

Configuration Guide for Emergency and Multimedia Priority Services

Ericsson Service-Aware Policy Controller

USER GUIDE

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1 Configuration and Provisioning Overview

Next figure, shows the main parts related to configuration and provisioning in the SAPC.

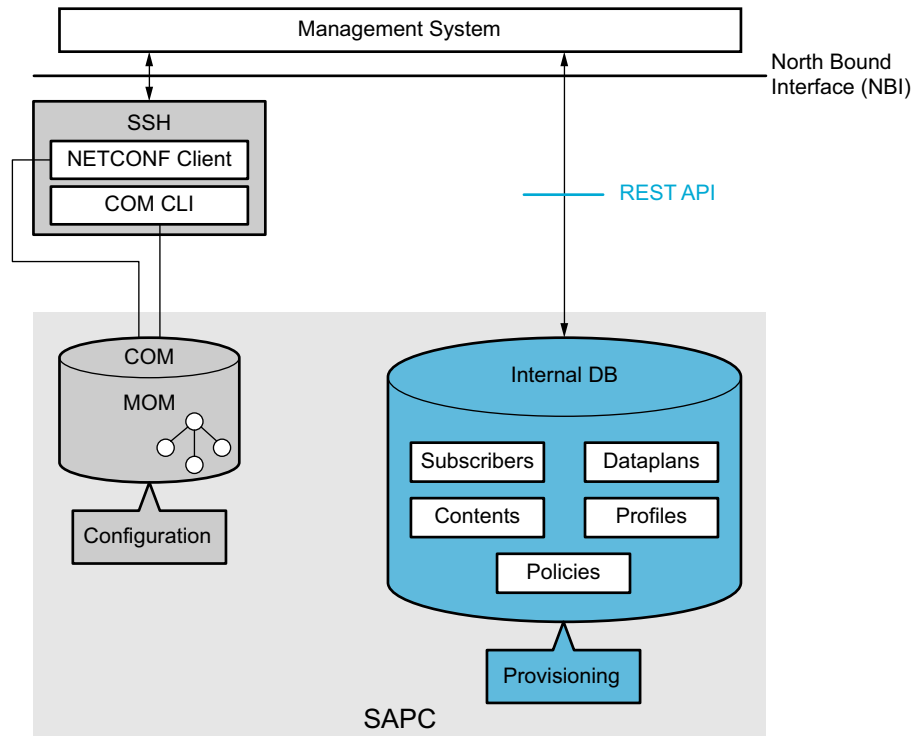


Figure 1 Configuration and Provisioning Overview

The purpose of this document is to provide guidelines to configure the SAPC node for emergency and multimedia priority services by providing configuration examples.

The configuration for emergency and multimedia priority services is an extension of Configuration Guide for Access and Charging Control (Gx) and Configuration Guide for Dynamic Policy Control (Rx).

The complete parameter list and details of all configured options of the SAPC are included in separate documents, refer to Managed Object Model (MOM), Provisioning REST API, and Database Access.

Examples in this document cover the case of data configured in the SAPC internal repository. If an external repository is used, refer to Database Access.



1.1 Other Conventions

This document refers to some configuration and provisioning data.

To clarify which detailed data is managed by COM or by the REST API, this document uses the following conventions:

- Configuration: whenever referring to Managed Object Class (MOC).

The detailed description of the object and attributes can be found in Managed Object Model (MOM).

Example: set `enableReauthsOnSubsChange` attribute in class `AppConfig`.

The tools or interfaces to manage these data in the SAPC are:

- NETCONF interface, refer to [Ericsson NETCONF Interface](#).

The configuration examples show the NETCONF file contents, using the following syntax:

```
<edit-config>
  ...
  <config>
    <ManagedElement xmlns="urn:com:ericsson:ecim:ComTop">
      <managedElementId>1</managedElementId>
      ...
    </ManagedElement>
  </config>
</edit-config>
```

- COM CLI, refer to [Ericsson Command-Line Interface](#).

- Provisioning: mainly subscribers, subscriber groups (dataplan), services (contents), profiles, and policy-related data. The SAPC provides a REST API for them, see [Provisioning REST API](#).

