

Authorization With Required QoS

- Feature Summary Revision History, on page 1
- Feature Description, on page 1
- How it Works, on page 2
- Call Flows, on page 2
- Standards Compliance , on page 4

Feature Summary Revision History

Summary Data

Table 1: Summary Data

Applicable Products or Functional Area	PCF
Applicable Platform(s)	SMI
Feature Default Setting	Enabled
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	2022.03.0

Feature Description

The Application Function (AF) initiates support for Authorization with Required QoS to enable the high-priority traffic and applications for network resources.

How it Works

This section describes how this feature works.

In the Authorization with Required QoS feature, the interactions happen in the following sequence:

- AF initiates Authorization of Required QoS, the Policy Control Function (PCF) sets the feature state as enabled in the create response.
- For authorizing a media component, PCF uses a QoS reference as a parameter, and the operators added the QoS reference as an extra key column to the Search Table Groups (STG).
- To create and update requests without QoS reference: PCF uses the null value for QoS parameters and * value to match Customer Reference Data (CRD) queries without QoS reference.
- If the CRD query failed to generate a match while analyzing STG Configuration with QoS reference, PCF applies the QoS parameters obtained using the QoS algorithm.
- Rejecting media components with the alternate QoS: The SMF supports the Authorization with the Required QoS feature for provisioning rules with different QoS levels. When SMF does not support this feature, PCF automatically rejects the media components with alternate QoS references as authorization failure. Refer to Bearer Authorization in N5 Authorization.
- In the Service Based Interface (SBI) profile, the configuration option is disabled rejecting media components with alternate QoS references. When this option is enabled, PCF ignores the alternate service requirements and selects the QoS parameters for the media component that based on QoS reference.
- Handling of AF sessions without Authorization with Required QoS: The QoS parameters that are derived for QoS reference are modified, and a final QoS parameter is applied for the Message Prioritization Service (MPS). If the PDU session to AF session is associated with one or more MPS sessions.
- Subscribing and unsubscribing to the QoS: In subscribing and unsubscribing to the QOS_NOTIF event, PCF supports AF and specifies if the GBR QoS targets are assured or not. In QoS data, PCF enables and disables the QNC flag for Policy and Charging Control (PCC) rules connected to an AF session.

Call Flows

This section describes the key call flows for this feature.

Authorization with Required QoS Call Flow

This section describes the Authorization with Required QoS call flow for the N7 and N5 interface.

