

Session and Service Continuity Mode

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Feature Summary and Revision History

Summary Data

Table 1: Summary Data

Applicable Product(s) or Functional Area	SMF
Applicable Platform(s)	SMI
Feature Default Setting	Enabled – Always-on
Related Changes in this Release	Not Applicable
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	Pre-2020.02.0

Feature Description

The Session and Service Continuity (SSC) support in 5G system architecture addresses the various continuity requirements of different applications and services for the User Equipment (UE). The 5G system supports

different SSC modes. The SSC mode associated with a PDU session does not change during the lifespan of a PDU session. The SSC feature supports the following three modes:

- SSC mode 1—The network preserves the connectivity service provided to the UE. For the PDU session of IPv4 or IPv6 or IPv4v6 type, the IP address is preserved.
- SSC mode 2—The network may release the connectivity service delivered to the UE and also release the corresponding PDU sessions. For IPv4 or IPv6 or IPv4v6 type, the release of the PDU session induces the release of IP addresses allocated to the UE.
- SSC mode 3—Changes to the user plane can be visible to the UE while the network ensures that the UE suffers no loss of connectivity. A connection through new PDU session anchor point is established before the previous connection is terminated for better service continuity. For IPv4 or IPv6 or IPv4v6 type, the IP address is not preserved in this mode when the PDU session anchor changes.

SSC Mode Selection

The SSC mode selection policy determines the type of mode associated with an application or group of applications for the UE. As part of the subscription information from UDM, the SMF receives the list of supported SSC modes and the default SSC mode per DNN and per S-NSSAI.

To select the SSC mode, when UE sends SSC mode in PDU Session Establishment Request, the allowed SSC mode is determined by checking against the subscriber data and local SMF configuration.

Important SMF supports only SSC mode-1.

Priority for Choosing SSC Mode

The priority levels for choosing SSC mode are:

- Priority #1—Subscriber data from UDM has the highest priority. UDM sends DefaultSscMode and AllowedSscMode.
- Priority #2—Local SSC mode configuration data present in DNN profile contains ssc-mode and allowed-ssc-mode.

SSC Mode Selection Method

The SSC mode supports the following selection methods:

- The SMF verifies if UE sent SSC mode is part of either default SSC mode or allowed SSC mode in order of priority. If it is found, PDU Establishment procedure continues. Otherwise, PDU Session Establishment Reject message will be sent to the UE with allowed SSC modes in reject message.
- If the SMF does not receive SSC mode from the UE, then default SSC mode in order of priority is chosen and used to establish the PDU session.

When UE requests SSC mode-2 or mode-3, if the UE's subscription (in order of priority: UDM or Local configuration on SMF) allows SSC mode-1 along with mode-2 or mode-3, then SMF sends PDU Session Establishment Reject with 5GSM cause 68 (Not supported SSC mode) and Allowed SSC mode as 01. This

method allows the UE to retry with SSC mode-1. As per 3GPP TS 24.501, the 5GSM cause 68 is sent when the requested SSC mode is not supported by the subscription.

To honor PDU Session Establishment, the SMF expects SSC mode either through UDM subscription or local configuration. If SMF does not have SSC mode as part of UDM subscription or local configuration, the SMF rejects PDU Session Establishment with 5GSM cause 31 (Request rejected and unspecified).

Configuring SSC Mode

To configure the Session and Service Continuity Mode parameters in the DNN profile, use the following sample configuration:

```
config
   profile dnn dnn_name
      ssc-mode sscmode_value [ allowed allowed_sscmode_value ]
      exit
```

NOTES:

- **profile dnn** *dnn_name*: Enter the DNN profile configuration mode.
- **ssc-mode** *sscmode_value* **[allowed** *allowed_sscmode_value* **]**: Configure the SSC mode parameters.
  - **ssc-mode** *sscmode_value*: Specify the default SSC mode. *sscmode_value* must be an integer in the range of 1–3.

    The SMF supports only SSC mode-1.
  - **allowed** *allowed_sscmode_value*: Specify the allowed SSC modes. Up to two modes can be configured in addition to the default SSC mode. *allowed_sscmode_value* must be an integer in the range of 1–3.

    If the UEs are sent with SSC mode values defined under **allowed** command, then these values are supported along with the default SSC mode supported for the DNN profile.
- **no ssc-mode**: Specify this command to remove the SSC mode from the DNN profile.
- When UE requests SSC mode-2 or mode-3, if the UE's subscription (in order of priority: UDM or Local configuration on SMF) allows SSC mode-1 along with mode-2 or mode-3, then SMF sends PDU Session Establishment Reject with 5GSM cause 68 (Not supported SSC mode) and Allowed SSC mode as 01. This method allows the UE to retry with SSC mode-1. As per 3GPP TS 24.501, the 5GSM cause 68 is sent when the requested SSC mode is not supported by the subscription.

  To honor PDU Session Establishment, the SMF expects SSC mode either through UDM subscription or local configuration. If SMF does not have SSC mode as part of UDM subscription or local configuration, the SMF rejects PDU Session Establishment with 5GSM cause 31 (Request rejected and unspecified).