Ultra Cloud Core 5G Policy Control Function, Release 2020.03 - API Reference

First Published: 2020-09-22

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About this Guide

This preface describes the *Ultra Cloud Core 5G Policy Control Function, Release 2020.02 - API Reference*, the document conventions, and the customer support details.

- Conventions Used, on page xi
- Contacting Customer Support, on page xii

Conventions Used

The following tables describe the conventions used throughout this documentation.

Notice Type	Description
Information Note	Provides information about important features or instructions.
Caution	Alerts you of potential damage to a program, device, or system.
Warning	Alerts you of potential personal injury or fatality. May also alert you of potential electrical hazards.

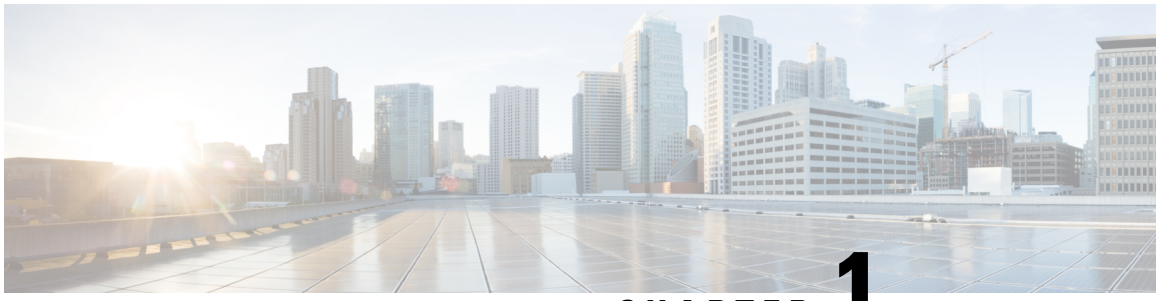
Typeface Conventions	Description
Text represented as a `screen display`	This typeface represents displays that appear on your terminal screen, for example: `Login:`
Text represented as **commands**	This typeface represents commands that you enter, for example: **show ip access-list** This document always gives the full form of a command in lowercase letters. Commands are not case sensitive.

Typeface Conventions	Description
Text represented as a **command** *variable*	This typeface represents a variable that is part of a command, for example: **show card** *slot_number* *slot_number* is a variable representing the desired chassis slot number.
Text represented as menu or sub-menu names	This typeface represents menus and sub-menus that you access within a software application, for example: Click the **File** menu, then click **New**

Contacting Customer Support

Use the information in this section to contact customer support.

Refer to the support area of http://www.cisco.com for up-to-date product documentation or to submit a service request. A valid username and password are required to access this site. Please contact your Cisco sales or service representative for additional information.



CHAPTER 1

Npcf_AMPolicyControl

The PCF uses the Npcf_AMPolicyControl API to communicate with the Access and Mobility Management Function (AMF) over the N15 Interface.

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- info, on page 1
- externalDocs, on page 1
- servers, on page 1
- security, on page 2
- paths, on page 2
- components, on page 7

OpenAPI

OpenAPI Version: 3.0.0

info

Description: Access and Mobility Policy Control Service API

Version: "1.0.0"

Title: Npcf_AMPolicyControl

externalDocs

Description: 3GPP TS 29.507 V15.2.0; 5G System; Access and Mobility Policy Control Service.

URL: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.507/'

servers

URL: '{apiRoot}/npcf-am-policy-control/v1'

Variables:

API Root:

Default: https://example.com

Description: apiRoot as defined in subclause subclause 4.4 of 3GPP TS 29.501

security

- {}

- oAuth2ClientCredentials:

- npcf-am-policy-control

paths

/policies

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/PolicyAssociationRequest'

Responses:

'**201**' Created

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/PolicyAssociation'

Headers:

Location:

Description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/npcf-am-policy-control/v1/policies/{polAssoId}'

Required/Optional: true

Schema:

Type: string

'**400**': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

Callbacks:

policyUpdateNotification:

'{$request.body#/notificationUri}/update':

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/PolicyUpdate'

Responses:

'204' No Content, Notification was succesfull

'307' temporary redirect

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

policyAssocitionTerminationRequestNotification:

'{$request.body#/notificationUri}/terminate':

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/TerminationNotification'

Responses:

'204' No Content, Notification was succesfull

'307' temporary redirect

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

/policies/{polAssoId}

get:

Parameters:

- name: polAssoId

In: path

Description: Identifier of a policy association

Required/Optional: true

Schema:

Type: string

Responses:

'200' OK. Resource representation is returned

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/PolicyAssociation'

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'406': Reference 'TS29571_CommonData.yaml#/components/responses/406'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

delete:

Parameters:

- name: polAssoId

In: path

Description: Identifier of a policy association

Required/Optional: true

Schema:

Type: string

Responses:

'204' No Content. Resource was succesfully deleted

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

/policies/{polAssoId}/update

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/PolicyAssociationUpdateRequest'

Parameters:

- name: polAssoId

In: path

Description: Identifier of a policy association

Required/Optional: true

Schema:

Type: string

Responses:

'200' OK. Updated policies are returned

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/PolicyUpdate'

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

components

securitySchemes

oAuth2ClientCredentials

Type: oauth2

Flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

npcf-am-policy-control: Access to the Npcf_AMPolicyControl API

schemas

PolicyAssociation

Type: object

Properties:

request:

Reference: '#/components/schemas/PolicyAssociationRequest'

triggers:

Type: array

Items:

Reference: '#/components/schemas/RequestTrigger'

minItems: 1

Description: Request Triggers that the PCF subscribes. Only values "LOC_CH" and "PRA_CH" are permitted.

servAreaRes:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ServiceAreaRestriction'

rfsp:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RfspIndex'

pras:

Type: object

additionalProperties:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PresenceInfo'

minProperties: 1

suppFeat:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

Required:

- suppFeat

PolicyAssociationRequest

Type: object

Properties:

notificationUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

altNotifIpv4Addrs:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

minItems: 1

Description: Alternate or backup IPv4 Address(es) where to send Notifications.

altNotifIpv6Addrs:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'

minItems: 1

Description: Alternate or backup IPv6 Address(es) where to send Notifications.

supi:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'

gpsi:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Gpsi'

accessType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'

pei:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Pei'

userLoc:

Reference: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'

timeZone:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TimeZone'

servingPlmn:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NetworkId'

ratType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'

groupIds:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'

minItems: 1

servAreaRes:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ServiceAreaRestriction'

rfsp:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RfspIndex'

guami:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'

serviveName:

Type: string

Description: If the NF service consumer is an AMF, it should provide the name of a service produced by the AMF that makes use of information received within the Npcf_AMPolicyControl_UpdateNotify service operation.

traceReq:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'

suppFeat:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

Required:

- notificationUri

- suppFeat

- supi

PolicyAssociationUpdateRequest

Type: object

Properties:

notificationUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

altNotifIpv4Addrs:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

minItems: 1

Description: Alternate or backup IPv4 Address(es) where to send Notifications.

altNotifIpv6Addrs:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'

minItems: 1

Description: Alternate or backup IPv6 Address(es) where to send Notifications.

triggers:

Type: array

Items:

Reference: '#/components/schemas/RequestTrigger'

minItems: 1

Description: Request Triggers that the NF service consumer observes.

servAreaRes:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ServiceAreaRestriction'

rfsp:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RfspIndex'

praStatuses:

Type: object

additionalProperties:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PresenceInfo'

minProperties: 1

Description: Map of PRA status information.

userLoc:

Reference: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'

traceReq:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'

PolicyUpdate

Type: object

Properties:

resourceUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

triggers:

Type: array

Items:

Reference: '#/components/schemas/RequestTrigger'

minItems: 1

nullable: true

Description: Request Triggers that the PCF subscribes. Only values "LOC_CH" and "PRA_CH" are permitted.

servAreaRes:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ServiceAreaRestriction'

rfsp:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RfspIndex'

pras:

Type: object

additionalProperties:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PresenceInfoRm'

Description: Map of PRA information.

minProperties: 1

nullable: true

Required:

- resourceUri

TerminationNotification

Type: object

Properties:

resourceUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

cause:

Reference: '#/components/schemas/PolicyAssociationReleaseCause'

Required:

- resourceUri
- cause

RequestTrigger

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- LOC_CH: Location change (tracking area). The tracking area of the UE has changed.

- PRA_CH: Change of UE presence in PRA. The UE is entering/leaving a Presence Reporting Area.

- SERV_AREA_CH: Service Area Restriction change. The UDM notifies the AMF that the subscribed service area restriction information has changed.

- RFSP_CH: RFSP index change. The UDM notifies the AMF that the subscribed RFSP index has changed.

PolicyAssociationReleaseCause

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

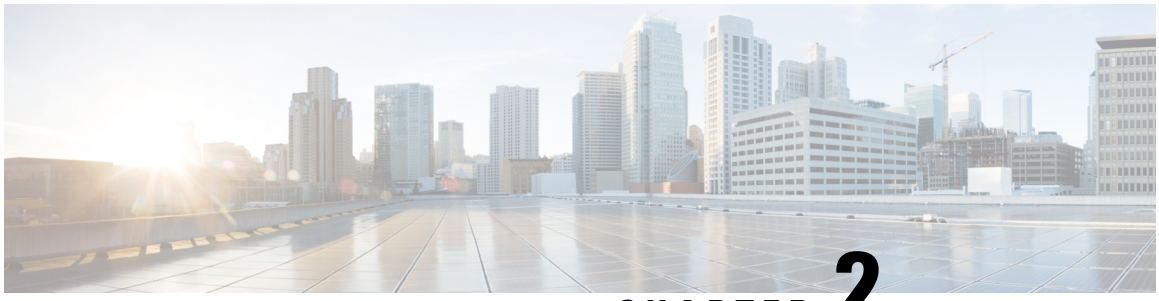
content defined in the present version of this API.

Possible values are

- UNSPECIFIED: This value is used for unspecified reasons.

- UE_SUBSCRIPTION: This value is used to indicate that the session needs to be terminated because the subscription of UE has changed (e.g. was removed).

- INSUFFICIENT_RES: This value is used to indicate that the server is overloaded and needs to abort the session.



CHAPTER 2

Nnrf_NFDiscovery

The Network Repository Function authorizes an NF client to perform the discovery operation using the Nnrf_NFDiscovery service to detect an NF.

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- info, on page 13
- servers, on page 13
- security, on page 14
- paths, on page 14
- components, on page 21
- externalDocs, on page 26

OpenAPI

OpenAPI Version: 3.0.0

info

Version: '1.0.0'

Title: 'NRF NFDiscovery Service'

Description: 'NRF NFDiscovery Service'

servers

URL: '{apiRoot}/nnrf-disc/v1'

Variables:

API Root:

Default: https://example.com

Description: apiRoot as defined in subclause subclause 4.4 of 3GPP TS 29.501

security

- {}
- oAuth2ClientCredentials:
- nnrf-disc

paths

/nf-instances

get:

Summary: Search a collection of NF Instances

Operation ID: SearchNFInstances

Tags:

- NF Instances (Store)

Parameters:

- name: target-nf-type

In: query

Description: Type of the target NF

Required/Optional: true

Schema:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/NFType'

- name: requester-nf-type

In: query

Description: Type of the requester NF

Required/Optional: true

Schema:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/NFType'

- name: service-names

In: query

Description: Name of the service offered by the NF

Schema:

Type: array

items:

Type: string

minItems: 1

style: form

explode: false

- name: requester-nf-instance-fqdn

In: query

Description: FQDN of the requester NF

Schema:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/Fqdn'

- name: target-plmn-list

In: query

Description: Id of the PLMN where the target NF is located

Content:

Application/JSON:

Schema:

Type: array

items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

minItems: 1

- name: requester-plmn-list

In: query

Description: Id of the PLMN where the NF issuing the Discovery request is located

Content:

Application/JSON:

Schema:

Type: array

items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

minItems: 1

- name: target-nf-instance-id

In: query

Description: Identity of the NF instance being discovered

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

- name: target-nf-fqdn

In: query

Description: FQDN of the NF instance being discovered

Schema:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/Fqdn'

- name: hnrf-uri

In: query

Description: Uri of the home NRF

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

- name: snssais

In: query

Description: Slice info of the target NF

Content:

Application/JSON:

Schema:

