



# Nnrf\_NFManagement

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

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## OpenAPI

OpenAPI Version: 3.0.0

## Info

**Version:** '1.0.2'  
**Version:** '1.1.4'  
**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  
    **Description:** apiRoot as defined in subclause clause 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':
  Description: 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
```

```

    '307':
      description: Temporary Redirect
      content:
        application/json:
          schema:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

      headers:
        Location:
          description: 'The URI pointing to the resource located on the redirect
target NRF'
          required: true
          schema:
            type: string
    '308':
      description: Permanent Redirect
      content:
        application/json:
          schema:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

      headers:
        Location:
          description: 'The URI pointing to the resource located on the redirect
target NRF'
          required: 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'
options:
  summary: Discover communication options supported by NRF for NF Instances
  operationId: OptionsNFInstances
  tags:

```

```

- NF Instances (Store)
responses:
  '200':
    description: OK
    content:
      application/json:
        schema:
          Reference: '#/components/schemas/OptionsResponse'
    headers:
      Accept-Encoding:
        description: Accept-Encoding, described in IETF RFC 7694
        schema:
          type: string
  '204':
    headers:
    description: No Content
    Accept-Encoding:
      description: Accept-Encoding, described in IETF RFC 7694
      schema:
        type: string
  '307':
    description: Temporary Redirect
    content:
      application/json:
        schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: true
        schema:
          type: string
  '308':
    description: Permanent Redirect
    content:
      application/json:
        schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: 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'

```

## /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'

- **name:** requester-features

**in:** query

**description:** Features supported by the NF Service Consumer

### schema:

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

### Responses:

'200':

**Description:** Expected response to a valid request

### headers:

#### ETag:

**description:** Entity Tag containing a strong validator, described in IETF

RFC 7232, 2.3

#### schema:

**type:** string

### Content:

**Application/JSON:**

#### Schema:

```

        Reference: '#/components/schemas/NFProfile'
    '307':
        description: Temporary Redirect
        content:
            application/json:
                schema:
                    Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

        headers:
            Location:
                description: 'The URI pointing to the resource located on the redirect
target NRF'
                required: true
                schema:
                    type: string
    '308':
        description: Permanent Redirect
        content:
            application/json:
                schema:
                    Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

        headers:
            Location:
                description: 'The URI pointing to the resource located on the redirect
target NRF'
                required: 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'
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'
- **Name:** Content-Encoding  
**In:** header  
**Required/Optional:** true  
**Description:** Content-Encoding, described in IETF RFC 7231  
**Schema:**  
**type:** string  
**#- name:** Accept-Encoding  
**# in:** header  
**# description:** Accept-Encoding, described in IETF RFC 7231  
**# schema:**  
**# type:** string

**Request Body:**

- Content:**  
**Application/JSON:**  
**Schema:**  
**Reference:** '#/components/schemas/NFProfile'
- Required/Optional:** true

**Responses:**

- '200':**  
**Description:** OK (Profile Replacement)  
**Content:**  
**Application/JSON:**  
**Schema:**  
**Reference:** '#/components/schemas/NFProfile'
- Content-Encoding:**  
**description:** Content-Encoding, described in IETF RFC 7231  
**schema:**  
**type:** string
- ETag:**  
**description:** Entity Tag containing a strong validator, described in IETF RFC 7232, 2.3  
**schema:**  
**type:** string
- '201':**  
**Description:** 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
      Accept-Encoding:
        description: Accept-Encoding, described in IETF RFC 7694
      Schema:
        Type: string
      Content-Encoding:
        description: Content-Encoding, described in IETF RFC 7231
        schema:
          type: string
      ETag:
        description: Entity Tag containing a strong validator, described in IETF
RFC 7232, 2.3
        schema:
          type: string
  '307':
    description: Temporary Redirect
    content:
      application/json:
        schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: true
        schema:
          type: string
  '308':
    description: Permanent Redirect
    content:
      application/json:
        schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: 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'
        #- name: Content-Encoding
        #   in: header
        #   description: Content-Encoding, described in IETF RFC 7231
        #   schema:
        #     type: string
        #- name: Accept-Encoding
        #   in: header
        #   description: Accept-Encoding, described in IETF RFC 7231
        #   schema:
        #     type: string
        #- name: If-Match
        #   in: header
        #   description: Validator for conditional requests, as described in IETF RFC
7232, 3.2
        #   schema:
        #     type: string
  Request Body:
    Content:
      application/json-patch+json:
        Schema:
          Type: array
          Items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/PatchItem'

```

```

    Min Items: 1
    Required/Optional: true

Responses:
  '200':
    Description: Expected response to a valid request
    Content:
      Application/JSON:
        Schema:
          Reference: '#/components/schemas/NFProfile'
        headers:
          Accept-Encoding:
            description: Accept-Encoding, described in IETF RFC 7694
          Schema:
            type: string
          ETag:
            description: Entity Tag containing a strong validator, described in IETF
RFC 7232, 2.3
            schema:
              type: string
          Content-Encoding:
            description: Content-Encoding, described in IETF RFC 7231
            schema:
              type: string

  '204':
    Description: Expected response with empty body
    headers:
      Accept-Encoding:
        description: Accept-Encoding, described in IETF RFC 7694
        schema:
          type: string