This document uses the following terminology for them: `<resource-name>` URI in the provisioning REST API.

Example: To provision subscriber groups, use the `dataplan` URI in the provisioning REST API.

Provisioning examples show HTTP operations on REST resources with the following syntax:

```
HTTP-Operation /resource-URI
  {json content} where /resource-URI is the relative URI from the SAPC
  provisioning base URI detailed in Provisioning REST API.
```

Example:



```
PUT /dataplan/Gold
{ "dataplanName" : "Gold",
  "subscribedContents" : [{"contentName" : "HTTP_Streaming",
                           "redirect" : false}]
}
```

Note: To ease provisioning operations, the SAPC provides an HTTPS CLI client named `resty`, refer to [Provisioning Tools](#).





2 Configuration Prerequisites

Before configuring the SAPC in an operational network, make sure that:

- CBA Components are installed
- The SAPC product software is installed
- The SAPC user performing configuration changes has thorough knowledge of the function









Note: Subscriber and Global policy locators apply to emergency calls, even if the emergency subscriber is not provisioned.

The global locator can be provisioned as specified in Configuration Guide for Subscription and Policies.



6 Emergency Subscriber Profile in External Repository

The SAPC supports to store the emergency subscriber profile in an external repository. To do so, modify `EDSourceId=SubscriberEmergency` to specify in their `dataSource` fields the details to access the external repository. For details, refer to [Integration in User Data Consolidation](#).

Note: Some `fieldDefs` do not apply to the emergency subscriber, thus these fields are preconfigured to "".







8 Provision MPS Profiles

To define MPS profiles, use the `multimedia-priority-services` URI in the Provisioning REST API.

- `profileId` is the unique identity of the MPS profile.
- `mpsType` is the priority type of multimedia priority services.

Allowed values:

- `EpsBearer` applies to all traffic for the subscriber.
- `ImsSignalling` only applies to IMS signalling traffic.

- `priorityLevel` indicates the priority level for multimedia priority services.

Allowed values: 1-15. The value 1 represents the highest priority level and 15 the lowest priority level.

```
-----  
.  
-----  
-----  
-----  
.
```

Example 5 Provisioning of MPS Profile





Example 9 Provision of IMS Emergency Services



Example 14 EPS Bearer Services Policy

9.4 IMS Multimedia Priority Services

This section includes some examples to show how to prioritize dedicated bearers (Service QoS) and default bearer (Bearer QoS) according to the received data through Rx interface.

Note: Any combination of priorities based on subscription and Rx data can be managed by rules sorted by priority (the highest priority, the first rule).

9.4.1 Service QoS

Here is a summary of the configuration steps to follow:

- Provision dynamic services and their static QoS profiles.
- Configure a policy for Dynamic Service Classification.
- Configure a policy for Dynamic Service Qualification according to reservation priority of the classified dynamic services.

First, non-prioritized `Qos_DefaultBearer` profiles and prioritized `Qos_DefaultBearer_Prio3` profiles are defined for the "MMTel_Service_Audio" and "MMTel_Service_Video" services. The non-prioritized QoS profiles are unconditionally assigned to both services respectively.



```
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|
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|-----
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|
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|
```

Example 17 IMS MPS Services Qualification

9.4.2 Bearer QoS

Apart from dedicated bearers, the default bearer can also be prioritized according to the `Reservation-Priority` AVP received from the AF.

Here is a summary of the configuration steps to follow:

- Configure QoS profiles for the default bearer.
- Configure a Dynamic Service Classification policy as in Section 9.4.1 on page 29.
- Configure a qualification policy to prioritize the default bearer according to reservation priority of the classified dynamic service.

Example 18 provisions non-prioritized profile `Qos_DefaultBearer` and assigns it unconditionally to the "ImsBearerGroup" group.



10 Appendix A. Emergency Services Policy Tags

Table 1 shows the emergency services related policy tag that can be used in the condition formula of rules.

Table 1 Emergency services policy tag.