Type: array

items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

minItems: 1

- name: dnn

In: query

Description: Dnn supported by the BSF, SMF or UPF

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'

- name: nsi-list

In: query

Description: NSI IDs that are served by the services being discovered

Schema:

Type: array

items:

Type: string

minItems: 1

style: form

explode: false

- name: smf-serving-area

In: query

Schema:

Type: string

- name: tai

In: query

Description: Tracking Area Identity

Content:

Application/JSON:

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'

- name: amf-region-id

In: query

Description: AMF Region Identity

Schema:

Type: string

- name: amf-set-id

In: query

Description: AMF Set Identity

Schema:

Type: string

- name: guami

In: query

Description: Guami used to search for an appropriate AMF

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'

- name: supi

In: query

Description: SUPI of the user

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'

- name: ue-ipv4-address

In: query

Description: IPv4 address of the UE

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

- name: ip-domain

In: query

Description: IP domain of the UE, which supported by BSF

Schema:

Type: string

- name: ue-ipv6-prefix

In: query

Description: IPv6 prefix of the UE

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'

- name: pgw-ind

In: query

Description: Combined PGW-C and SMF or a standalone SMF

Schema:

Type: boolean

- name: pgw

In: query

Description: PGW FQDN of a combined PGW-C and SMF

Schema:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/Fqdn'

- name: gpsi

In: query

Description: GPSI of the user

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Gpsi'

- name: external-group-identity

In: query

Description: external group identifier of the user

Schema:

Type: string

- name: data-set

In: query

Description: data set supported by the NF

Schema:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/DataSetId'

- name: routing-indicator

In: query

Description: routing indicator in SUCI

Schema:

Type: string

pattern: '^[0-9]{1,4}$'

- name: group-id-list

In: query

Description: Group IDs of the NFs being discovered

Schema:

Type: array

items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'

minItems: 1

style: form

explode: false

- name: dnai-list

In: query

Description: Data network access identifiers of the NFs being discovered

Schema:

Type: array

items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnai'

minItems: 1

style: form

explode: false

- name: supported-features

In: query

Description: Features required to be supported by the target NF

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

- name: upf-iwk-eps-ind

In: query

Description: UPF supporting interworking with EPS or not

Schema:

Type: boolean

- name: chf-supported-plmn

In: query

Description: PLMN ID supported by a CHF

Content:

Application/JSON:

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

- name: preferred-locality

In: query

Description: preferred target NF location

Schema:

Type: string

- name: access-type

In: query

Description: AccessType supported by the target NF

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'

- name: If-None-Match

In: header

Description: Validator for conditional requests, as described in IETF RFC 7232, 3.2

Schema:

Type: string

Responses:

'200' Expected response to a valid request

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SearchResult'

Headers:

Cache-Control:

Description: Cache-Control containing max-age, described in IETF RFC 7234, 5.2

Schema:

Type: string

ETag:

Description: Entity Tag containing a strong validator, described in IETF RFC 7232, 2.3

Schema:

Type: string

'307' Temporary Redirect

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

components

securitySchemes

oAuth2ClientCredentials

Type: oauth2

Flows:

clientCredentials:

tokenUrl: '/oauth2/token'

scopes:

nnrf-disc: Access to the Nnrf_NFDiscovery API

schemas

SearchResult

Type: object

Required:

- nfInstances

Properties:

validityPeriod:

Type: integer

nfInstances:

Type: array

Items:

Reference: '#/components/schemas/NFProfile'

NFProfile

Type: object

Required:

- nfInstanceId
- nfType
- nfStatus

Properties:

nfInstanceId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

nfType:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/NFType'

nfStatus:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/NFStatus'

plmnList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

minItems: 1

sNssais:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

minItems: 1

nsiList:

Type: array

Items:

Type: string

minItems: 1

fqdn:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/Fqdn'

ipv4Addresses:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

minItems: 1

ipv6Addresses:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'

minItems: 1

capacity:

Type: integer

Minimum: 0

Maximum: 65535

load:

Type: integer

Minimum: 0

Maximum: 100

locality:

Type: string

priority:

Type: integer

Minimum: 0

Maximum: 65535

udrInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/UdrInfo'

udmInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/UdmInfo'

ausfInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/AusfInfo'

amfInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/AmfInfo'

smfInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/SmfInfo'

upfInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/UpfInfo'

pcfInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/PcfInfo'

bsfInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/BsfInfo'

chfInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/ChfInfo'

customInfo:

Type: object

recoveryTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

nfServicePersistence:

Type: boolean

Default: false

nfServices:

Type: array

Items:

Reference: '#/components/schemas/NFService'

minItems: 1

NFService

Type: object

Required:

- serviceInstanceId
- serviceName

- versions
- scheme
- nfServiceStatus

Properties:

serviceInstanceId:

Type: string

serviceName:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/ServiceName'

versions:

Type: array

Items:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/NFServiceVersion'

minItems: 1

scheme:

Reference: 'TS29571_CommonData.yaml#/components/schemas/UriScheme'

nfServiceStatus:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/NFServiceStatus'

fqdn:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/Fqdn'

ipEndPoints:

Type: array

Items:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/IpEndPoint'

minItems: 1

apiPrefix:

Type: string

defaultNotificationSubscriptions:

Type: array

Items:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/DefaultNotificationSubscription'

minItems: 1

capacity:

Type: integer

Minimum: 0

Maximum: 65535

load:

Type: integer

Minimum: 0

Maximum: 100

priority:

Type: integer

Minimum: 0

Maximum: 65535

recoveryTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

chfServiceInfo:

Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/ChfServiceInfo'

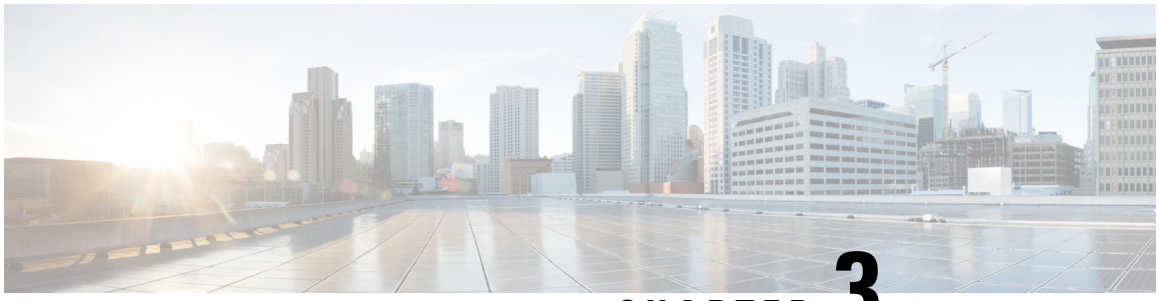
supportedFeatures:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

externalDocs

Description: 3GPP TS 29.510 V15.2.0; 5G System; Network Function Repository Services; Stage 3

URL: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.510/'



CHAPTER 3

Nnrf_NFManagement

The Network Repository Function uses the Nnrf_NFManagement service to manage the create, update, and delete an NF.

- OpenAPI, on page 27
- info, on page 27
- servers, on page 27
- security, on page 28
- paths, on page 28
- components, on page 37
- externalDocs, on page 65

OpenAPI

OpenAPI Version: 3.0.0

info

Version: '1.0.0'

Title: 'NRF NFManagement Service'

Description: 'NRF NFManagement Service'

servers

URL: '{apiRoot}/nnrf-nfm/v1'

Variables:

API Root:

Default: https://example.com

Description: apiRoot as defined in subclause subclause 4.4 of 3GPP TS 29.501

security

- {}
- oAuth2ClientCredentials:
- nnrf-nfm

paths

/nf-instances

get:

Summary: Retrieves a collection of NF Instances

Operation ID: GetNFInstances

Tags:

- NF Instances (Store)

Parameters:

- name: nf-type

In: query

Description: Type of NF

Required/Optional: false

Schema:

Reference: '#/components/schemas/NFType'

- name: limit

In: query

Description: How many items to return at one time

Required/Optional: false

Schema:

Type: integer

Responses:

'200' Expected response to a valid request

Content:

application/3gppHal+json:

Schema:

Type: object

Properties:

_links:

Type: object

Description: 'List of the URI of NF instances. It has two members whose names are item and self. The item one contains an array of URIs.'

additionalProperties:

Reference: 'TS29571_CommonData.yaml#/components/schemas/LinksValueSchema'

minProperties: 1

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

/nf-instances/{nfInstanceID}

get:

Summary: Read the profile of a given NF Instance

Operation ID: GetNFInstance

Tags:

- NF Instance ID (Document)

Parameters:

- name: nfInstanceID

In: path

Description: Unique ID of the NF Instance

Required/Optional: true

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

Responses:

'200' Expected response to a valid request

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/NFProfile'

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

put:

Summary: Register a new NF Instance

Operation ID: RegisterNFInstance

Tags:

- NF Instance ID (Document)

Parameters:

- name: nfInstanceID

In: path

Required/Optional: true

Description: Unique ID of the NF Instance to register

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

Request Body:

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/NFProfile'

Required/Optional: true

Responses:

'200' OK (Profile Replacement)

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/NFProfile'

'201' Expected response to a valid request

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/NFProfile'

Headers:

Location:

Description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/nnrf-nfm/v1/nf-instances/{nfInstanceId}'

Required/Optional: true

Schema:

Type: string

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

patch:

Summary: Update NF Instance profile

Operation ID: UpdateNFInstance

Tags:

- NF Instance ID (Document)

Parameters:

- name: nfInstanceID

In: path

Required/Optional: true

Description: Unique ID of the NF Instance to update

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

Request Body:

Content:

application/json-patch+json:

Schema:

Type: array

items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PatchItem'

minItems: 1

Required/Optional: true

Responses:

'200' Expected response to a valid request

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/NFProfile'

'204' Expected response with empty body

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

delete:

Summary: Deregisters a given NF Instance

Operation ID: DeregisterNFInstance

Tags:

- NF Instance ID (Document)

Parameters:

- name: nfInstanceID

In: path

Required/Optional: true

Description: Unique ID of the NF Instance to deregister

Schema:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

Responses:

'204' Expected response to a successful deregistration

/subscriptions

Method: Post

Summary: Create a new subscription

Operation ID: CreateSubscription

Tags:

- Subscriptions (Collection)

Request Body:

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SubscriptionData'

Required/Optional: true

Responses:

'201' Expected response to a valid request

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SubscriptionData'

Headers:

Location:

Description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/nnrf-nfm/v1/subscriptions/{subscriptionId}'

Required/Optional: true

Schema:

Type: string

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

Callbacks:

onNFStatusEvent:

'{$request.body#/nfStatusNotificationUri}':

Method: Post

Request Body:

Description: Notification Payload

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/NotificationData'

Responses:

'204' Expected response to a successful callback processing

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

/subscriptions/{subscriptionID}

patch:

Summary: Updates a subscription

Operation ID: UpdateSubscription

Tags:

- Subscription ID (Document)

Parameters:

- name: subscriptionID

In: path

Required/Optional: true

Description: Unique ID of the subscription to update

Schema:

Type: string

pattern: '^([0-9]{5,6}-)?[^-]+$'

Request Body:

Content:

application/json-patch+json:

Schema:

Type: array

items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PatchItem'

Required/Optional: true

Responses:

'200' Expected response to a valid request

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SubscriptionData'

'204' No Content

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

delete:

Summary: Deletes a subscription

Operation ID: RemoveSubscription

Tags:

- Subscription ID (Document)

Parameters:

- name: subscriptionID

In: path

Required/Optional: true

Description: Unique ID of the subscription to remove

Schema:

Type: string

pattern: '^([0-9]{5,6}-)?[^-]+$'

Responses:

'204' Expected response to a successful subscription removal

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'501': Reference 'TS29571_CommonData.yaml#/components/responses/501'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

components

securitySchemes

oAuth2ClientCredentials

Type: oauth2

Flows:

clientCredentials:

tokenUrl: '/oauth2/token'

scopes:

nnrf-nfm: Access to the Nnrf_NFManagement API

schemas

NFProfile

Type: object

Required:

- nfInstanceId
- nfType
- nfStatus

anyOf:

- required: [fqdn]
- required: [ipv4Addresses]
- required: [ipv6Addresses]

