE-level message. In multiple PDN scenarios, the MME sends only one RAB message, which applies to all the PDNs. cnSGW-C brings all the bearers of all the PDNs to the IDLE state.

# How it Works

This section describes how this feature works.

cnSGW-C sends the Sx Modification Request message per PDN to the corresponding User Plane. After receiving the Sx Modification response message from all user planes (for all PDNs), cnSGW-C sends the response message to MME.

cnSGW-C updates the state as IDLE for all the bearers in CDL.

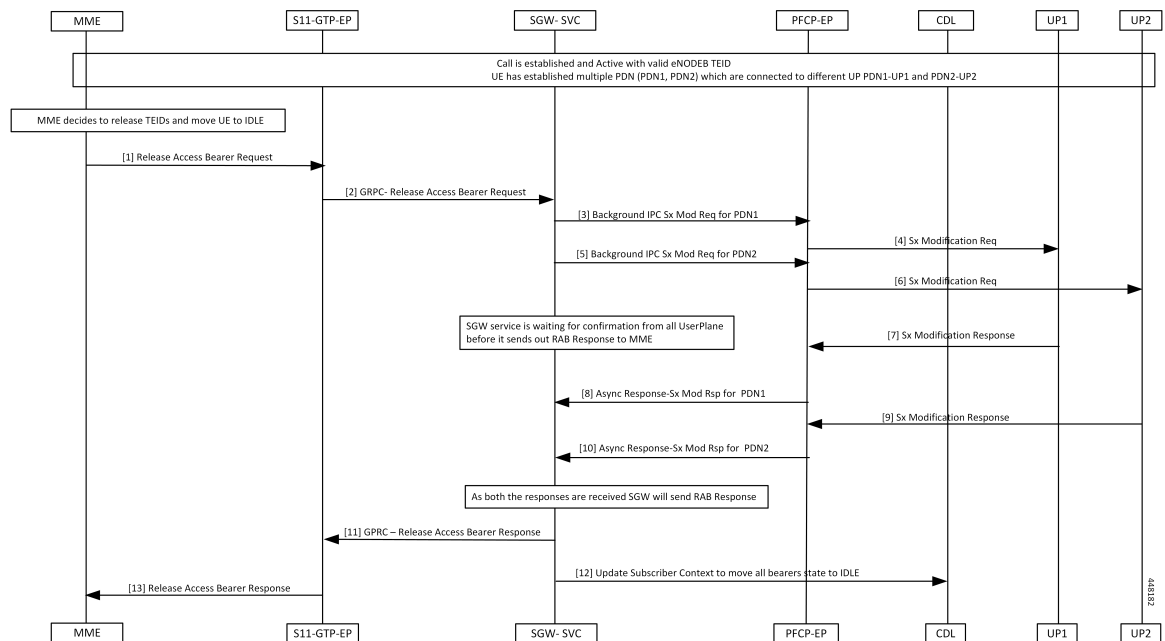
## Call Flows

This section describes the key call flow for the Access Bearer Release Support feature.

### Release Access Bearer (Active to IDLE Transaction) Call Flow

This section describes the Release Access Bearer call flow.

**Figure 1: Release Access Bearer (Active to IDLE Transaction) Call Flow**



**Table 3: Release Access Bearer (Active to IDLE Transaction) Call Flow Description**

| Step | Description                                                                                         |
|------|-----------------------------------------------------------------------------------------------------|
| 1    | MME sends Release Access Bearer (RAB) request to S11-GTP-EP to release all S1-U bearers for the UE. |

| Step | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2    | <p>S11-GTP EP decodes the received UDP message and converts it into gRPC. The converted gRPC message then sent to the SGW-Service pod, using the TEID value, which can handle this UE session.</p> <p>SGW-Service pod performs the following activities:</p> <ul style="list-style-type: none"> <li>• Finds out Subscriber Context using local ingress TEID</li> <li>• Validates the RAB request content</li> <li>• Moves UE to the IDLE state</li> <li>• Builds the Sx Modify request message with the downlink apply action as DROP, to drop all downlink packets at SGW-U</li> </ul> |
| 3    | SGW-Service pod sends the Sx Mod request message using the background IPC async call for PDN1 to PFCP-EP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 4    | <p>PFCP-EP forwards the Sx Modify Request (PDN1) message to UPF1 through the UDP proxy.</p> <p>UPF1 processes the Sx Modify Request (PDN1) message.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 5    | <p>SGW-Service pod sends the Sx Modify Request message using the background IPC async call for PDN2.</p> <p>PFCP-EP forwards the Sx Modify Request (PDN2) message to UPF2 through the UDP proxy.</p>                                                                                                                                                                                                                                                                                                                                                                                    |
| 6    | UPF2 processes the Sx Modify Request (PDN2) message.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7    | UPF1 sends the Sx Modify response (PDN1) message to PFCP-EP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8    | <p>PFCP-EP sends the Async Sx Modify response message to cnSGW-C service for PDN1.</p> <p>SGW-Service pod waits for the PDN2 Sx Modify response message.</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 9    | UPF2 sends the Sx Modify response (PDN2) message to PFCP-EP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10   | PFCP-EP sends the Async Sx Modify response message to cnSGW-C service for PDN2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 11   | <p>The SGW-Service pod sends the following, after receiving the PDN (PDN1, PDN2) responses:</p> <ul style="list-style-type: none"> <li>• RAB response message to S11-GTP-EP using the gRPC protocol.</li> <li>• Updates to the CDL module</li> </ul>                                                                                                                                                                                                                                                                                                                                    |
| 12   | <p>SGW-Service pod sends Update Subscriber Context state to CDL, which moves all the bearers to the IDLE state.</p> <p>CDL module updates the information in the database.</p>                                                                                                                                                                                                                                                                                                                                                                                                          |
| 13   | <p>S11-GTP-EP forwards the RAB response message to MME.</p> <p>MME process the RAB response message.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