Tag	Return Type	Possible Values	Comments
AfData.serviceUrn	String	any	The value of the service URN provided by the AF for the Rx session. If not received or the AF session is not used for emergency traffic, the value returned is "" (empty string).





11 Appendix B. Multimedia Priority Services Policy Tags

This section lists the MPS policy tags that can be used in policy conditions.

Table 2 shows the tags related to information about IP-CAN session. The values of the tags are obtained from the `Called-Station-Id` AVP in CCR-I messages. Their values are kept during the session lifetime, unless new values of the AVP are received in subsequent CCR-U or CCR-T messages.

Table 2 Incoming Message Tags

Tag	Return Type	Possible Values	Comments
<code>Apns.epsBearerIds</code>	Multivalued String	any	Indicates APNs for EPS bearer priority services.
<code>Apns.imsIds</code>	Multivalued String	any	Indicates APNs for IMS priority services.

Table 3 shows tags related to the subscriber profiles. The values of the tags refer to the MPS profiles provisioned for the subscribers.

Table 3 Subscription Related Tags

Tag	Return Type	Possible Values	Comments
<code>Subscriber.mpsProfile.mpsType</code>	String	EpsBearer ImsSignalling	Indicates subscription to either EPS bearer priority service or IMS signalling priority service.
<code>Subscriber.mpsProfile.priorityLevel</code>	Integer	1–15	Indicates the subscriber priority level.

Table 4 shows the tags related to the content of an Rx request that can be used in Dynamic Service Classification, Authorization, or Qualification.



The values of the tags are obtained from the AVPs received in Rx messages. Their values are kept during the session lifetime, unless new values of the AVP are received in subsequent AAR messages.

Table 4 Application (Rx data) Tags

Tag	Return Type	Possible Values	Comments
AfData.media.reservationPriority	Integer	0-15	The reservation priority. Its value is returned at media component level if present. If not received in any media component, but it is received at command level, the value at command level is returned. If not received neither at media component nor command level, 0 (lowest priority level) is assumed. (1)
AfData.mpsIdentifier	String	any	The service name for multimedia priority service. If not received, the value returned is "" (empty string).

(1) This tag iterates on each media component of the Rx message.

Table 5 shows tags that can be used in any policy condition evaluated during Gx interactions according to the characteristics of the dynamic services or media components that are active in the IP-CAN session.



Table 5 Policy Tags Related to Dynamic Services

Tag	Return Type	Possible Values	Comments
<code>AccessData.subscriber.service["serviceName"].media.type["mediaType"].reservationPriority</code>	Integer	0-15	<p>Indicates the reservation priority of the dynamic service and media component running on the Gx IP-CAN session. ⁽¹⁾</p> <p>The service name must correspond to the name used in service classification.</p> <p>The media type can be any of the supported values in <code>AfData.media.type</code>.</p> <p>The value returned corresponds to the value received from the AF at media component level, if present.</p> <p>If not received at media component level, but it is received at command level, the value at command level is returned.</p> <p>If not received at media component or command level, 0 (lowest priority level) is assumed. ⁽²⁾</p>
<code>AccessData.subscriber.service["serviceName"].reservationPriority</code>	Integer	0-15	<p>Indicates the reservation priority of the dynamic service running on the Gx IP-CAN session. ⁽¹⁾⁽³⁾</p> <p>The service name must correspond to the name used in service classification.</p> <p>The value returned corresponds to the value received from the AF at media component level, if present.</p> <p>If not received at media component level, but it is received at command level, the value at command level is returned.</p> <p>If not received at media component or command level, 0 (lowest priority level) is assumed.</p>

(1) If the service is not running, rule evaluation results in false.

(2) If a dynamic service has several media components of the same type (for example two video streams), the SAPC returns the same reservation priority value for all media components of the same media type.

(3) If there are more than one instances of "serviceName" running on the IP-CAN session, the SAPC returns the maximum reservation priority values of all instances. This enables the use case of VoLTE priority call on-hold (call waiting).





Reference List

Ericsson Documents

- [1] Configuration Guide for Access and Charging Control (Gx)
- [2] Managed Object Model (MOM)
- [3] Provisioning REST API
- [4] Database Access