Properties:

nfInstanceId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

nfType:

Reference: '#/components/schemas/NFType'

nfStatus:

Reference: '#/components/schemas/NFStatus'

heartBeatTimer:

Type: integer

plmnList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

minItems: 1

sNssais:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

minItems: 1

nsiList:

Type: array

Items:

Type: string

minItems: 1

fqdn:

Reference: '#/components/schemas/Fqdn'

interPlmnFqdn:

Reference: '#/components/schemas/Fqdn'

ipv4Addresses:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

minItems: 1

ipv6Addresses:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'

minItems: 1

allowedPlmns:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

minItems: 1

allowedNfTypes:

Type: array

Items:

Reference: '#/components/schemas/NFType'

minItems: 1

allowedNfDomains:

Type: array

Items:

Type: string

minItems: 1

allowedNssais:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

minItems: 1

priority:

Type: integer

Minimum: 0

Maximum: 65535

capacity:

Type: integer

Minimum: 0

Maximum: 65535

load:

Type: integer

Minimum: 0

Maximum: 100

locality:

Type: string

udrInfo:

Reference: '#/components/schemas/UdrInfo'

udmInfo:

Reference: '#/components/schemas/UdmInfo'

ausfInfo:

Reference: '#/components/schemas/AusfInfo'

amfInfo:

Reference: '#/components/schemas/AmfInfo'

smfInfo:

Reference: '#/components/schemas/SmfInfo'

upfInfo:

Reference: '#/components/schemas/UpfInfo'

pcfInfo:

Reference: '#/components/schemas/PcfInfo'

bsfInfo:

Reference: '#/components/schemas/BsfInfo'

chfInfo:

Reference: '#/components/schemas/ChfInfo'

nrfInfo:

Reference: '#/components/schemas/NrfInfo'

customInfo:

Type: object

recoveryTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

nfServicePersistence:

Type: boolean

Default: false

nfServices:

Type: array

Items:

Reference: '#/components/schemas/NFService'

minItems: 1

NFService

Type: object

Required:

- serviceInstanceId
- serviceName
- versions
- scheme
- nfServiceStatus

Properties:

serviceInstanceId:

Type: string

serviceName:

Reference: '#/components/schemas/ServiceName'

versions:

Type: array

Items:

Reference: '#/components/schemas/NFServiceVersion'

minItems: 1

scheme:

Reference: 'TS29571_CommonData.yaml#/components/schemas/UriScheme'

nfServiceStatus:

Reference: '#/components/schemas/NFServiceStatus'

fqdn:

Reference: '#/components/schemas/Fqdn'

interPlmnFqdn:

Reference: '#/components/schemas/Fqdn'

ipEndPoints:

Type: array

Items:

Reference: '#/components/schemas/IpEndPoint'

minItems: 1

apiPrefix:

Type: string

defaultNotificationSubscriptions:

Type: array

Items:

Reference: '#/components/schemas/DefaultNotificationSubscription'

minItems: 1

allowedPlmns:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

minItems: 1

allowedNfTypes:

Type: array

Items:

Reference: '#/components/schemas/NFType'

minItems: 1

allowedNfDomains:

Type: array

Items:

Type: string

minItems: 1

allowedNssais:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

minItems: 1

priority:

Type: integer

Minimum: 0

Maximum: 65535

capacity:

Type: integer

Minimum: 0

Maximum: 65535

load:

Type: integer

Minimum: 0

Maximum: 100

recoveryTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

chfServiceInfo:

Reference: '#/components/schemas/ChfServiceInfo'

supportedFeatures:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

NFType

anyOf:

- type: string

enum:

- NRF
- UDM
- AMF
- SMF
- AUSF
- NEF
- PCF
- SMSF
- NSSF
- UDR
- LMF
- GMLC
- 5G_EIR
- SEPP
- UPF
- N3IWF
- AF
- UDSF
- BSF
- CHF
- NWDAF
- type: string

Fqdn

Type: string

IpEndPoint

Type: object

Properties:

ipv4Address:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

ipv6Address:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'

transport:

Reference: '#/components/schemas/TransportProtocol'

port:

Type: integer

Minimum: 0

Maximum: 65535

SubscriptionData

Type: object

Required:

- nfStatusNotificationUri

- subscriptionId

Properties:

nfStatusNotificationUri:

Type: string

subscrCond:

oneOf:

- $ref: '#/components/schemas/NfInstanceIdCond'

- $ref: '#/components/schemas/NfTypeCond'

- $ref: '#/components/schemas/ServiceNameCond'

- $ref: '#/components/schemas/AmfCond'

- $ref: '#/components/schemas/GuamiListCond'

- $ref: '#/components/schemas/NetworkSliceCond'

- $ref: '#/components/schemas/NfGroupCond'

subscriptionId:

Type: string

Pattern: '^([0-9]{5,6}-)?[^-]+$'

readOnly: true

validityTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

reqNotifEvents:

Type: array

Items:

Reference: '#/components/schemas/NotificationEventType'

minItems: 1

plmnId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

notifCondition:

Reference: '#/components/schemas/NotifCondition'

reqNfType:

Reference: '#/components/schemas/NFType'

reqNfFqdn:

Reference: '#/components/schemas/Fqdn'

NfInstanceIdCond

Type: object

Required:

- nfInstanceId

Properties:

nfInstanceId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

NfTypeCond

Type: object

Required:

- nfType

Properties:

nfType:

Reference: '#/components/schemas/NFType'

ServiceNameCond

Type: object

Required:

- serviceName

Properties:

serviceName:

Reference: '#/components/schemas/ServiceName'

AmfCond

Type: object

anyOf:

- required: [amfSetId]

- required: [amfRegionId]

Properties:

amfSetId:

Type: string

amfRegionId:

Type: string

GuamiListCond

Type: object

Required:

- guamiList

Properties:

guamiList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'

NetworkSliceCond

Type: object

Required:

- snssaiList

Properties:

snssaiList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

nsiList:

Type: array

Items:

Type: string

NfGroupCond

Type: object

Required:

- nfType

- nfGroupId

Properties:

nfType:

Type: string

enum:

- UDM

- AUSF

- UDR

nfGroupId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'

NotifCondition

Type: object

not:

Required: [monitoredAttributes, unmonitoredAttributes]

Properties:

monitoredAttributes:

Type: array

Items:

Type: string

minItems: 1

unmonitoredAttributes:

Type: array

Items:

Type: string

minItems: 1

UdrInfo

Type: object

Properties:

groupId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'

supiRanges:

Type: array

Items:

Reference: '#/components/schemas/SupiRange'

minItems: 1

gpsiRanges:

Type: array

Items:

Reference: '#/components/schemas/IdentityRange'

minItems: 1

externalGroupIdentifiersRanges:

Type: array

Items:

Reference: '#/components/schemas/IdentityRange'

minItems: 1

supportedDataSets:

Type: array

Items:

Reference: '#/components/schemas/DataSetId'

minItems: 1

SupiRange

Type: object

Properties:

start:

Type: string

Pattern: '^[0-9]+$'

end:

Type: string

Pattern: '^[0-9]+$'

Pattern:

Type: string

IdentityRange

Type: object

Properties:

start:

Type: string

Pattern: '^[0-9]+$'

end:

Type: string

Pattern: '^[0-9]+$'

Pattern:

Type: string

DataSetId

anyOf:

- type: string

enum:

- SUBSCRIPTION
- POLICY
- EXPOSURE
- APPLICATION
- type: string

UdmInfo

Type: object

Properties:

groupId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'

supiRanges:

Type: array

Items:

Reference: '#/components/schemas/SupiRange'

minItems: 1

gpsiRanges:

Type: array

Items:

Reference: '#/components/schemas/IdentityRange'

minItems: 1

externalGroupIdentifiersRanges:

Type: array

Items:

Reference: '#/components/schemas/IdentityRange'

minItems: 1

routingIndicators:

Type: array

Items:

Type: string

Pattern: '^[0-9]{1,4}$'

minItems: 1

AusfInfo

Type: object

Properties:

groupId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'

supiRanges:

Type: array

Items:

Reference: '#/components/schemas/SupiRange'

minItems: 1

routingIndicators:

Type: array

Items:

Type: string

Pattern: '^[0-9]{1,4}$'

minItems: 1

AmfInfo

Type: object

Required:

- amfSetId

- amfRegionId
- guamiList

Properties:

amfSetId:

Type: string

amfRegionId:

Type: string

guamiList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'

minItems: 1

taiList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'

minItems: 1

taiRangeList:

Type: array

Items:

Reference: '#/components/schemas/TaiRange'

minItems: 1

backupInfoAmfFailure:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'

minItems: 1

backupInfoAmfRemoval:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'

minItems: 1

n2InterfaceAmfInfo:

Reference: '#/components/schemas/N2InterfaceAmfInfo'

SmfInfo

Type: object

Required:

- sNssaiSmfInfoList

Properties:

sNssaiSmfInfoList:

Type: array

Items:

Reference: '#/components/schemas/SnssaiSmfInfoItem'

minItems: 1

taiList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'

minItems: 1

taiRangeList:

Type: array

Items:

Reference: '#/components/schemas/TaiRange'

minItems: 1

pgwFqdn:

Reference: '#/components/schemas/Fqdn'

accessType:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'

minItems: 1

SnssaiSmfInfoItem

Type: object

Required:

- sNssai
- dnnSmfInfoList

Properties:

sNssai:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

dnnSmfInfoList:

Type: array

Items:

Reference: '#/components/schemas/DnnSmfInfoItem'

minItems: 1

DnnSmfInfoItem

Type: object

Required:

- dnn

Properties:

dnn:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'

UpfInfo

Type: object

Required:

- sNssaiUpfInfoList

Properties:

sNssaiUpfInfoList:

Type: array

Items:

Reference: '#/components/schemas/SnssaiUpfInfoItem'

minItems: 1

smfServingArea:

Type: array

Items:

Type: string

minItems: 1

interfaceUpfInfoList:

Type: array

Items:

Reference: '#/components/schemas/InterfaceUpfInfoItem'

minItems: 1

iwkEpsInd:

Type: boolean

Default: false

SnssaiUpfInfoItem

Type: object

Required:

- sNssai

- dnnUpfInfoList

Properties:

sNssai:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

dnnUpfInfoList:

Type: array

Items:

Reference: '#/components/schemas/DnnUpfInfoItem'

minItems: 1

DnnUpfInfoItem

Type: object

Required:

- dnn

Properties:

dnn:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'

dnaiList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnai'

minItems: 1

InterfaceUpfInfoItem

Type: object

Required:

- interfaceType

Properties:

interfaceType:

Reference: '#/components/schemas/UPInterfaceType'

ipv4EndpointAddresses:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

minItems: 1

ipv6EndpointAddresses:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'

minItems: 1

endpointFqdn:

Reference: '#/components/schemas/Fqdn'

networkInstance:

Type: string

UPInterfaceType

anyOf:

- type: string

enum:

- N3
- N6
- N9
- type: string

PcfInfo

Type: object

Properties:

dnnList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'

minItems: 1

supiRanges:

Type: array

Items:

Reference: '#/components/schemas/SupiRange'

minItems: 1

rxDiamHost:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DiameterIdentity'

rxDiamRealm:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DiameterIdentity'

BsfInfo

Type: object

Properties:

dnnList:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'

minItems: 1

ipDomainList:

Type: array

Items:

Type: string

minItems: 1

ipv4AddressRanges:

Type: array

Items:

Reference: '#/components/schemas/Ipv4AddressRange'

minItems: 1

ipv6PrefixRanges:

Type: array

Items:

Reference: '#/components/schemas/Ipv6PrefixRange'

minItems: 1

ChfInfo

Type: object

Properties:

supiRangeList:

Type: array

Items:

Reference: '#/components/schemas/SupiRange'

minItems: 1

gpsiRangeList:

Type: array

Items:

Reference: '#/components/schemas/IdentityRange'

minItems: 1

plmnRangeList:

Type: array

Items:

Reference: '#/components/schemas/PlmnRange'

minItems: 1

Ipv4AddressRange

Type: object

Properties:

start:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

end:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

Ipv6PrefixRange

Type: object

Properties:

start:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'

end:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'

DefaultNotificationSubscription

Type: object

Required:

- notificationType

- callbackUri

Properties:

notificationType:

Reference: '#/components/schemas/NotificationType'

callbackUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

n1MessageClass:

Reference: 'TS29518_Namf_Communication.yaml#/components/schemas/N1MessageClass'

n2InformationClass:

Reference: 'TS29518_Namf_Communication.yaml#/components/schemas/N2InformationClass'

NotificationType

anyOf:

- type: string

enum:

- N1_MESSAGES

- N2_INFORMATION

- LOCATION_NOTIFICATION

- DATA_REMOVAL_NOTIFICATION

- DATA_CHANGE_NOTIFICATION

- type: string

TransportProtocol

anyOf:

- type: string

enum:

- TCP

- type: string

NotificationEventType

anyOf:

- type: string

enum:

- NF_REGISTERED

- NF_DEREGISTERED

- NF_PROFILE_CHANGED

- type: string

NotificationData

Type: object

Required:

- event

- nfInstanceUri

allOf:

- anyOf:

- not:

Properties:

event:

Type: string

enum:

- NF_PROFILE_CHANGED

- oneOf:

- required: [nfProfile]

- required: [profileChanges]

- anyOf:

- not:

Properties:

event:

Type: string

enum:

- NF_REGISTERED

- required: [nfProfile]

Properties:

event:

Reference: '#/components/schemas/NotificationEventType'

nfInstanceUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

nfProfile:

allOf:

- $ref: '#/components/schemas/NFProfile'

- not:

Required: [interPlmnFqdn]

- properties:

nfServices:

Type: array

Items:

allOf:

- $ref: '#/components/schemas/NFService'

- not:

Required: [interPlmnFqdn]

- not:

Required: [allowedPlmns]

- not:

Required: [allowedNfTypes]

- not:

Required: [allowedNfDomains]

- not:

Required: [allowedNssais]

profileChanges:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ChangeItem'

minItems: 1

NFStatus

anyOf:

- type: string

enum:

- REGISTERED

- SUSPENDED

- type: string

NFServiceVersion

Type: object

Required:

- apiVersionInUri

- apiFullVersion

Properties:

apiVersionInUri:

Type: string

apiFullVersion:

Type: string

expiry:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

ServiceName

anyOf:

- type: string

enum:

- nnrf-nfm

- nnrf-disc

- nudm-sdm

- nudm-uecm

- nudm-ueau

- nudm-ee

- nudm-pp

- namf-comm

- namf-evts

- namf-mt

- namf-loc

- nsmf-pdusession

- nsmf-event-exposure

- nausf-auth

- nausf-sorprotection

- nnef-pfdmanagement

- npcf-am-policy-control

- npcf-smpolicycontrol

- npcf-policyauthorization
- npcf-bdtpolicycontrol
- npcf-eventexposure
- npcf-ue-policy-control
- nsmsf-sms
- nnssf-nsselection
- nnssf-nssaiavailability
- nudr-dr
- nlmf-loc
- n5g-eir-eic
- nbsf-management
- nchf-spendinglimitcontrol
- nchf-convergedcharging
- nnwdaf-eventssubscription
- nnwdaf-analyticsinfo
- type: string

N2InterfaceAmfInfo

Type: object

Properties:

ipv4EndpointAddress:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

minItems: 1

ipv6EndpointAddress:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'

minItems: 1

amfName:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AmfName'

NFServiceStatus

anyOf:

- type: string

enum:

- REGISTERED
- SUSPENDED
- type: string

TaiRange

Type: object

Required:

- plmnId
- tacRangeList

Properties:

plmnId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'

tacRangeList:

Type: array

Items:

Reference: '#/components/schemas/TacRange'

minItems: 1

TacRange

Type: object

Properties:

start:

Type: string

Pattern: '^([A-Fa-f0-9]{4}|[A-Fa-f0-9]{6})$'

end:

Type: string

Pattern: '^([A-Fa-f0-9]{4}|[A-Fa-f0-9]{6})$'

Pattern:

Type: string

ChfServiceInfo

Type: object

not:

Required: [primaryChfServiceInstance, secondaryChfServiceInstance]

Properties:

primaryChfServiceInstance:

Type: string

secondaryChfServiceInstance:

Type: string

PlmnRange

Type: object

Properties:

start:

Type: string

Pattern: '^[0-9]{3}[0-9]{2,3}$'

end:

Type: string

Pattern: '^[0-9]{3}[0-9]{2,3}$'

Pattern:

Type: string

NrfInfo

Type: object

Properties:

servedUdrInfo:

Type: object

additionalProperties:

Reference: '#/components/schemas/UdrInfo'

minProperties: 1

servedUdmInfo:

Type: object

additionalProperties:

Reference: '#/components/schemas/UdmInfo'

minProperties: 1

servedAusfInfo:

Type: object

additionalProperties:

Reference: '#/components/schemas/AusfInfo'

minProperties: 1

servedAmfInfo:

Type: object

additionalProperties:

Reference: '#/components/schemas/AmfInfo'

minProperties: 1

servedSmfInfo:

Type: object

additionalProperties:

Reference: '#/components/schemas/SmfInfo'

minProperties: 1

servedUpfInfo:

Type: object

additionalProperties:

Reference: '#/components/schemas/UpfInfo'

minProperties: 1

servedPcfInfo:

Type: object

additionalProperties:

Reference: '#/components/schemas/PcfInfo'

minProperties: 1

servedBsfInfo:

Type: object

additionalProperties:

Reference: '#/components/schemas/BsfInfo'

minProperties: 1

servedChfInfo:

Type: object

additionalProperties:

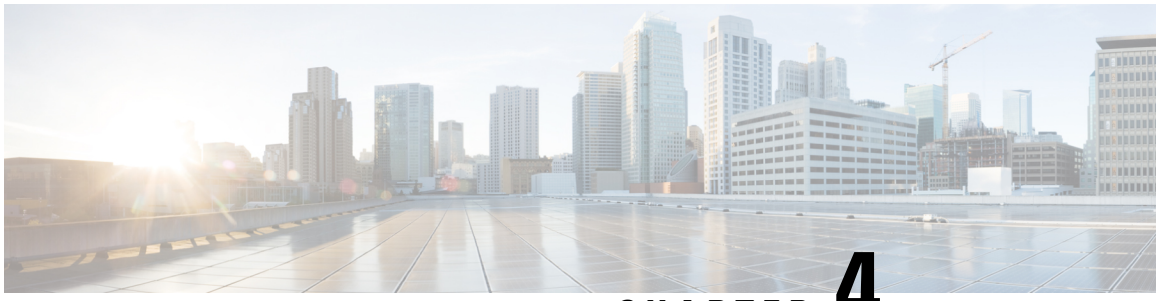
Reference: '#/components/schemas/ChfInfo'

minProperties: 1

externalDocs

Description: 3GPP TS 29.510 V15.2.0; 5G System; Network Function Repository Services; Stage 3

URL: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.510/'



CHAPTER 4

Npcf_SMPolicyControl

The Policy Control Function (PCF) uses the Npcf_SMPolicyControl service to create, update, and delete requests on the SMF.

- OpenAPI, on page 67
- info, on page 67
- externalDocs, on page 67
- security, on page 67
- servers, on page 68
- paths, on page 68
- components, on page 73

OpenAPI

OpenAPI Version: 3.0.0

info

Description: Session Management Policy Control Service

Version: "1.0.0"

Title: Npcf_SMPolicyControl

externalDocs

Description: 3GPP TS 29.512 V15.2.0; 5G System; Session Management Policy Control Service.

URL: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.512/'

security

- {}

- oAuth2Clientcredentials:

- npcf-smpolicycontrol

servers

URL: '{apiRoot}/npcf-smpolicycontrol/v1'

Variables:

API Root:

Default: https://example.com

Description: apiRoot as defined in subclause 4.4 of 3GPP TS 29.501

paths

/sm-policies

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SmPolicyContextData'

Responses:

'201' Created

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SmPolicyDecision'

Headers:

Location:

Description: 'Contains the URI of the newly created resource'

Required/Optional: true

Schema:

Type: string

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404' Not Found

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

Callbacks:

SmPolicyUpdateNotification:

'{$request.body#/notificationUri}/update':

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SmPolicyNotification'

Responses:

'200' OK. The current applicable values corresponding to the policy control request trigger is reported

Content:

Application/JSON:

Schema:

oneOf:

- $ref: '#/components/schemas/UeCampingRep'

- type: array

items:

Reference: '#/components/schemas/PartialSuccessReport'

minItems: 1

'204' No Content, Notification was succesfull

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/RuleReport'

'400' Bad Request.

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/ErrorReport'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

SmPolicyControlTerminationRequestNotification:

'{$request.body#/notificationUri}/terminate':

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/TerminationNotification'

Responses:

'204' No Content, Notification was succesful

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

/sm-policies/{smPolicyId}

get:

Parameters:

- name: smPolicyId

In: path

Description: Identifier of a policy association

Required/Optional: true

Schema:

Type: string

Responses:

'200' OK. Resource representation is returned

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SmPolicyControl'

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'406': Reference 'TS29571_CommonData.yaml#/components/responses/406'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

/sm-policies/{smPolicyId}/update

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SmPolicyUpdateContextData'

Parameters:

- name: smPolicyId

In: path

Description: Identifier of a policy association

Required/Optional: true

Schema:

Type: string

Responses:

'200' OK. Updated policies are returned

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SmPolicyDecision'

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

/sm-policies/{smPolicyId}/delete

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SmPolicyDeleteData'

Parameters:

- name: smPolicyId

In: path

Description: Identifier of a policy association

Required/Optional: true

Schema:

Type: string

Responses:

'204' No content

'400': Reference 'TS29571_CommonData.yaml#/components/responses/400'

'401': Reference 'TS29571_CommonData.yaml#/components/responses/401'

'403': Reference 'TS29571_CommonData.yaml#/components/responses/403'

'404': Reference 'TS29571_CommonData.yaml#/components/responses/404'

'411': Reference 'TS29571_CommonData.yaml#/components/responses/411'

'413': Reference 'TS29571_CommonData.yaml#/components/responses/413'

'415': Reference 'TS29571_CommonData.yaml#/components/responses/415'

'429': Reference 'TS29571_CommonData.yaml#/components/responses/429'

'500': Reference 'TS29571_CommonData.yaml#/components/responses/500'

'503': Reference 'TS29571_CommonData.yaml#/components/responses/503'

default: Reference 'TS29571_CommonData.yaml#/components/responses/default'

components

securitySchemes

oAuth2ClientCredentials

Type: oauth2

Flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

npcf-smpolicycontrol: Access to the Npcf_SMPolicyControl API

schemas

SmPolicyControl

Type: object

Properties:

context:

Reference: '#/components/schemas/SmPolicyContextData'

policy:

Reference: '#/components/schemas/SmPolicyDecision'

Required:

- context

- policy

SmPolicyContextData

Type: object

Properties:

accNetChId:

Reference: '#/components/schemas/AccNetChId'

chargEntityAddr:

Reference: '#/components/schemas/AccNetChargingAddress'

gpsi:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Gpsi'

supi:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'

interGrpIds:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'

minItems: 1

pduSessionId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PduSessionId'

pduSessionType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'

chargingcharacteristics:

Type: string

dnn:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'

notificationUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

accessType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'

ratType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'

servingNetwork:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NetworkId'

userLocationInfo:

Reference: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'

ueTimeZone:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TimeZone'

pei:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Pei'

ipv4Address:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

ipv6AddressPrefix:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'

ipDomain:

Type: string

Description: Indicates the IPv4 address domain

subsSessAmbr:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ambr'

subsDefQos:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SubscribedDefaultQos'

numOfPackFilter:

Type: integer

Description: Contains the number of supported packet filter for signalled QoS rules.

online:

Type: boolean

Description: If it is included and set to true, the online charging is applied to the PDU session.

offline:

Type: boolean

Description: If it is included and set to true, the offline charging is applied to the PDU session.