  '307':
    description: Temporary Redirect
    content:
      application/json:
        schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: true
        schema:
          type: string

  '308':
    description: Permanent Redirect
    content:
      application/json:
        schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

```

```

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: 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'
    '409':
      Reference: 'TS29571_CommonData.yaml#/components/responses/409'
    '411':
      Reference: 'TS29571_CommonData.yaml#/components/responses/411'
    '412':
      Reference: 'TS29571_CommonData.yaml#/components/responses/412'
    '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':
      Description: Expected response to a successful deregistration
    '307':
      description: Temporary Redirect
      content:

```

```

    application/json:
      schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: true
        schema:
          type: string
      '308':
        description: Permanent Redirect
        content:
          application/json:
            schema:
              Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: 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'
      '429':
        Reference: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        Reference: 'TS29571_CommonData.yaml#/components/responses/500'
      '501':
        Reference: 'TS29571_CommonData.yaml#/components/responses/501'
      '503':
        Reference: 'TS29571_CommonData.yaml#/components/responses/503'

```

## /subscriptions

**Method:** Post

**Summary:** Create a new subscription

**Operation ID:** CreateSubscription

**Tags:**

```

- Subscriptions (Collection)
parameters:
- name: Content-Encoding
  in: header
  description: Content-Encoding, described in IETF RFC 7231
  schema:
    type: string
- name: Accept-Encoding
  in: header
  description: Accept-Encoding, described in IETF RFC 7231
  schema:
    type: string
Request Body:
Content:
  Application/JSON:
    Schema:
      Reference: '#/components/schemas/SubscriptionData'
    Required/Optional: true

Responses:
'201':
  Description: 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}'
'307':
  description: Temporary Redirect
  content:
    application/json:
      schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: true
        schema:
          type: string
'308':
  description: Permanent Redirect
  content:
    application/json:
      schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:

```

```

    description: 'The URI pointing to the resource located on the redirect
target NRF'
    required: 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 }':
      Post:
        parameters:
          - name: Content-Encoding
            in: header
            description: Content-Encoding, described in IETF RFC 7231
            schema:
              type: string
        Request Body:
          Description: Notification Payload
          Content:
            Application/JSON:
              Schema:
                Reference: '#/components/schemas/NotificationData'

Responses:
  '204':
    Description: Expected response to a successful callback processing
    headers:
      Accept-Encoding:
        description: Accept-Encoding, described in IETF RFC 7694
        schema:
          type: string
  '307':
    description: Temporary Redirect

```

```

    content:
      application/json:
        schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: true
        schema:
          type: string
'308':
  description: Permanent Redirect
  content:
    application/json:
      schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

    headers:
      Location:
        description: 'The URI pointing to the resource located on the redirect
target NRF'
        required: 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'

```

## /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}-)?[^-]+\$'
- **name:** Content-Encoding  
**in:** header  
**description:** Content-Encoding, described in IETF RFC 7231  
**schema:**  
**type:** string
- **name:** Accept-Encoding  
**in:** header  
**description:** Accept-Encoding, described in IETF RFC 7231  
**schema:**  
**type:** string

**Request Body:**

- Content:**  
**application/json-patch+json:**  
**Schema:**  
**Type:** array  
**Items:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PatchItem'  
**Required/Optional:** true

**Responses:**

- '200':**  
**Description:** Expected response to a valid request  
**Content:**  
**Application/JSON:**  
**Schema:**  
**Reference:** '#/components/schemas/SubscriptionData'  
**headers:**  
**Accept-Encoding:**  
**description:** Accept-Encoding, described in IETF RFC 7694  
**schema:**  
**type:** string  
**Content-Encoding:**  
**description:** Content-Encoding, described in IETF RFC 7231  
**schema:**  
**type:** string
- '204':**  
**Description:** No Content  
**headers:**  
**Accept-Encoding:**



```

        description: Accept-Encoding, described in IETF RFC 7694
        schema:
          type: string
'307':
  description: Temporary Redirect
  content:
    application/json:
      schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

  headers:
    Location:
      description: 'The URI pointing to the resource located on the redirect
target NRF'
      required: true
      schema:
        type: string
'308':
  description: Permanent Redirect
  content:
    application/json:
      schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

  headers:
    Location:
      description: 'The URI pointing to the resource located on the redirect
target NRF'
      required: 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'
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':**

**Description:** Expected response to a successful subscription removal

**'307':**

**description:** Temporary Redirect

**content:**

**application/json:**

**schema:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/RedirectResponse'

**headers:**

**Location:**

**description:** 'The URI pointing to the resource located on the redirect

target NRF'

**required:** true

**schema:**

**type:** string

**'308':**

**description:** Permanent Redirect

**content:**

**application/json:**

**schema:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/RedirectResponse'

**headers:**

**Location:**

**description:** 'The URI pointing to the resource located on the redirect

target NRF'

