

Update Requests Toward CHF

- Feature Summary and Revision History, on page 1
- Feature Description, on page 2
- How it Works, on page 2
- Configuration Support for Setting up the Update Requests, on page 2
- Use Case Template Actions, on page 5
- Troubleshooting Information, on page 5

Feature Summary and Revision History

Summary Data

Table 1: Summary Data

Applicable Product(s) or Functional Area	PCF
Applicable Platform(s)	SMI
Feature Default Setting	Enabled – Configuration required to disable
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	2020.01.0

Feature Description

The 4G CPS PCRF supports LDAP notification. In 5G, this support is available to PCF by using the same LDAP plugins which were deployed for 4G. PCF supports the following features:

- Requery Subscriber Profile Repository (SPR) on receiving the LDAP notification.
- Reevaluate the subscriber policies after receiving LDAP response.
- Based on the action derived from the CRD table, the corresponding action is performed over the N28 interface. The corresponding actions are to start, continue, update, reinitiate, and to terminate an N28 session.

How it Works

This section describes how this feature works.

The SMF sends the N7 Create Request to PCF. PCF then sends the query to LDAP to find the subscriber profile. The LDAP notifications from the LDAP client are supported in the following way:

1. For any changes in a subscriber profile, PCF receives an LDAP notification. PCF then sends a requery to find the updated subscriber profile.
2. On receiving the LDAP notification, PCF sends the N28 Subscribe Update on the Charging Function (CHF). PCF sends this update to receive the updated status of policy counters for the policy that the subscriber has subscribed.
3. After reevaluating the counters that PCF receives from CHF over the N28 interface, if policy has changed, then SMF is updated with the Update Notify message over the N7 interface.

Standards Compliance

This feature complies with the following standards specifications:

- *3GPP TS 29.510 V15.2.0 (2018-12) "Network Function Repository Services"*

Configuration Support for Setting up the Update Requests

Setting up the update requests toward CHF involves configuring the following services:

1. TableDrivenActionOverN28
2. SpendingLimitSubscription

TableDrivenActionOverN28

This section describes the parameters that are required to configure the TableDrivenActionOverN28 service.

The TableDrivenActionOverN28 service configuration evaluates and retrieves action on the received messages. During the policy evaluation, if the TableDrivenActionOverN28 service exists in policy, PCF evaluates the CRD table and determines the action for the implementation on the N28 interface.

Based on the action value, PCF performs the following tasks:

- If the action value is Update and if the N28 session exists, PCF initiates the Intermediate Spending Limit Report operation.
- On receiving the Subscription-Update response or timeout, PCF reevaluates the TableDrivenActionOverN28 configuration and determines the next action.
- If the action value is Reinitiate, PCF terminates the existing session and initiates a new session by sending a subscription request. After PCF terminates the existing session, sync N28 Unsubscribe is sent and the session gets deleted.

The TableDrivenActionOverN28 service configuration accepts only request message attributes for Input column binding. Hence, the attribute value pair (AVP) code must match the JSON path that is received in the message. In addition to message attributes, the following AVP codes are used as input AVP codes:

- Command-Code—The command code of request message.
- Application-Id—The Diameter Application Identifier to send the Diameter message.

Before setting the service parameters, ensure that you create a use case template and add a service for this configuration. For details, see Configuring the Use Case Template and Adding a Service.

The following table describes the TableDrivenActionOverN28 service parameters.

Note Select the N28 service configuration object to configure this service.

Table 3: TableDrivenActionOverN28 Parameters

Parameters	Description
Search Table Group	Enter the table group that you want to search from the custom reference data table. **Note** The STG and the included CRD table can have key columns that may not refer to the message attributes in the inbound message. For example, output of other tables. Therefore, ensure to bind these columns correctly. • Input Column Binding—Under this parameter, select a value for the ColumnAndAvpPair parameter. • AVP Name—Select the name of the Request Attribute for input for evaluating the custom reference data table. • Column—Select the key column in the Search Table Group corresponding to the specified AVP.

Parameters	Description
Output Column Binding	Under this parameter, select a value for the ColumnAndAvpPair parameter. • Avp Name—Select the name of the Request Attribute to which the value of the output column is mapped. • Column—Select the CRD table column for the output AVP. **Note** The list of Output column to AVP bindings supports only one column or AVP binding for fixed AVP code Action-Over-N28.

SpendingLimitSubscription

This section describes the parameters that are required to configure the SpendingLimitSubscription service.

The SpendingLimitSubscription service configuration object is added for the N28 interface. With this configuration, you can perform the following tasks:

- Request and subscribe the policy counter status reporting from PCF to CHF.
- Unsubscribe from spending limit reports.
- Receive notifications of spending limit reports from CHF to PCF.

Note Select the N28 service configuration object to configure the SpendingLimitSubscription service.

Before setting the service parameters, ensure that you create a use case template and add a service for this configuration. For details, see Configuring the Use Case Template and Adding a Service.

The following table describes the SpendingLimitSubscription service parameters.

Table 4: SpendingLimitSubscription Parameters

Parameter	Description
Supi	Pulls the value from the session and policy state retrievers, which are mapped to the N7 Subscription Permanent Identifier (SUPI) object. **Note** The default values of SUPI and GPSI are not configured and their values are always dynamically pulled from the session and policy state retrievers.
Gpsi	Pulls the value from the session and policy state retrievers, which are mapped to the N7 Generic Public Subscription Identifier (GPSI) object. **Note** The default values of SUPI and GPSI are not configurable, and their values are always dynamically pulled from the session and policy state retrievers.

Parameter	Description
Defaults On Failure	This is an optional parameter. • Under this parameter, configure DefaultSpendingLimitReport, which specifies the default list of Policy Counter Identifiers that are subscribed for failures. Configure the following parameters: • Failure Reason—From the drop-down list, select failure code for the default identifier. • Identifier—Enter the name for the policy counter identifier. • Status—Select the status of the policy counter identifier.

Use Case Template Actions

This section describes the actions that you can perform for the use case templates.

The N28 TGPP session exists condition indicates that a valid N28 session exists for the use case to become true.

The following table describes the condition input variables that you can configure in Policy Builder:

Table 5: Conditions and the AVP Descriptions

Condition Input Variable	AVP Used and Description
failureReason	Reason for failure when the N28 session is not established due to an error.
lastSubscriptionType	Last subscription request type, which can be Initial or Update.
failureReason	Failure reason of the last N28 session.
syCountersIdentifierAndStatus	N28 counter identifier and status.
subscriptionId	Unique ID of the N28 session.
Connected	Boolean value to indicate whether the N28 connection is established or not.

Troubleshooting Information

For message routing failures, check the datastore pod health and the logs for any issues.

For more information on how to check the pod health and logs, see Troubleshooting Information.