3gppPsDataOffStatus:

Type: boolean

Description: If it is included and set to true, the 3GPP PS Data Off is activated by the UE.

refQosIndication:

Type: boolean

Description: If it is included and set to true, the reflective QoS is supported by the UE.

traceReq:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'

sliceInfo:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'

qosFlowUsage:

Reference: '#/components/schemas/QosFlowUsage'

suppFeat:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

Required:

- supi
- pduSessionId
- pduSessionType
- dnn
- notificationUri
- sliceInfo

SmPolicyDecision

Type: object

Properties:

sessRules:

Type: object

additionalProperties:

Reference: '#/components/schemas/SessionRule'

minProperties: 1

Description: A map of Sessionrules with the content being the SessionRule as described in subclause 5.6.2.7.

pccRules:

Type: object

additionalProperties:

Reference: '#/components/schemas/PccRule'

minProperties: 1

Description: A map of PCC rules with the content being the PCCRule as described in subclause 5.6.2.6.

nullable: true

pcscfRestIndication:

Type: boolean

Description: If it is included and set to true, it indicates the P-CSCF Restoration is requested.

qosDecs:

Type: object

additionalProperties:

Reference: '#/components/schemas/QosData'

minProperties: 1

Description: Map of QoS data policy decisions.

chgDecs:

Type: object

additionalProperties:

Reference: '#/components/schemas/ChargingData'

minProperties: 1

Description: Map of Charging data policy decisions.

nullable: true

chargingInfo:

Reference: '#/components/schemas/ChargingInformation'

traffContDecs:

Type: object

additionalProperties:

Reference: '#/components/schemas/TrafficControlData'

minProperties: 1

Description: Map of Traffic Control data policy decisions.

umDecs:

Type: object

additionalProperties:

Reference: '#/components/schemas/UsageMonitoringData'

minProperties: 1

Description: Map of Usage Monitoring data policy decisions.

nullable: true

qosChars:

Type: object

additionalProperties:

Reference: '#/components/schemas/QosCharacteristics'

minProperties: 1

Description: Map of QoS characteristics for non standard 5QIs. This map uses the 5QI values as keys.

reflectiveQoSTimer:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'

conds:

Type: object

additionalProperties:

Reference: '#/components/schemas/ConditionData'

minProperties: 1

Description: A map of condition data with the content being as described in subclause 5.6.2.9.

nullable: true

revalidationTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

offline:

Type: boolean

Description: Indicates the offline charging is applicable to the PDU session or PCC rule.

online:

Type: boolean

Description: Indicates the online charging is applicable to the PDU session or PCC rule.

policyCtrlReqTriggers:

Type: array

Items:

Reference: '#/components/schemas/PolicyControlRequestTrigger'

minItems: 1

Description: Defines the policy control request triggers subscribed by the PCF.

nullable: true

lastReqRuleData:

Type: array

Items:

Reference: '#/components/schemas/RequestedRuleData'

minItems: 1

Description: Defines the last list of rule control data requested by the PCF.

lastReqUsageData:

Reference: '#/components/schemas/RequestedUsageData'

praInfos:

Type: object

additionalProperties:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PresenceInfoRm'

minProperties: 1

Description: Map of PRA information.

nullable: true

ipv4Index:

Reference: 'TS29519_ApplicationData.yaml#/components/schemas/IpIndex'

Description: Information that identifies which IP pool or external server is used to allocate the IPv4 address.

ipv6Index:

Reference: 'TS29519_ApplicationData.yaml#/components/schemas/IpIndex'

Description: Information that identifies which IP pool or external server is used to allocate the IPv6 address.

qosFlowUsage:

Reference: '#/components/schemas/QosFlowUsage'

suppFeat:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

SmPolicyNotification

Type: object

Properties:

resourceUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

smPolicyDecision:

Reference: '#/components/schemas/SmPolicyDecision'

PccRule

Type: object

Properties:

flowInfos:

Type: array

Items:

Reference: '#/components/schemas/FlowInformation'

minItems: 1

Description: An array of IP flow packet filter information.

appId:

Type: string

Description: A reference to the application detection filter configured at the UPF.

contVer:

Reference: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/ContentVersion'

pccRuleId:

Type: string

Description: Univocally identifies the PCC rule within a PDU session.

precedence:

Type: integer

Description: Determines the order in which this PCC rule is applied relative to other PCC rules within the same PDU session.

afSigProtocol:

Reference: '#/components/schemas/AfSigProtocol'

nullable: true

appReloc:

Type: boolean

Description: Indication of application relocation possibility.

refQosData:

Type: array

Items:

Type: string

minItems: 1

maxItems: 1

Description: A reference to the QoSData policy type decision type. It is the qosId described in subclause 5.6.2.8. (NOTE)

refTcData:

Type: array

Items:

Type: string

minItems: 1

maxItems: 1

Description: A reference to the TrafficControlData policy decision type. It is the tcId described in subclause 5.6.2.10. (NOTE)

refChgData:

Type: array

Items:

Type: string

minItems: 1

maxItems: 1

Description: A reference to the ChargingData policy decision type. It is the chgId described in subclause 5.6.2.11. (NOTE)

nullable: true

refUmData:

Type: array

Items:

Type: string

minItems: 1

maxItems: 1

Description: A reference to UsageMonitoringData policy decision type. It is the umId described in subclause 5.6.2.12. (NOTE)

nullable: true

refCondData:

Type: string

Description: A reference to the condition data. It is the condId described in subclause 5.6.2.9.

nullable: true

Required:

- pccRuleId

nullable: true

SessionRule

Type: object

Properties:

authSessAmbr:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ambr'

authDefQos:

Reference: '#/components/schemas/AuthorizedDefaultQos'

sessRuleId:

Type: string

Description: Univocally identifies the session rule within a PDU session.

refUmData:

Type: string

Description: A reference to UsageMonitoringData policy decision type. It is the umId described in subclause 5.6.2.12.

nullable: true

refCondData:

Type: string

Description: A reference to the condition data. It is the condId described in subclause 5.6.2.9.

nullable: true

Required:

- sessRuleId

nullable: true

QosData

Type: object

Properties:

qosId:

Type: string

Description: Univocally identifies the QoS control policy data within a PDU session.

5qi:

Reference: 'TS29571_CommonData.yaml#/components/schemas/5Qi'

maxbrUl:

Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRateRm'

maxbrDl:

Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRateRm'

gbrUl:

Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRateRm'

gbrDl:

Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRateRm'

arp:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Arp'

qnc:

Type: boolean

Description: Indicates whether notifications are requested from 3GPP NG-RAN when the GFBR can no longer (or again) be guaranteed for a QoS Flow during the lifetime of the QoS Flow.

priorityLevel:

Reference: 'TS29571_CommonData.yaml#/components/schemas/5QiPriorityLevelRm'

averWindow:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AverWindowRm'

maxDataBurstVol:

Reference: 'TS29571_CommonData.yaml#/components/schemas/MaxDataBurstVolRm'

reflectiveQos:

Type: boolean

Description: Indicates whether the QoS information is reflective for the corresponding service data flow.

sharingKeyDl:

Type: string

Description: Indicates, by containing the same value, what PCC rules may share resource in downlink direction.

sharingKeyUl:

Type: string

Description: Indicates, by containing the same value, what PCC rules may share resource in uplink direction.

maxPacketLossRateDl:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PacketLossRateRm'

maxPacketLossRateUl:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PacketLossRateRm'

defQosFlowIndication:

Type: boolean

Description: Indicates that the dynamic PCC rule shall always have its binding with the QoS Flow associated with the default QoS rule

Required:

- qosId

nullable: true

ConditionData

Type: object

Properties:

condId:

Type: string

Description: Uniquely identifies the condition data within a PDU session.

activationTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTimeRm'

deactivationTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTimeRm'

Required:

- condId

nullable: true

TrafficControlData

Type: object

Properties:

tcId:

Type: string

Description: Univocally identifies the traffic control policy data within a PDU session.

flowStatus:

Reference: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/FlowStatus'

redirectInfo:

Reference: '#/components/schemas/RedirectInformation'

muteNotif:

Type: boolean

Description: Indicates whether applicat'on's start or stop notification is to be muted.

trafficSteeringPolIdDl:

Type: string

Description: Reference to a pre-configured traffic steering policy for downlink traffic at the SMF.

nullable: true

trafficSteeringPolIdUl:

Type: string

Description: Reference to a pre-configured traffic steering policy for uplink traffic at the SMF.

nullable: true

routeToLocs:

Type: array

Items:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RouteToLocation'

minItems: 1

Description: A list of location which the traffic shall be routed to for the AF request

upPathChgEvent:

Reference: '#/components/schemas/UpPathChgEvent'

Required:

- tcId

nullable: true

ChargingData

Type: object

Properties:

chgId:

Type: string

Description: Univocally identifies the charging control policy data within a PDU session.

meteringMethod:

Reference: '#/components/schemas/MeteringMethod'

nullable: true

offline:

Type: boolean

Description: Indicates the offline charging is applicable to the PDU session or PCC rule.

online:

Type: boolean

Description: Indicates the online charging is applicable to the PDU session or PCC rule.

ratingGroup:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RatingGroup'

reportingLevel:

Reference: '#/components/schemas/ReportingLevel'

nullable: true

serviceId:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ServiceId'

sponsorId:

Type: string

Description: Indicates the sponsor identity.

appSvcProvId:

Type: string

Description: Indicates the application service provider identity.

afChargingIdentifier:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ChargingId'

Required:

- chgId

nullable: true

UsageMonitoringData

Type: object

Properties:

umId:

Type: string

Description: Univocally identifies the usage monitoring policy data within a PDU session.

volumeThreshold:

Reference: 'TS29122_CommonData.yaml#/components/schemas/VolumeRm'

volumeThresholdUplink:

Reference: 'TS29122_CommonData.yaml#/components/schemas/VolumeRm'

volumeThresholdDownlink:

Reference: 'TS29122_CommonData.yaml#/components/schemas/VolumeRm'

timeThreshold:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSecRm'

monitoringTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTimeRm'

nextVolThreshold:

Reference: 'TS29122_CommonData.yaml#/components/schemas/VolumeRm'

nextVolThresholdUplink:

Reference: 'TS29122_CommonData.yaml#/components/schemas/VolumeRm'

nextVolThresholdDownlink:

Reference: 'TS29122_CommonData.yaml#/components/schemas/VolumeRm'

nextTimeThreshold:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSecRm'

inactivityTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSecRm'

exUsagePccRuleIds:

Type: array

Items:

Type: string

minItems: 1

Description: Contains the PCC rule identifier(s) which corresponding service data flow(s) shall be excluded from PDU Session usage monitoring. It is only included in the UsageMonitoringData instance for session level usage monitoring.

nullable: true

Required:

- umId

nullable: true

RedirectInformation

Type: object

Properties:

redirectEnabled:

Type: boolean

Description: Indicates the redirect is enable.

redirectAddressType:

Reference: '#/components/schemas/RedirectAddressType'

redirectServerAddress:

Type: string

Description: Indicates the address of the redirect server.