**required:** 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'

```

## Components

```

securitySchemes:
  oAuth2ClientCredentials:
    Type: oauth2
    Flows:
      clientCredentials:
        tokenUrl: '/oauth2/token'
        scopes:
          nnrf-nfm: Access to the Nnrf_NFManagement API

schemas:
  NFProfile:
    description: Information of an NF Instance registered in the NRF
    Type: object
    Required:
      - nfInstanceId
      - nfType
      - nfStatus
    anyOf:
      - required: [ fqdn ]
      - required: [ ipv4Addresses ]
      - required: [ ipv6Addresses ]
    Properties:
      nfInstanceId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
      nfInstanceName:
        type: string
      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
snpnList:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
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
allowedSnpons:
  Type: array
  Items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
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
  loadTimeStamp:
    # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
    format: date-time
    type: string
  locality:
    Type: string
  udrInfo:
    Reference: '#/components/schemas/UdrInfo'
  udrInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/UdrInfo'
    minProperties: 1
  udmInfo:
    Reference: '#/components/schemas/UdmInfo'
  udmInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/UdmInfo'
    minProperties: 1
  ausfInfo:
    Reference: '#/components/schemas/AusfInfo'
  ausInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/AusInfo'
    minProperties: 1
  amfInfo:
    Reference: '#/components/schemas/AmfInfo'
  amfInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/AmfInfo'

```

```

    minProperties: 1
  smfInfo:
    Reference: '#/components/schemas/SmfInfo'
    smfInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/SmfInfo'
      minProperties: 1
  upfInfo:
    Reference: '#/components/schemas/UpfInfo'
    upfInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/UpfInfo'
      minProperties: 1
  pcfInfo:
    Reference: '#/components/schemas/PcfInfo'
    pcfInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/PcfInfo'
      minProperties: 1
  bsfInfo:
    Reference: '#/components/schemas/BsfInfo'
    bsfInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/BsfInfo'
      minProperties: 1
  chfInfo:
    Reference: '#/components/schemas/ChfInfo'
    chfInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/SmfInfo'
      minProperties: 1
  nefInfo:
    Reference: '#/components/schemas/NefInfo'
  nrfInfo:
    Reference: '#/components/schemas/NrfInfo'
  udsInfo:
    Reference: '#/components/schemas/UdsInfo'
    udsInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/UdsInfo'
      minProperties: 1
  nwdafInfo:
    Reference: '#/components/schemas/NwdafInfo'
  pcscfInfoList:
    type: object

```

```

    additionalProperties:
      Reference: '#/components/schemas/PcscfInfo'
    minProperties: 1
  hssInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/HssInfo'
    minProperties: 1
  customInfo:
    Type: object
  recoveryTime:
    format: date-time
    type: string
    # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
  nfServicePersistence:
    Type: boolean
    nullable: true
    Default: false
  nfServices:
    deprecated: true
    Type: array
    Items:
      Reference: '#/components/schemas/NFService'
    minItems: 1
  nfServiceList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/NFService'
    minProperties: 1
  nfProfileChangesSupportInd:
    type: boolean
    default: false
    writeOnly: true
  nfProfileChangesInd:
    type: boolean
    default: false
    readOnly: true
  defaultNotificationSubscriptions:
    type: array
    items:
      Reference: '#/components/schemas/DefaultNotificationSubscription'
  lmfInfo:
    Reference: '#/components/schemas/LmfInfo'
  gmlcInfo:
    Reference: '#/components/schemas/GmlcInfo'
  nfSetIdList:
    type: array
    items:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/NfSetId'
    minItems: 1
  servingScope:

```

```

    type: array
    items:
      type: string
    minItems: 1
  lcHSupportInd:
    type: boolean
    default: false
  olcHSupportInd:
    type: boolean
    default: false
  nfSetRecoveryTimeList:
    type: object
    additionalProperties:
      format: date-time
      type: string
      # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
    minProperties: 1
  serviceSetRecoveryTimeList:
    type: object
    additionalProperties:
      format: date-time
      type: string
      # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
    minProperties: 1
  scpDomains:
    type: array
    items:
      type: string
    minItems: 1
  scpInfo:
    # Reference: '#/components/schemas/ScpInfo'
NfService:
  description: Information of a given NF Service Instance; it is part of the NFProfile
of an NF Instance
  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
allowedSnpsns:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
  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
allowedOperationsPerNFType:
  type: object
  additionalProperties:
  Type: array
  Items:
    type: string
    minItems: 1
    minProperties: 1

```

```

allowedOperationsPerNfInstance:
  type: object
  additionalProperties:
    Type: array
    Items:
      minItems: 1
      minProperties: 1
priority:
  Type: integer
  Minimum: 0
  Maximum: 65535
capacity:
  Type: integer
  Minimum: 0
  Maximum: 65535
load:
  Type: integer
  Minimum: 0
  Maximum: 100
  loadTimeStamp:
    format: date-time
    type: string
    # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
recoveryTime:
  format: date-time
  type: string
  # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
chfServiceInfo:
  Reference: '#/components/schemas/ChfServiceInfo'
supportedFeatures:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
nfServiceSetIdList:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NfServiceSetId'
  minItems: 1
sNssais:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
  minItems: 1
perPlmnSnssaiList:
  type: array
  items:
    Reference: '#/components/schemas/PlmnSnssai'
  minItems: 1
vendorId:
  Reference: '#/components/schemas/VendorId'
supportedVendorSpecificFeatures:
  type: object
  additionalProperties:

```

