



User Plane Selection based on TAC Range

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Revision History



Note Revision history details are not provided for features introduced before release 21.24.

Revision Details	Release
First introduced	Pre 21.24

Feature Description

With this feature, User Plane group can be selected based on Access Point Name (APN). The ability to configure Tracking Area Code (TAC) range, in rule combinations in virtual APN selection, helps in giving more flexible network design for location-based User Plane selection for edge computing and other services.

How It Works

In non-CUPS architecture, Virtual APN selection is based on the following parameters:

- Subscriber IP
- Access-gw-address
- Bearer-access
- cc-behavior
- cc-profile

- domain
- mcc
- msisdn-range
- pdp-type
- rat-type
- roaming-mode
- serv-gw-plmnid

In CUPS architecture, Virtual APN selection is based on Tracking Area Code range with other options, such as cc-profile or mcc/mnc.

To support this feature:

- A new CLI keyword is introduced to accommodate new parameter.
- During call processing, incoming tracking area code is compared with the configured tracking area code range to determine the Virtual APN.

The Tracking Area Code based Virtual APN selection:

- Supports at least 30 tracking-area-code-range configured for Virtual APN.
- Supports overlapping ranges (subset or superset). Duplicate of tracking-area-code-range is not allowed for different priority.
- Selects a Virtual APN based on CLI configuration and User Plane is selected based on Virtual APN for a new call based on the tracking-area-code for that UE.
- Supports a combination of tracking-area-code-range and cc-profile in same priority.

Virtual APN functionality includes storing all the Virtual APN selection rules per real/Gn APN. Every rule has multiple criteria. Rule is identified by preference number. The list of APNs are stored and within APN a rule is identified using preference number.

New parameter has been introduced to pass Tracking Area Code, received in CSReq (TAI).

Limitations

Following are the known limitations and restriction of this feature.

- New configuration with multiple selection criteria in Virtual APN selection does not work with older builds/releases. User should have separate copies of the configuration for older builds/releases.
- Modify operation on the Virtual APN rule is not supported. User should delete the existing rule and add new rule to achieve modify operation.
- If same option is provided multiple times in the same rule, then the value of later option is considered for selection.
- Total number of Virtual APN rules added across all APNs is limited to 2048. This limitation exists in non-CUPS architecture.

Configuring User Plane Selection based on TAC Range

This section provides information about CLI commands available in support of this feature.

Configuring Tracking Area Code Range

Use the following CLI commands to configure APN for Tracking Area Code range in Control Plane node.

```
configure  
  context context_name  
    apn apn_name  
      virtual-apn preference preference apn apn_name tracking-area-code-range  
        tac_range  
      end
```

NOTES:

- **tracking-area-code-range** *tac_range*: Configures APN for Tracking Area Code range. The *tac_range* is an integer value ranging from 0 to 65535.

Verifying the Tracking Area Code Range Configuration

Use the following CLI commands to verify if the feature is enabled and the range that is configured for Tracking Area Code.

- **show configuration apn** *apn_name*
- **show apn name** *apn_name*