FlowInformation

Type: object

Properties:

flowDescription:

Reference: '#/components/schemas/FlowDescription'

ethFlowDescription:

Reference: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'

Description: Defines a packet filter for an Ethernet flow. "fDir" attribute is not applicable.

packFiltId:

Type: string

Description: An identifier of packet filter.

packetFilterUsage:

Type: boolean

Description: The packet shall be sent to the UE.

tosTrafficClass:

Type: string

Description: Contains the Ipv4 Type-of-Service and mask field or the Ipv6 Traffic-Class field and mask field.

nullable: true

spi:

Type: string

Description: the security parameter index of the IPSec packet.

nullable: true

flowLabel:

Type: string

Description: the Ipv6 flow label header field.

nullable: true

flowDirection:

Reference: '#/components/schemas/FlowDirectionRm'

SmPolicyDeleteData

Type: object

Properties:

userLocationInfo:

Reference: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'

ueTimeZone:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TimeZone'

servingNetwork:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NetworkId'

userLocationInfoTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

ranNasRelCauses:

Type: array

Items:

Reference: '#/components/schemas/RanNasRelCause'

minItems: 1

Description: Contains the RAN and/or NAS release cause.

accuUsageReports:

Type: array

Items:

Reference: '#/components/schemas/AccuUsageReport'

minItems: 1

Description: Contains the usage report

QosCharacteristics

Type: object

Properties:

5qi:

Reference: 'TS29571_CommonData.yaml#/components/schemas/5Qi'

resourceType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/QosResourceType'

priorityLevel:

Reference: 'TS29571_CommonData.yaml#/components/schemas/5QiPriorityLevel'

packetDelayBudget:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PacketDelBudget'

packetErrorRate:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PacketErrRate'

averagingWindow:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AverWindow'

maxDataBurstVol:

Reference: 'TS29571_CommonData.yaml#/components/schemas/MaxDataBurstVol'

Required:

- 5qi
- resourceType
- priorityLevel
- packetDelayBudget
- packetErrorRate

ChargingInformation

Type: object

Properties:

primaryChfAddress:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

secondaryChfAddress:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

Required:

- primaryChfAddress

- secondaryChfAddress

AccuUsageReport

Type: object

Properties:

refUmIds:

Type: string

Description: An id referencing UsageMonitoringData objects associated with this usage report.

volUsage:

Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'

volUsageUplink:

Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'

volUsageDownlink:

Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'

timeUsage:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'

nextVolUsage:

Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'

nextVolUsageUplink:

Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'

nextVolUsageDownlink:

Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'

nextTimeUsage:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'

Required:

- refUmIds

SmPolicyUpdateContextData

Type: object

Properties:

repPolicyCtrlReqTriggers:

Type: array

Items:

Reference: '#/components/schemas/PolicyControlRequestTrigger'

minItems: 1

Description: The policy control reqeust trigges which are met.

accNetChIds:

Type: array

Items:

Reference: '#/components/schemas/AccNetChId'

minItems: 1

Description: Indicates the access network charging identifier for the PCC rule(s) or whole PDU session.

accessType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'

ratType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'

servingNetwork:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NetworkId'

userLocationInfo:

Reference: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'

ueTimeZone:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TimeZone'

relIpv4Address:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

ipv4Address:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

ipv6AddressPrefix:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'

relIpv6AddressPrefix:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'

relUeMac:

Reference: 'TS29571_CommonData.yaml#/components/schemas/MacAddr48'

ueMac:

Reference: 'TS29571_CommonData.yaml#/components/schemas/MacAddr48'

subsSessAmbr:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ambr'

subsDefQos:

Reference: 'TS29571_CommonData.yaml#/components/schemas/SubscribedDefaultQos'

numOfPackFilter:

Type: integer

Description: Contains the number of supported packet filter for signalled QoS rules.

accuUsageReports:

Type: array

Items:

Reference: '#/components/schemas/AccuUsageReport'

minItems: 1

Description: Contains the usage report

3gppPsDataOffStatus:

Type: boolean

Description: If it is included and set to true, the 3GPP PS Data Off is activated by the UE.

appDetectionInfos:

Type: array

Items:

Reference: '#/components/schemas/AppDetectionInfo'

minItems: 1

Description: Report the start/stop of the application traffic and detected SDF descriptions if applicable.

ruleReports:

Type: array

Items:

Reference: '#/components/schemas/RuleReport'

minItems: 1

Description: Used to report the PCC rule failure.

qncReports:

Type: array

Items:

Reference: '#/components/schemas/QosNotificationControlInfo'

minItems: 1

Description: QoS Notification Control information.

userLocationInfoTime:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'

repPraInfos:

Type: object

additionalProperties:

Reference: 'TS29571_CommonData.yaml#/components/schemas/PresenceInfo'

minProperties: 1

Description: Reports the changes of presence reporting area.

ueInitResReq:

Reference: '#/components/schemas/UeInitiatedResourceRequest'

Description: Indicates a UE requests specific QoS handling for selected SDF.

refQosIndication:

Type: boolean

Description: If it is included and set to true, the reflective QoS is supported by the UE. If it is included and set to false, the reflective QoS is revoked by the UE.

qosFlowUsage:

Reference: '#/components/schemas/QosFlowUsage'

traceReq:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'

UpPathChgEvent

Type: object

Properties:

notificationUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

notifCorreId:

Type: string

Description: It is used to set the value of Notification Correlation ID in the notification sent by the SMF.

dnaiChgType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/DnaiChangeType'

Required:

- notificationUri

- notifCorreId

- dnaiChgType

nullable: true

TerminationNotification

Type: object

Properties:

resourceUri:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'

cause:

Reference: 'TS29507_Npcf_AMPolicyControl.yaml#/components/schemas/PolicyAssociationReleaseCause'

Required:

- resourceUri

- cause

AppDetectionInfo :

Type: object

Properties:

appId:

Type: string

Description: A reference to the application detection filter configured at the UPF

instanceId:

Type: string

Description: Identifier dynamically assigned by the SMF in order to allow correlation of application Start and Stop events to the specific service data flow description, if service data flow descriptions are deducible.

sdfDescriptions:

Type: array

Items:

Reference: '#/components/schemas/FlowInformation'

minItems: 1

Description: Contains the detected service data flow descriptions if they are deducible.

Required:

- appId

AccNetChId

Type: object

Properties:

accNetChaIdValue:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ChargingId'

refPccRuleIds:

Type: array

Items:

Type: string

minItems: 1

Description: Contains the identifier of the PCC rule(s) associated to the provided Access Network Charging Identifier.

sessionChScope:

Type: boolean

Description: When it is included and set to true, indicates the Access Network Charging Identifier applies to the whole PDU Session

Required:

- accNetChaIdValue

AccNetChargingAddress

Description: Describes the network entity within the access network performing charging

Type: object

anyOf:

- required: [anChargIpv4Addr]

- required: [anChargIpv6Addr]

Properties:

anChargIpv4Addr:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'

anChargIpv6Addr:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'

RequestedRuleData

Type: object

Properties:

refPccRuleIds:

Type: array

Items:

Type: string

minItems: 1

Description: An array of PCC rule id references to the PCC rules associated with the control data.

reqData:

Type: array

Items:

Reference: '#/components/schemas/RequestedRuleDataType'

minItems: 1

Description: Array of requested rule data type elements indicating what type of rule data is requested for the corresponding referenced PCC rules.

Required:

- refPccRuleIds

- reqData

RequestedUsageData

Type: object

Properties:

refUmIds:

Type: array

Items:

Type: string

minItems: 1

Description: An array of usage monitoring data id references to the usage monitoring data instances for which the PCF is requesting a usage report. This attribute shall only be provided when allUmIds is not set to true.

allUmIds:

Type: boolean

Description: Th ooleanean indicates whether requested usage data applies to all usage monitoring data instances. When it's not included, it means requested usage data shall only apply to the usage monitoring data instances referenced by the refUmIds attribute.

UeCampingRep

Type: object

Properties:

accessType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'

Description: The Access Type where the served UE is camping

ratType:

Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'

servingNetwork:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NetworkId'

userLocationInfo:

Reference: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'

ueTimeZone:

Reference: 'TS29571_CommonData.yaml#/components/schemas/TimeZone'

RuleReport

Type: object

Properties:

pccRuleIds:

Type: array

Items:

Type: string

minItems: 1

Description: Contains the identifier of the affected PCC rule(s).

ruleStatus:

Reference: '#/components/schemas/RuleStatus'

Description: Indicates the status of the PCC rule(s).

contVers:

Type: array

Items:

Reference: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/ContentVersion'

minItems: 1

Description: Indicates the version of a PCC rule.

failureCode:

Reference: '#/components/schemas/FailureCode'

Description: Indicates the reason tha the PCC Rule is being reported.

finUnitAct:

Reference: 'TS32291_Nchf_ConvergedCharging.yaml#/components/schemas/FinalUnitAction'

Description: Contains the related filter parameters and redirect address parameters (if available), when the user's account cannot cover the service cost.

ranNasRelCauses:

Type: array

Items:

Reference: '#/components/schemas/RanNasRelCause'

minItems: 1

Description: indicates the RAN or NAS release cause code information.

Required:

- pccRuleIds

- ruleStatus

- failureCode

RanNasRelCause

Type: object

Properties:

ngApCause:

Reference: 'TS29571_CommonData.yaml#/components/schemas/NgApCause'

Description: Indicate the cause value for NGAP protocol.

5gMmCause:

Reference: 'TS29571_CommonData.yaml#/components/schemas/5GMmCause'

Description: Indicate the cause value for 5GMM protocol.

5gSmCause:

Reference: '#/components/schemas/5GSmCause'

Description: Indicate the cause value for 5GSM protocol.

UeInitiatedResourceRequest

Type: object

Properties:

packFiltOp:

Reference: '#/components/schemas/PacketFilterOperation'

Description: Indicates a UE requests specific QoS handling for selected SDF.

packFiltInfo:

Type: array

Items:

Reference: '#/components/schemas/PacketFilterInfo'

Description: Contains the information from a single packet filter sent from the SMF to the PCF.

minItems: 1

reqQos:

Reference: '#/components/schemas/RequestedQos'

Description: Contains the QoS information requested by the UE.

Required:

- packFiltOp

- packFiltInfo

PacketFilterInfo

Type: object

Properties:

packFiltId:

Type: string

Description: An identifier of packet filter.

precedence:

Type: integer

Description: The requested order for the PCC rule generated fromt the packet fitler information.

packFiltCont:

Reference: '#/components/schemas/PacketFilterContent'

Description: Contains the content of the packet filter as requested by the UE and required by the PCF to create the PCC rules.

tosTrafficClass:

Type: string

Description: Contains the Ipv4 Type-of-Service and mask field or the Ipv6 Traffic-Class field and mask field.

spi:

Type: string

Description: The security parameter index of the IPSec packet.

flowLabel:

Type: string

Description: The Ipv6 flow label header field.

flowDirection:

Reference: '#/components/schemas/FlowDirection'

Description: Indicates the direction/directions that a filter is applicable, downlink only, uplink only or both down- and uplink (bidirectional).

RequestedQos

Type: object

Properties:

5qi:

Reference: 'TS29571_CommonData.yaml#/components/schemas/5Qi'

Description: Identifier for the authorized QoS parameters for the service data flow.

gbrUl:

Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRate'

Description: Indicates the guaranteed bandwidth in uplink requested by the UE.

gbrDl:

Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRate'

Description: Indicates the guaranteed bandwidth in downlink requested by the UE.

Required:

- 5qi

QosNotificationControlInfo

Type: object

Properties:

refPccRuleIds:

Type: array

Items:

Type: string

minItems: 1

Description: An array of PCC rule id references to the PCC rules associated with the QoS notification control info.

notifType:

Reference: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/QosNotifType'

contVer:

Reference: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/ContentVersion'

Required:

- refPccRuleIds
- notifType

PartialSuccessReport

Type: object

Properties:

failureCause:

Type: string

Description: Application error cause specific to this report.

ruleReports:

Type: array

Items:

Reference: '#/components/schemas/RuleReport'

minItems: 1

Description: Information about the PCC rules provisioned by the PCF not successfully installed/activated.

ueCampingRep:

Reference: '#/components/schemas/UeCampingRep'

Description: Includes the current applicable values corresponding to the provisioned policy control request triggers.

Required:

- failureCause

- ruleReports

AuthorizedDefaultQos

Type: object

Properties:

5qi:

Reference: 'TS29571_CommonData.yaml#/components/schemas/5Qi'

Description: Identifier for the 5QI.

arp:

Reference: 'TS29571_CommonData.yaml#/components/schemas/Arp'

priorityLevel:

Reference: 'TS29571_CommonData.yaml#/components/schemas/5QiPriorityLevelRm'

averWindow:

Reference: 'TS29571_CommonData.yaml#/components/schemas/AverWindowRm'

maxDataBurstVol:

Reference: 'TS29571_CommonData.yaml#/components/schemas/MaxDataBurstVolRm'

ErrorReport

Type: object

Properties:

error:

Reference: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

ruleReports:

Type: array

Items:

Reference: '#/components/schemas/RuleReport'

minItems: 1

Description: Used to report the PCC rule failure.

5GSmCause

Reference: 'TS29571_CommonData.yaml#/components/schemas/Uinteger'

Description: Indicating the cause value of 5GSM protocol.

PacketFilterContent

Type: string

Description: Defines a packet filter for an IP flow.Refer to subclause 5.3.54 of 3GPP TS 29.212 [23] for encoding.

FlowDescription

Type: string

Description: Defines a packet filter for an IP flow.Refer to subclause 5.4.2 of 3GPP TS 29.212 [23] for encoding.

FlowDirection

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- DOWNLINK: The corresponding filter applies for traffic to the UE.

- UPLINK: The corresponding filter applies for traffic from the UE.

- BIDIRECTIONAL: The corresponding filter applies for traffic both to and from the UE.