```

    type: array
    items:
      Reference: '#/components/schemas/VendorSpecificFeature'
      minItems: 1
      minProperties: 1
    oauth2Required:
      type: boolean
  NFType:
    description: NF types known to NRF
    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
          - PCSCF
          - CBCF
          - HSS
          - UCMF
          - SOR_AF
          - SPAF
          - MME
          - SCSAS
          - SCEF
          - SCP
          - NSSAAF
          - ICSCF
          - SCSCF
          - DRA
      - type: string
  Fqdn:
    description: Fully Qualified Domain Name
    Type: string
  NefId:
    description: Identity of the NEF
    type: string
  IpEndPoint:
    description: IP addressing information of a given NFService; it consists on, e.g. IP
    address, TCP port, transport protocol...
    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:
  description: Information of a subscription to notifications to NRF events, included
in subscription requests and responses
  Type: object
  Required:
    - nfStatusNotificationUri
    - subscriptionId
  Properties:
    nfStatusNotificationUri:
      Type: string
    reqNfInstanceId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
    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'
      format: date-time
      type: string
    reqNotifEvents:
      Type: array
      Items:
        Reference: '#/components/schemas/NotificationEventType'
      minItems: 1
    plmnId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    nid:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Nid'
    notifCondition:
      Reference: '#/components/schemas/NotifCondition'
    reqNfType:
      Reference: '#/components/schemas/NFType'
    reqNfFqdn:

```

```

Reference: '#/components/schemas/Fqdn'

reqPerPlmnSnssais:
  type: array
  items:
    Reference: '#/components/schemas/PlmnSnssai'
  minItems: 1
reqPlmnList:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
  minItems: 1
reqSnpnList:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
  minItems: 1
servingScope:
  type: array
  items:
    type: string
  minItems: 1
requesterFeatures:
  writeOnly: true
  allOf:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
nrfSupportedFeatures:
  readOnly: true
  allOf:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

NfInstanceIdCond:
  description: Subscription to a given NF Instance Id
  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:
  description: Subscription to a set of NFs based on their support for a given Service
  Name
  Type: object
  Required:
    - serviceName
  Properties:

```

```

    serviceName:
      Reference: '#/components/schemas/ServiceName'
  AmfCond:
    description: Subscription to a set of AMFs, based on AMF Set Id and/or AMF Region
    Id
    Type: object
    anyOf:
      - required: [ amfSetId ]
      - required: [ amfRegionId ]
    Properties:
      amfSetId:
        Type: string
      amfRegionId:
        Type: string
  GuamiListCond:
    description: Subscription to a set of AMFs, based on their GUAMIs
    Type: object
    Required:
      - guamiList
    Properties:
      guamiList:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'
  NetworkSliceCond:
    description: Subscription to a set of NFs, based on the slices (S-NSSAI and NSI)
    they support
    Type: object
    Required:
      - snssaiList
    Properties:
      snssaiList:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      nsiList:
        Type: array
        Items:
          Type: string
  NfGroupCond:
    description: Subscription to a set of NFs based on their Group Id
    Type: object
    Required:
      - nfType
      - nfGroupId
    Properties:
      nfType:
        Type: string
        enum:
          - UDM
          - AUSF
          - UDR
          - PCF
          - CHF

```

```

    nfGroupId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
  NotifCondition:
    description: Condition (list of attributes in the NF Profile) to determine whether
a notification must be sent by NRF
    Type: object
  not:
    Required: [ monitoredAttributes, unmonitoredAttributes ]
  Properties:
    monitoredAttributes:
      Type: array
      Items:
        Type: string
      minItems: 1
    unmonitoredAttributes:
      Type: array
      Items:
        Type: string
      minItems: 1
  UdrInfo:
    description: Information of an UDR NF Instance
    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:
    description: A range of SUPIs (subscriber identities), either based on a numeric
range, or based on regular-expression matching
    Type: object
  Properties:
    start:
      Type: string

```

```

        Pattern: '[0-9]+$'
    end:
        Type: string
        Pattern: '[0-9]+$'
    Pattern:
        Type: string
    IdentityRange:
        description: A range of GPSIs (subscriber identities), either based on a numeric
range, or based on regular-expression matching
        Type: object
    Properties:
        start:
            Type: string
            Pattern: '[0-9]+$'
        end:
            Type: string
            Pattern: '[0-9]+$'
        Pattern:
            Type: string
    InternalGroupIdRange:
        description: A range of Group IDs (internal group identities), either based on a
numeric range, or based on regular-expression matching
        type: object
    properties:
        start:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        end:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        pattern:
            type: string
DataSetId:
    description: Types of data sets stored in UDR
    anyOf:
        - type: string
        enum:
            - SUBSCRIPTION
            - POLICY
            - EXPOSURE
            - APPLICATION
        - type: string
UdmInfo:
    description: Information of an UDM NF Instance
    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}$'
    minItems: 1
  internalGroupIdentifiersRanges:
    Type: array
    Items:
      Reference: '#/components/schemas/InternalGroupIdRange'
    minItems: 1
  AusfInfo:
    description: Information of an AUSF NF Instance
    Type: object
    Properties:
      groupId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
      supiRanges:
        Type: array
        Items:
          Reference: '#/components/schemas/SupiRange'
        minItems: 1
      routingIndicators:
        Type: array
        Items:
          Type: string
          Pattern: '^[0-9]{1,4}$'
        minItems: 1
  AmfInfo:
    description: Information of an AMF NF Instance
    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:
  description: Information of an SMF NF Instance
  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
    priority:

```