Figure 1: Authorization with Required QoS Call Flow

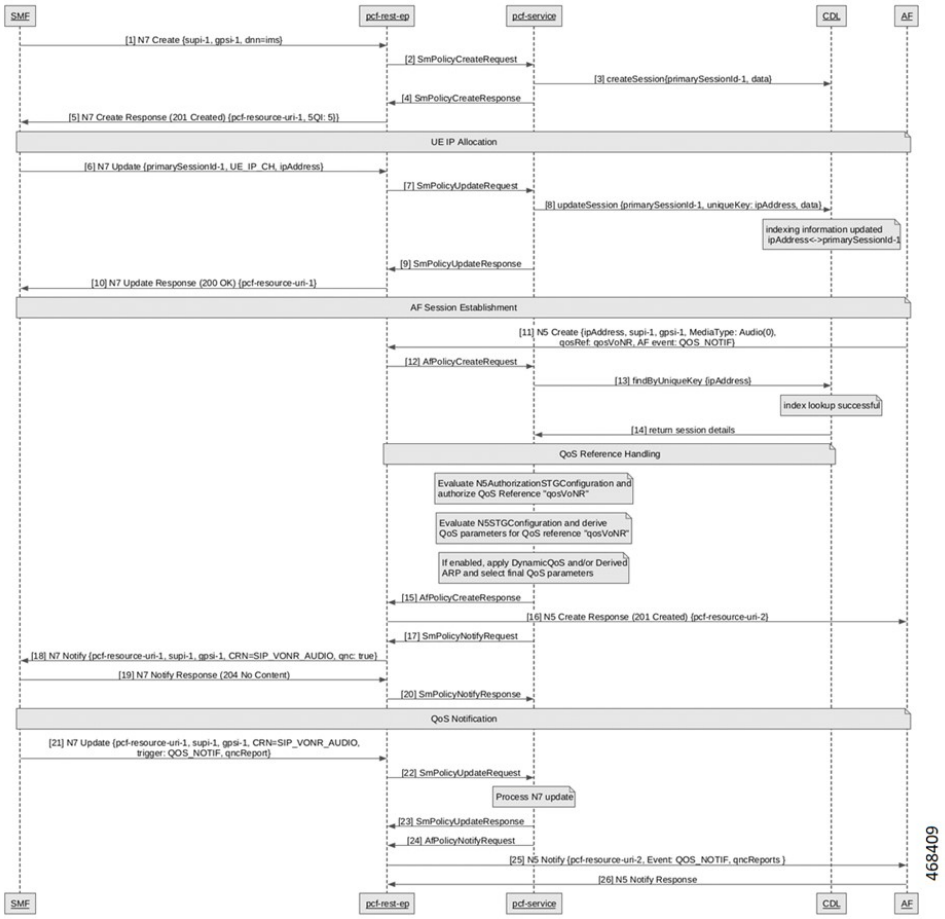


Table 3: Authorization with Required QoS Call Flow Description

Step	Description
1	The SMF sends a N7 Create request to the PCF-REST-EP.
2	The PCF-REST-EP sends the Single Mode (SM) Policy Create Request to the PCF-SERVICE.
3	The PCF-SERVICE sends the Create session to the CDL.
4	The PCF-SERVICE sends the SM Policy Create Response to the PCF-REST-EP.
5	The PCF-REST-EP responds with the N7 Create to the SMF.
6	After UE IP Allocation, the SMF sends the N7 Update to the PCF-REST-EP.
7	The PCF-REST-EP sends the SM Policy Update Request to the PCF-Service.
8	The PCF-SERVICE sends the Update Session to the CDL.
9	After Indexing Information Updated, the PCF-Service sends the SM Policy Update Response to the PCF-REST-EP.

Step	Description
10	The PCF-REST-EP sends the N7 Update Response to the SMF.
11	After AF Session Establishment, the AF sends the N5 Create Request to the PCF-REST-EP.
12	The PCF-REST-EP sends AF Policy Create Request to the PCF-SERVICE.
13	The PCF-SERVICE sends the Find by Unique Key (IP Address) to the CDL.
14	After Index Lookup Successful, the CDL sends the Return Session Details to the PCF-SERVICE.
15	After QoS Reference Handling, the PCF-SERVICE sends the AF Policy Create Response to the PCF-REST-EP.
16	The PCF-REST-EP sends the N5 Create Response to the AF.
17	The PCF-SERVICE sends the SM Policy Notify Request to the PCF-REST-EP.
18	The PCF-REST-EP sends the N7 Notify to the SMF.
19	The SMF sends the N7 Notify Response to the PCF-REST-EP.
20	The PCF-REST-EP sends the SM Policy Notify Request to the PCF-SERVICE.
21	After QoS Notification, the SMF sends the N7 Update to the PCF-REST-EP.
22	The PCF-REST-EP sends the SM Policy Update Request to the PCF-SERVICE.
23	After Process N7 Update, the PCF-SERVICE sends the SM Policy Update Response to the PCF-REST-EP.
24	The PCF-SERVICE sends the AF Policy Notify Request to the PCF-REST-EP.
25	The PCF-REST-EP sends the N5 Notify to the AF.
26	The AF sends the N5 Notify Response to the PCF-REST-EP.

Standards Compliance

This feature complies with the following standards specifications:

- 3GPP 29.513 "Policy and Charging Control signaling flows and QoS parameter mapping"
- 3GPP 29.514 version 16.7.0 "Policy Authorization Service (PAS)"