- UNSPECIFIED: The corresponding filter applies for traffic to the UE (downlink), but has no specific direction declared. The service data flow detection shall apply the filter for uplink traffic as if the filter was bidirectional. The PCF shall not use the value UNSPECIFIED in filters created by the network in NW-initiated procedures. The PCF shall only include the value UNSPECIFIED in filters in UE-initiated procedures if the same value is received from the SMF.

FlowDirectionRm

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- DOWNLINK: The corresponding filter applies for traffic to the UE.

- UPLINK: The corresponding filter applies for traffic from the UE.

- BIDIRECTIONAL: The corresponding filter applies for traffic both to and from the UE.

- UNSPECIFIED: The corresponding filter applies for traffic to the UE (downlink), but has no specific direction declared. The service data flow detection shall apply the filter for uplink traffic as if the filter was bidirectional. The PCF shall not use the value UNSPECIFIED in filters created by the network in NW-initiated procedures. The PCF shall only include the value UNSPECIFIED in filters in UE-initiated procedures if the same value is received from the SMF.

nullable: true

ReportingLevel

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- SER_ID_LEVEL: Indicates that the usage shall be reported on service id and rating group combination level.

- RAT_GR_LEVEL: Indicates that the usage shall be reported on rating group level.

- SPON_CON_LEVEL: Indicates that the usage shall be reported on sponsor identity and rating group combination level.

MeteringMethod

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- DURATION: Indicates that the duration of the service data flow traffic shall be metered.

- VOLUME: Indicates that volume of the service data flow traffic shall be metered.

- DURATION_VOLUME: Indicates that the duration and the volume of the service data flow traffic shall be metered.

- EVENT: Indicates that events of the service data flow traffic shall be metered.

PolicyControlRequestTrigger

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- PLMN_CH: PLMN Change

- RES_MO_RE: A request for resource modification has been received by the SMF. The SMF always reports to the PCF.

- AC_TY_CH: Access Type Change

- UE_IP_CH: UE IP address change. The SMF always reports to the PCF.

- UE_MAC_CH: A new UE MAC address is detected or a used UE MAC address is inactive for a specific period

- AN_CH_COR: Access Network Charging Correlation Information

- US_RE: The PDU Session or the Monitoring key specific resources consumed by a UE either reached the threshold or needs to be reported for other reasons.

- APP_STA: The start of application traffic has been detected.

- APP_STO: The stop of application traffic has been detected.

- AN_INFO: Access Network Information report

- CM_SES_FAIL: Credit management session failure

- PS_DA_OFF: The SMF reports when the 3GPP PS Data Off status changes. The SMF always reports to the PCF.

- DEF_QOS_CH: Default QoS Change. The SMF always reports to the PCF.

- SE_AMBR_CH: Session AMBR Change. The SMF always reports to the PCF.

- QOS_NOTIF: The SMF notify the PCF when receiving notification from RAN that QoS targets of the QoS Flow cannot be guranteed or gurateed again.

- NO_CREDIT: Out of credit

- PRA_CH: Change of UE presence in Presence Reporting Area

- SAREA_CH: Location Change with respect to the Serving Area

- SCNN_CH: Location Change with respect to the Serving CN node

- RE_TIMEOUT: Indicates the SMF generated the request because there has been a PCC revalidation timeout

- RES_RELEASE: Indicate that the SMF can inform the PCF of the outcome of the release of resources for those rules that require so.

- SUCC_RES_ALLO: Indicates that the requested rule data is the successful resource allocation.

- RAT_TY_CH: RAT Type Change.

- REF_QOS_IND_CH: Reflective QoS indication Change

RequestedRuleDataType

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- CH_ID: Indicates that the requested rule data is the charging identifier.

- MS_TIME_ZONE: Indicates that the requested access network info type is the UE's timezone.

- USER_LOC_INFO: Indicates that the requested access network info type is the UE's location.

- RES_RELEASE: Indicates that the requested rule data is the result of the release of resource.

- SUCC_RES_ALLO: Indicates that the requested rule data is the successful resource allocation.

RuleStatus

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- ACTIVE: Indicates that the PCC rule(s) are successfully installed (for those provisioned from PCF) or activated (for those pre-defined in SMF), or the session rule(s) are successfully installed

- INACTIVE: Indicates that the PCC rule(s) are removed (for those provisioned from PCF) or inactive (for those pre-defined in SMF) or the session rule(s) are removed.

FailureCode

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- UNK_RULE_ID: Indicates that the pre-provisioned PCC rule could not be successfully activated because the PCC rule identifier is unknown to the SMF.

- RA_GR_ERR: Indicate that the PCC rule could not be successfully installed or enforced because the Rating Group specified within the Charging Data policy decision which the PCC rule refers to is unknown or, invalid.

- SER_ID_ERR: Indicate that the PCC rule could not be successfully installed or enforced because the Service Identifier specified within the Charging Data policy decision which the PCC rule refers to is invalid, unknown, or not applicable to the service being charged.

- NF_MAL: Indicate that the PCC rule could not be successfully installed (for those provisioned from the PCF) or activated (for those pre-defined in SMF) or enforced (for those already successfully installed) due to SMF/UPF malfunction.

- RES_LIM: Indicate that the PCC rule could not be successfully installed (for those provisioned from PCF) or activated (for those pre-defined in SMF) or enforced (for those already successfully installed) due to a limitation of resources at the SMF/UPF.

- MAX_NR_QoS_FLOW: Indicate that the PCC rule could not be successfully installed (for those provisioned from PCF) or activated (for those pre-defined in SMF) or enforced (for those already successfully installed) due to the fact that the maximum number of QoS flows has been reached for the PDU session.

- MISS_FLOW_INFO: Indicate that the PCC rule could not be successfully installed or enforced because the Flow Information AVP is not specified within the "pccRule" attribute by the PCF during the first install request of the PCC rule.

- RES_ALLO_FAIL: Indicate that the PCC rule could not be successfully installed or maintained since the QoS flow establishment/modification failed, or the QoS flow was released.

- UNSUCC_QOS_VAL: indicate that the QoS validation has failed or when Guaranteed Bandwidth > Max-Requested-Bandwidth.

- INCOR_FLOW_INFO: Indicate that the PCC rule could not be successfully installed or modified at the SMF because the provided flow information is not supported by the network (e.g. the provided IP address(es) or Ipv6 prefix(es) do not correspond to an IP version applicable for the PDU session).

- PS_TO_CS_HAN: Indicate that the PCC rule could not be maintained because of PS to CS handover.

- APP_ID_ERR: Indicate that the rule could not be successfully installed or enforced because the Application Identifier is invalid, unknown, or not applicable to the application required for detection.

- NO_QOS_FLOW_BOUND: Indicate that there is no QoS flow which the SMF can bind the PCC rule(s) to.

- FILTER_RES: Indicate that the Flow Information cannot be handled by the SMF because any of the restrictions was not met.

- MISS_REDI_SER_ADDR: Indicate that the PCC rule could not be successfully installed or enforced at the SMF because there is no valid Redirect Server Address within the Traffic Control Data policy decision which the PCC rule refers to provided by the PCF and no preconfigured redirection address for this PCC rule at the SMF.

- CM_END_USER_SER_DENIED: Indicate that the charging system denied the service request due to service restrictions (e.g. terminate rating group) or limitations related to the end-user, for example the end-user's account could not cover the requested service.

- CM_CREDIT_CON_NOT_APP: Indicate that the charging system determined that the service can be granted to the end user but no further credit control is needed for the service (e.g. service is free of charge or is treated for offline charging).

- CM_AUTH_REJ: Indicate that the charging system denied the service request in order to terminate the service for which credit is requested.

- CM_USER_UNK: Indicate that the specified end user could not be found in the charging system.

- CM_RAT_FAILED: Indicate that the charging system cannot rate the service request due to insufficient rating input, incorrect AVP combination or due to an attribute or an attribute value that is not recognized or supported in the rating.

- SESS_AMBR_FAILURE: Indicate that the session AMBR update is failure.

- DEF_QOS_FAILURL: Indicate that the default QoS update is failure.

AfSigProtocol

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- NO_INFORMATION: Indicate that no information about the AF signalling protocol is being provided.

- SIP: Indicate that the signalling protocol is Session Initiation Protocol.

PacketFilterOperation

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- DELETION: Indicates that the resources reserved for the provided packet filter identifiers are to be deleted and are no longer used by the UE.

- ADDITION: Indicates that the UE requests resources allocated for the provided packet filters.

- MODIFICATION: Indicates that the reserved QoS, the filter, the precedence, or any of the fields for the provided packet filter identifiers are being modified.

RedirectAddressType

anyOf:

- type: string

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

Possible values are

- IPV4_ADDR: Indicates that the address type is in the form of "dotted-decimal" IPv4 address.
- IPV6_ADDR: Indicates that the address type is in the form of IPv6 address.
- URL: Indicates that the address type is in the form of Uniform Resource Locator.
- SIP_URI: Indicates that the address type is in the form of SIP Uniform Resource Identifier.

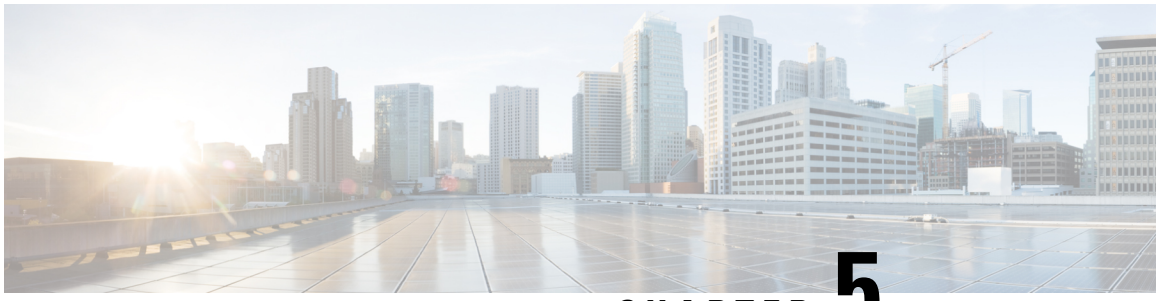
QosFlowUsage

anyOf:

- type: string

This string provides forward-compatibility with future
extensions to the enumeration but is not used to encode
content defined in the present version of this API.
Possible values are

- GENERAL: Indicate no specific QoS flow usage information is available.
- IMS_SIG: Indicate that the QoS flow is used for IMS signalling only.



CHAPTER 5

Nchf_SpendingLimitControl

The Nchf_SpendingLimitControl service enables the NF service consumer to retrieve policy counter status information per UE from the CHF by subscribing to spending limit reporting (that is notifications of policy counter status changes).

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- externalDocs, on page 109
- security, on page 109
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OpenAPI

OpenAPI Version: 3.0.0

info

Description: Spending Limit Control Service API

Version: "1.0.0"

Title: Nchf_SpendingLimitControl

externalDocs

Description: 3GPP TS 29.594 V15.2.0; 5G System; Spending Limit Control Service.