```

        type: integer
        minimum: 0
        maximum: 65535
    vsmfSupportInd:
        type: boolean
        default: false
    SnssaiSmfInfoItem:
        description: Set of parameters supported by SMF for a given S-NSSAI
        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:
        description: Set of parameters supported by SMF for a given DNN
        Type: object
        Required:
            - dnn
        Properties:
            dnn:
                Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
    UpfInfo:
        description: Information of an UPF NF Instance
        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

```

```

pduSessionTypes:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'
  minItems: 1
atsssCapability:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/AtsssCapability'
ueIpAddrInd:
  type: boolean
  default: false
taiList:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'
  minItems: 1
wAgfInfo:
  Reference: '#/components/schemas/WAgfInfo'
tngfInfo:
  Reference: '#/components/schemas/TngfInfo'
twifInfo:
  Reference: '#/components/schemas/TwifInfo'
priority:
  type: integer
  minimum: 0
  maximum: 65535
redundantGtpu:
  type: boolean
  default: false
ipups:
  type: boolean
  default: false
dataForwarding:
  type: boolean
  default: false
SnssaiUpfInfoItem:
  description: Set of parameters supported by UPF for a given S-NSSAI
  Type: object
  Required:
    - sNssai
    - dnnUpfInfoList
  Properties:
    sNssai:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    dnnUpfInfoList:
      Type: array
      Items:
        Reference: '#/components/schemas/DnnUpfInfoItem'
      minItems: 1
    redundantTransport:
      type: boolean
      default: false
DnnUpfInfoItem:

```

```

description: Set of parameters supported by UPF for a given DNN
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
  pduSessionTypes:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'
    minItems: 1
  ipv4AddressRanges:
    type: array
    items:
      Reference: '#/components/schemas/Ipv4AddressRange'
    minItems: 1
  ipv6PrefixRanges:
    type: array
    items:
      Reference: '#/components/schemas/Ipv6PrefixRange'
    minItems: 1
  dnaiNwInstanceList:
    description: Map of network instance per DNAI for the DNN, where the key of
the map is the DNAI. When present, the value of each entry of the map shall contain a N6
network instance that is configured for the DNAI indicated by the key.
    type: object
    additionalProperties:
      type: string
    minProperties: 1
InterfaceUpfInfoItem:
  description: Information of a given IP interface of an UPF
  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:
  description: Types of User-Plane interfaces of the UPF
  anyOf:
    - type: string
      enum:
        - N3
        - N6
        - N9
        - DATA_FORWARDING
    - type: string
WAgfInfo:
  description: Information of the W-AGF end-points
  type: object
  properties:
    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'
TngfInfo:
  description: Information of the TNGF endpoints
  type: object
  properties:
    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'
PcfInfo:
  description: Information of a PCF NF Instance
  Type: object
  Properties:
    groupId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'

```

```

dnnList:
  Type: array
  Items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
  minItems: 1
supiRanges:
  Type: array
  Items:
    Reference: '#/components/schemas/SupiRange'
  minItems: 1
gpsiRanges:
  type: array
  items:
    Reference: '#/components/schemas/IdentityRange'
  minItems: 1
rxDiamHost:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/DiameterIdentity'
rxDiamRealm:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/DiameterIdentity'
v2xSupportInd:
  type: boolean
  default: false
BsfInfo:
  description: Information of a BSF NF Instance
  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:
  description: Information of a CHF NF Instance
  Type: object
  not:
    required: [ primaryChfInstance, secondaryChfInstance ]

```

```

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
  groupId:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
  primaryChfInstance:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
  secondaryChfInstance:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
Ipv4AddressRange:
  description: Range of IPv4 addresses
  Type: object
  Properties:
    start:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
    end:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
Ipv6PrefixRange:
  description: Range of IPv6 prefixes
  Type: object
  Properties:
    start:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
    end:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
DefaultNotificationSubscription:
  description: Data structure for specifying the notifications the NF service subscribes
  by default along with callback URI
  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'

  versions:
    type: array
    items:
      type: string
    minItems: 1
    binding:
      type: string
NfSetCond:
  description: Subscription to a set of NFs based on their Set Id
  type: object
  required:
    - nfSetId
  properties:
    nfSetId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfSetId'
NfServiceSetCond:
  description: Subscription to a set of NFs based on their Service Set Id
  type: object
  required:
    - nfServiceSetId
  properties:
    nfServiceSetId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfServiceSetId'
UpfCond:
  description: Subscription to a set of NF Instances (UPFs), able to serve a certain
  service area (i.e. SMF serving area or TAI list)
  type: object
  required:
    - conditionType
  properties:
    conditionType:
      type: string
      enum: [ UPF_COND ]
    smfServingArea:
      type: array
      items:
        type: string
      minItems: 1
    tailList:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'
      minItems: 1
NwdafCond:
  description: Subscription to a set of NF Instances (NWDAFs), identified by Analytics
  ID(s), S-NSSAI(s) or NWDAF Serving Area information, i.e. list of TAIs for which the NWDAF
  can provide analytics.
  type: object
  required:

```

```

- conditionType
properties:
  conditionType:
    type: string
    enum: [ NWDAF_COND ]
  analyticsIds:
    type: array
    items:
      type: string
    minItems: 1
  snssaiList:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    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
NefCond:
  description: Subscription to a set of NF Instances (NEFs), identified by Event ID(s)
  provided by AF, S-NSSAI(s), AF Instance ID, Application Identifier, External Identifier,
  External Group Identifier, or domain name.
  type: object
  required:
    - conditionType
  properties:
    conditionType:
      type: string
      enum: [ NEF_COND ]
    afEvents:
      type: array
      items:
        Reference: 'TS29517_Naf_EventExposure.yaml#/components/schemas/AfEvent'
      minItems: 1
    snssaiList:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      minItems: 1
    pfdData:
      Reference: '#/components/schemas/PfdData'
    gpsiRanges:
      type: array
      items:
        Reference: '#/components/schemas/IdentityRange'

```

```

        minItems: 1
    externalGroupIdentifiersRanges:
        type: array
        items:
            Reference: '#/components/schemas/IdentityRange'
        minItems: 1
    servedFqdnList:
        type: array
        items:
            type: string
        minItems: 1
    NotificationType:
        description: Types of notifications used in Default Notification URIs in the NF
        Profile of an NF Instance
        anyOf:
            - type: string
            enum:
                - N1_MESSAGES
                - N2_INFORMATION
                - LOCATION_NOTIFICATION
                - DATA_REMOVAL_NOTIFICATION
                - DATA_CHANGE_NOTIFICATION
                - LOCATION_UPDATE_NOTIFICATION
                - NSSAA_REAUTH_NOTIFICATION
                - NSSAA_REVOC_NOTIFICATION
            - type: string
    TransportProtocol:
        description: Types of transport protocol used in a given IP endpoint of an NF Service
        Instance
        anyOf:
            - type: string
            enum:
                - TCP
            - type: string
    NotificationEventType:
        description: Types of events sent in notifications from NRF to subscribed NF Instances

        anyOf:
            - type: string
            enum:
                - NF_REGISTERED
                - NF_DEREGISTERED
                - NF_PROFILE_CHANGED
            - type: string
    NotificationData:
        description: Data sent in notifications from NRF to subscribed NF Instances
        Type: object
        Required:
            - event
            - nfInstanceUri
        allof:
            #
            # Condition: If 'event' takes value 'NF_PROFILE_CHANGED',
            # then either 'nfProfile' or 'profileChanges' (but not both) must be present
            #
            - anyOf:
            - not:

```

```

    Properties:
      event:
        Type: string
        enum:
          - NF_PROFILE_CHANGED
      - oneOf:
          - required: [ nfProfile ]
          - required: [ profileChanges ]
      #
      # Condition: If 'event' takes value 'NF_REGISTERED',
      # then 'nfProfile' must be present
      #
      - 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 ]
          - not:
              Required: [ allowedPlmns ]
          - not:
              Required: [ allowedSnpsns ]
          - not:
              Required: [ allowedNfTypes ]
          - not:
              Required: [ allowedNfDomains ]
          - not:
              Required: [ allowedNssais ]
          - 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
      conditionEvent:
        Reference: '#/components/schemas/ConditionEventType'
  NFStatus:
    description: Status of a given NF Instance stored in NRF
    anyOf:
      - type: string
      enum:
        - REGISTERED
        - SUSPENDED
        - UNDISCOVERABLE
      - type: string
  NFServiceVersion:
    description: Contains the version details of an NF service
    Type: object
    Required:
      - apiVersionInUri
      - apiFullVersion
    Properties:
      apiVersionInUri:
        Type: string
      apiFullVersion:
        Type: string
      expiry:
        format: date-time
        type: string
        Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
  ServiceName:
    description: Service names known to NRF
    anyOf:
      - type: string
      enum:
        - nnrf-nfm
        - nnrf-disc
        - nnrf-oauth2
        - nudm-sdm
        - nudm-uecm
        - nudm-ueau
        - nudm-ee
        - nudm-pp
        - nudm-niddau
        - nudm-mt
        - namf-comm
        - namf-evts
        - namf-mt
        - namf-loc
        - nsmf-pdusession
        - nsmf-event-exposure
        - nsmf-nidd
        - nausf-auth
        - nausf-sorprotection
        - nnef-pfdmanagement
        - nnef-smcontext

```

- nnef-eventexposure
- npcfc-am-policy-control
- npcfc-smpolicycontrol
- npcfc-policyauthorization
- npcfc-bdtpolicycontrol
- npcfc-eventexposure
- npcfc-ue-policy-control
- nsmsf-sms
- nnssf-nssselection
- nnssf-nssaiavailability
- nudr-dr
- nudr-group-id-map
- nlmf-loc
- n5g-eir-eic
- nbsf-management
- nchf-spendinglimitcontrol
- nchf-convergedcharging
- nchf-offlineonlycharging
- nnwdaf-eventssubscription
- nnwdaf-analyticsinfo
- nucmf-provisioning
- nucmf-uecapabilitymanagement
- nhss-sdm
- nhss-uecm
- nhss-ueau
- nhss-ee
- nhss-ims-sdm
- nhss-ims-uecm
- nhss-ims-ueau
- nsepp-telescopic
- nsoraf-sor
- nspaf-secured-packet
- nudsf-dr
- nnssaaf-nssaa
- type: string

**N2InterfaceAmfInfo:****description:** AMF N2 interface information**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:****description:** Status of a given NF Service Instance of an NF Instance stored in NRF**anyOf:**

- type: string
- enum:**
  - REGISTERED
  - SUSPENDED