URL: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.594/'

security

- {}

- oAuth2ClientCredentials:

- nchf-spendinglimitcontrol

servers

URL: 'http://{apiRoot}/nchf-spendinglimitcontrol/v1'

Variables:

API Root:

Default: https://example.com

Description: apiRoot as defined in subclause subclause 4.4 of 3GPP TS 29.501

paths

/subscriptions

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SpendingLimitContext'

Responses:

'201' Success

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SpendingLimitStatus'

Headers:

Location:

Description: 'Contains the URI of the created individual spending limit resource, according to the structure: {apiRoot}/nchf-spendinglimitcontrol/v1/subscriptions/{subscriptionId}'

Required/Optional: true

Schema:

Type: string

'400': Reference './TS29571_CommonData.yaml#/components/responses/400'

'401': Reference './TS29571_CommonData.yaml#/components/responses/401'

'403': Reference './TS29571_CommonData.yaml#/components/responses/403'

'404': Reference './TS29571_CommonData.yaml#/components/responses/404'

'411': Reference './TS29571_CommonData.yaml#/components/responses/411'

'413': Reference './TS29571_CommonData.yaml#/components/responses/413'

'415': Reference './TS29571_CommonData.yaml#/components/responses/415'

'429': Reference './TS29571_CommonData.yaml#/components/responses/429'

'500': Reference './TS29571_CommonData.yaml#/components/responses/500'

'503': Reference './TS29571_CommonData.yaml#/components/responses/503'

default: Reference './TS29571_CommonData.yaml#/components/responses/default'

Callbacks:

statusNotification:

'{$request.body#/notifUri}/notify':

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SpendingLimitStatus'

Responses:

'204' No Content, Notification was succesfull

'400': Reference './TS29571_CommonData.yaml#/components/responses/400'

'401': Reference './TS29571_CommonData.yaml#/components/responses/401'

'403': Reference './TS29571_CommonData.yaml#/components/responses/403'

'404': Reference './TS29571_CommonData.yaml#/components/responses/404'

'411': Reference './TS29571_CommonData.yaml#/components/responses/411'

'413': Reference './TS29571_CommonData.yaml#/components/responses/413'

'415': Reference './TS29571_CommonData.yaml#/components/responses/415'

'429': Reference './TS29571_CommonData.yaml#/components/responses/429'

'500': Reference './TS29571_CommonData.yaml#/components/responses/500'

'503': Reference './TS29571_CommonData.yaml#/components/responses/503'

default: Reference './TS29571_CommonData.yaml#/components/responses/default'

subscriptionTermination:

'{$request.body#/notifUri}/terminate':

Method: Post

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SubscriptionTerminationInfo'

Responses:

'204' No Content, Notification was succesfull

'400': Reference './TS29571_CommonData.yaml#/components/responses/400'

'401': Reference './TS29571_CommonData.yaml#/components/responses/401'

'403': Reference './TS29571_CommonData.yaml#/components/responses/403'

'404': Reference './TS29571_CommonData.yaml#/components/responses/404'

'411': Reference './TS29571_CommonData.yaml#/components/responses/411'

'413': Reference './TS29571_CommonData.yaml#/components/responses/413'

'415': Reference './TS29571_CommonData.yaml#/components/responses/415'

'429': Reference './TS29571_CommonData.yaml#/components/responses/429'

'500': Reference './TS29571_CommonData.yaml#/components/responses/500'

'503': Reference './TS29571_CommonData.yaml#/components/responses/503'

default: Reference './TS29571_CommonData.yaml#/components/responses/default'

/subscriptions/{subscriptionId}

Parameters:

- in: path

name: subscriptionId

Description: Identifies an individual spending limit retrieval subscription.

Required/Optional: true

Schema:

Type: string

put:

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SpendingLimitContext'

Responses:

'200' OK. Resource was succesfully modified and representation is returned

Content:

Application/JSON:

Schema:

Reference: '#/components/schemas/SpendingLimitStatus'

'400': Reference './TS29571_CommonData.yaml#/components/responses/400'

'401': Reference './TS29571_CommonData.yaml#/components/responses/401'

'403': Reference './TS29571_CommonData.yaml#/components/responses/403'

'404': Reference './TS29571_CommonData.yaml#/components/responses/404'

'411': Reference './TS29571_CommonData.yaml#/components/responses/411'

'413': Reference './TS29571_CommonData.yaml#/components/responses/413'

'415': Reference './TS29571_CommonData.yaml#/components/responses/415'

'429': Reference './TS29571_CommonData.yaml#/components/responses/429'

'500': Reference './TS29571_CommonData.yaml#/components/responses/500'

'503': Reference './TS29571_CommonData.yaml#/components/responses/503'

default: Reference './TS29571_CommonData.yaml#/components/responses/default'

delete:

Responses:

'204' No Content. Resource was succesfully deleted

'400': Reference './TS29571_CommonData.yaml#/components/responses/400'

'401': Reference './TS29571_CommonData.yaml#/components/responses/401'

'403': Reference './TS29571_CommonData.yaml#/components/responses/403'

'404': Reference './TS29571_CommonData.yaml#/components/responses/404'

'429': Reference './TS29571_CommonData.yaml#/components/responses/429'

'500': Reference './TS29571_CommonData.yaml#/components/responses/500'

'503': Reference './TS29571_CommonData.yaml#/components/responses/503'

default: Reference './TS29571_CommonData.yaml#/components/responses/default'

components

securitySchemes

oAuth2ClientCredentials

Type: oauth2

Flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

nchf-spendinglimitcontrol: Access to the Nchf_SpendingLimitControl API

schemas

SpendingLimitContext

Type: object

Properties:

supi:

Description: The Subscription Permanent Identifier (Supi) shall be present within the initial spending limit retrieval procedure (creation of a new individual subscription).

Reference: './TS29571_CommonData.yaml#/components/schemas/Supi'

gpsi:

Description: The Generic Public Subscription Identifier (Gpsi) may be present within the initial spending limit retrieval procedure (creation of a new individual subscription).

Reference: './TS29571_CommonData.yaml#/components/schemas/Gpsi'

policyCounterIds:

Type: array

Items:

Reference: '#/components/schemas/PolicyCounterId'

minItems: 1

Description: This is a list of policy counter identifier(s), which identifies policy counters maintained per subscriber within the CHF.

notifUri:

Description: This attribute identifies the recipient of spending limit notifications sent to the NF service consumer by the CHF. The notifUri shall be present within the initial spending limit retrieval procedure

(creation of a new individual subscription). It may be present within the intermediate spending limit retrieval procedure (modification of an existing subscription).

Reference: './TS29571_CommonData.yaml#/components/schemas/Uri'

supportedFeatures:

Description: The list of supported features as described in subclause 5.8 shall be supplied by the NF service consumer in the POST request that request the creation of a spending limit report resource.

Reference: './TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

SpendingLimitStatus

Type: object

Properties:

supi:

Description: The Subscription Permanent Identifier (Supi) shall be present within the callback notify service operation (notification of the status of subscribed policy counters).

Reference: './TS29571_CommonData.yaml#/components/schemas/Supi'

statusInfos:

Type: object

additionalProperties:

Reference: '#/components/schemas/PolicyCounterInfo'

minProperties: 1

Description: Status of the requested policy counters. The key of the map is the attribute "policyCounterId".

supportedFeatures:

Description: If the supportedFeatures is included in the request by the NF service consumer, it shall be supplied in the reply of the corresponding request by the CHF.

Reference: './TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

Required:

- statusInfos

PolicyCounterInfo

Type: object

Properties:

policyCounterId:

Reference: '#/components/schemas/PolicyCounterId'

currentStatus:

Type: string

Description: Identifies the policy counter status applicable for a specific policy counter identified by the policyCounterId. The values (e.g. valid, invalid or any other status) are not specified. The interpretation and actions related to the defined values are out of scope of 3GPP.

penPolCounterStatuses:

Type: array

Items:

Reference: '#/components/schemas/PendingPolicyCounterStatus'

minItems: 1

Description: Provides the pending policy counter status.

Required:

- policyCounterId

- currentStatus

PendingPolicyCounterStatus

Type: object

Properties:

policyCounterStatus:

Type: string

Description: Identifies the policy counter status applicable for a specific policy counter identified by the policyCounterId. The values (e.g. valid, invalid or any other status) are not specified. The interpretation and actions related to the defined values are out of scope of 3GPP.

activationTime:

Description: Indicates the activation times per required policy counter.

Reference: './TS29571_CommonData.yaml#/components/schemas/DateTime'

Required:

- policyCounterStatus

- activationTime

PolicyCounterId

Type: string

Description: Identifies a policy counter.

SubscriptionTerminationInfo

Type: object

Properties:

supi:

Reference: './TS29571_CommonData.yaml#/components/schemas/Supi'

termCause:

Reference: '#/components/schemas/TerminationCause'

Required:

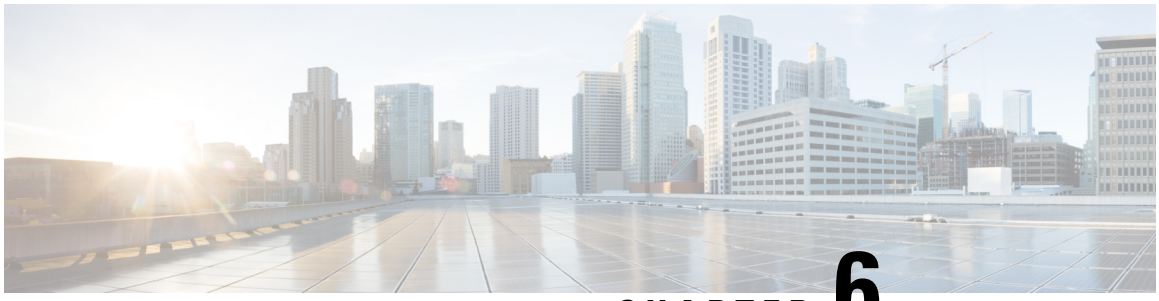
- supi

TerminationCause

Type: string

enum:

- REMOVED_SUBSCRIBER



CHAPTER 6

Npcf_SMPolicyControl

The Policy Control Function (PCF) uses the Npcf_SMPolicyControl service to create, update, and delete requests on the SMF.

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OpenAPI

OpenAPI Version: 3.0.0

info

Description: Spending Limit Control Service API Callbacks

Version: "1.0.0"

Title: Nchf_SpendingLimitControl Callbacks

externalDocs

Description: 3GPP TS 29.594 V15.2.0; 5G System; Spending Limit Control Service.

URL: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.594/'

servers

URL: 'http://{apiRoot}/'

Variables:

API Root:

Default: https://example.com

Description: apiRoot as defined in subclause subclause 4.4 of 3GPP TS 29.501

security

- {}

- oAuth2ClientCredentials:

- nchf-spendinglimitcontrol

paths

/npcf/callbacks/nchf-spendinglimitcontrol/v1/subscriptions/{subscriptionId}/notify

Method: Post

Parameters:

- in: path

name: subscriptionId

Description: Identifies an individual spending limit retrieval subscription.

Required/Optional: true

Schema:

Type: string

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: './TS29594_Nchf_SpendingLimitControl.yaml#/components/schemas/SpendingLimitStatus'

Responses:

'204' No Content, Notification was succesfull

'400': Reference './TS29571_CommonData.yaml#/components/responses/400'

'401': Reference './TS29571_CommonData.yaml#/components/responses/401'

'403': Reference './TS29571_CommonData.yaml#/components/responses/403'

'404': Reference './TS29571_CommonData.yaml#/components/responses/404'

'411': Reference './TS29571_CommonData.yaml#/components/responses/411'

'413': Reference './TS29571_CommonData.yaml#/components/responses/413'

'415': Reference './TS29571_CommonData.yaml#/components/responses/415'

'429': Reference './TS29571_CommonData.yaml#/components/responses/429'

'500': Reference './TS29571_CommonData.yaml#/components/responses/500'

'503': Reference './TS29571_CommonData.yaml#/components/responses/503'

default: Reference './TS29571_CommonData.yaml#/components/responses/default'

/npcf/callbacks/nchf-spendinglimitcontrol/v1/subscriptions/{subscriptionId}/termi

Method: Post

Parameters:

- in: path

name: subscriptionId

Description: Identifies an individual spending limit retrieval subscription.

Required/Optional: true

Schema:

Type: string

Request Body:

Required/Optional: true

Content:

Application/JSON:

Schema:

Reference: './TS29594_Nchf_SpendingLimitControl.yaml#/components/schemas/SubscriptionTerminationInfo'

Responses:

'204' No Content, Notification was succesfull

'400': Reference './TS29571_CommonData.yaml#/components/responses/400'

'401': Reference './TS29571_CommonData.yaml#/components/responses/401'

'403': Reference './TS29571_CommonData.yaml#/components/responses/403'

'404': Reference './TS29571_CommonData.yaml#/components/responses/404'

'411': Reference './TS29571_CommonData.yaml#/components/responses/411'

'413': Reference './TS29571_CommonData.yaml#/components/responses/413'

'415': Reference './TS29571_CommonData.yaml#/components/responses/415'

'429': Reference './TS29571_CommonData.yaml#/components/responses/429'

'500': Reference './TS29571_CommonData.yaml#/components/responses/500'

'503': Reference './TS29571_CommonData.yaml#/components/responses/503'

default: Reference './TS29571_CommonData.yaml#/components/responses/default'

components

securitySchemes

oAuth2ClientCredentials

Type: oauth2

Flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

nchf-spendinglimitcontrol: Access to the Nchf_SpendingLimitControl API