```

    - type: string
TaiRange:
  description: Range of TAIs (Tracking Area Identities)
  Type: object
  Required:
    - plmnId
    - tacRangeList
  Properties:
    plmnId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    tacRangeList:
      Type: array
      Items:
        Reference: '#/components/schemas/TacRange'
      minItems: 1
      nid:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Nid'
TacRange:
  description: Range of TACs (Tracking Area Codes)
  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:
  description: Range of PLMN IDs
  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:
  description: Information of an NRF NF Instance, used in hierarchical NRF deployments

```

```
Type: object
Properties:
  servedUdrInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/UdrInfo'
    minProperties: 1
    servedUdrInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/UdrInfo'
      minProperties: 1
      minProperties: 1
  servedUdmInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/UdmInfo'
    minProperties: 1
    servedUdmInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/UdmInfo'
      minProperties: 1
      minProperties: 1
  servedAusfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/AusfInfo'
    minProperties: 1
    servedAusfInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/AusfInfo'
      minProperties: 1
      minProperties: 1
  servedAmfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/AmfInfo'
    minProperties: 1
    servedAmfInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
```



```
      Reference: '#/components/schemas/AmfInfo'
    minProperties: 1
    minProperties: 1
  servedSmfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/SmfInfo'
    minProperties: 1
    servedSmfInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/SmfInfo'
      minProperties: 1
      minProperties: 1
  servedUpfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/UpfInfo'
    minProperties: 1
    servedUpfInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/UpfInfo'
      minProperties: 1
      minProperties: 1
  servedPcfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/PcfInfo'
    minProperties: 1
    servedPcfInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/PcfInfo'
      minProperties: 1
      minProperties: 1
  servedBsfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/BsfInfo'
    minProperties: 1
    servedBsfInfoList:
      Type: object
      additionalProperties:
        Type: object
```

```

    additionalProperties:
      Reference: '#/components/schemas/BsfInfo'
    minProperties: 1
    minProperties: 1
  servedChfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/ChfInfo'
    minProperties: 1
    servedChfInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/ChfInfo'
    minProperties: 1
    minProperties: 1
  servedNefInfo:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/NefInfo'
    minProperties: 1
  servedNwdafInfo:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/NwdafInfo'
    minProperties: 1
  servedPcscfInfoList:
    Type: object
    additionalProperties:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/PcscfInfo'
    minProperties: 1
    minProperties: 1
  servedGmlcInfo:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/GmlcInfo'
    minProperties: 1
  servedLmfcInfo:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/LmfcInfo'
    minProperties: 1
  servedNfInfo:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/NfInfo'
    minProperties: 1
  servedHssInfoList:

```

```

    Type: object
    additionalProperties:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/HssInfo'
    minProperties: 1
    minProperties: 1
    servedUdsfInfo:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/UdsfInfo'
    minProperties: 1
    servedUdsfInfoList:
      Type: object
      additionalProperties:
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/UdsfInfo'
    minProperties: 1
    minProperties: 1
    servedScpInfoList:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/ScpInfo'
    minProperties: 1
  PlmnSnssai:
    description: List of network slices (S-NSSAIs) for a given PLMN ID
    Type: object
    required:
      - plmnId
      - sNssaiList
    properties:
      plmnId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
      sNssaiList:
        Type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
        minItems: 1
      nid:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Nid'
  NefInfo:
    description: Information of an NEF NF Instance
    Type: object
    properties:
      nefId:
        Reference: '#/components/schemas/NefId'
      pfdData:
        Reference: '#/components/schemas/PfdData'
      afEeData:
        Reference: '#/components/schemas/AfEventExposureData'
      gpsiRanges:

```

```

    type: array
    items:
      Reference: '#/components/schemas/IdentityRange'
    minItems: 1
  externalGroupIdentifiersRanges:
    type: array
    items:
      Reference: '#/components/schemas/IdentityRange'
    minItems: 1
  servedFqdnList:
    type: array
    items:
      type: string
    minItems: 1
PfdData:
  description: List of Application IDs and/or AF IDs managed by a given NEF Instance
  Type: object
  properties:
    appIds:
      type: array
      items:
        type: string
      minItems: 1
    afIds:
      type: array
      items:
        type: string
      minItems: 1
NwdafInfo:
  description: Information of a NWDAF NF Instance
  Type: object
  properties:
    eventIds:
      type: array
      items:
        Reference: 'TS29520_Nnwdaf_AnalyticsInfo.yaml#/components/schemas/EventId'
      minItems: 1
    nwdafEvents:
      type: array
      items:
        Reference:
'TS29520_Nnwdaf_EventsSubscription.yaml#/components/schemas/NwdafEvent'
      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
LmfInfo:
  description: Information of an LMF NF Instance
  Type: object
  properties:
    servingClientTypes:
      type: array
      items:
        Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/ExternalClientType'

        minItems: 1
    lmfId:
      Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/LMFIdentification'
    servingAccessTypes:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
        minItems: 1
    servingAnNodeType:
      type: array
      items:
        Reference: '#/components/schemas/AnNodeType'
        minItems: 1
    servingRatTypes:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'
        minItems: 1
GmlcInfo:
  description: Information of a GMLC NF Instance
  Type: object
  properties:
    servingClientTypes:
      type: array
      items:
        Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/ExternalClientType'

        minItems: 1
externalDocs:
  AfEventExposureData:
    description: AF Event Exposure data managed by a given NEF Instance
    Type: object
    required:
      - afEvents
    properties:
      afEvents:
        type: array
        items:
          Reference: 'TS29517_Naf_EventExposure.yaml#/components/schemas/AfEvent'
          minItems: 1
      afIds:

```

```

    type: array
    items:
      type: string
      minItems: 1
  appIds:
    type: array
    items:
      type: string
      minItems: 1
PcscfInfo:
  description: Information of a P-CSCF NF Instance
  Type: object
  properties:
    accessType:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
      minItems: 1
    dnnList:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      minItems: 1
    gmFqdn:
      Reference: '#/components/schemas/Fqdn'
    gmIpv4Addresses:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      minItems: 1
    gmIpv6Addresses:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
      minItems: 1
    servedIpv4AddressRanges:
      type: array
      items:
        Reference: '#/components/schemas/Ipv4AddressRange'
      minItems: 1
    servedIpv6PrefixRanges:
      type: array
      items:
        Reference: '#/components/schemas/Ipv6PrefixRange'
      minItems: 1
NfInfo:
  description: Information of a generic NF Instance
  Type: object
  properties:
    nfType:
      Reference: '#/components/schemas/NFType'

```

```

HssInfo:
  description: Information of an HSS NF Instance
  Type: object
  properties:
    groupId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
    imsiRanges:
      type: array
      items:
        Reference: '#/components/schemas/ImsiRange'
      minItems: 1
    imsPrivateIdentityRanges:
      type: array
      items:
        Reference: '#/components/schemas/IdentityRange'
      minItems: 1
    imsPublicIdentityRanges:
      type: array
      items:
        Reference: '#/components/schemas/IdentityRange'
      minItems: 1
    msisdnRanges:
      type: array
      items:
        Reference: '#/components/schemas/IdentityRange'
      minItems: 1
  ImsiRange:
    description: A range of IMSIs (subscriber identities), either based on a numeric
    range, or based on regular-expression matching
    Type: object
    properties:
      start:
        type: string
        pattern: '^[0-9]+$'
      end:
        type: string
        pattern: '^[0-9]+$'
        pattern:
          type: string
  TwifInfo:
    description: Addressing information (IP addresses, FQDN) of the TWIF
    Type: object
    properties:
      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'
VendorId:
  description: Vendor ID of the NF Service instance (Private Enterprise Number assigned
by IANA)
  type: string
  pattern: '^[0-9]{6}$'
VendorSpecificFeature:
  description: Information about a vendor-specific feature
  Type: object
  required:
    - featureName
    - featureVersion
  properties:
    featureName:
      type: string
    featureVersion:
      type: string
AnNodeType:
  description: Access Network Node Type (gNB, ng-eNB...)
  anyOf:
    - type: string
      enum:
        - GNB
        - NG_ENB
    - type: string
UdsfInfo:
  description: Information related to UDSF
  Type: object
  properties:
    groupId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
    supiRanges:
      type: array
      items:
        Reference: '#/components/schemas/SupiRange'
      minItems: 1
    storageIdRanges:
      description: A map (list of key-value pairs) where realmId serves as key and
each value in the map is an array of IdentityRanges. Each IdentityRange is a range of
storageIds.
      Type: object
    additionalproperties:
      type: array
      items:
        Reference: '#/components/schemas/IdentityRange'
      minItems: 1
      minProperties: 1
ScpInfo:
  description: Information of an SCP Instance
  Type: object
  properties:

```



```

    scpDomainInfoList:
      Type: object
    additionalproperties:
      items:
        Reference: '#/components/schemas/ScpDomainInfo'
      minProperties: 1
    scpPrefix:
      type: string
    scpPorts:
      Type: object
    additionalproperties:
      type: integer
      minimum: 0
      maximum: 65535
      minProperties: 1
    addressDomains:
      type: array
      items:
        type: string
      minItems: 1
    ipv4Addresses:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      minItems: 1
    ipv6Prefixes:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
      minItems: 1
    ipv4AddrRanges:
      type: array
      items:
        Reference: '#/components/schemas/Ipv4AddressRange'
      minItems: 1
    ipv6PrefixRanges:
      type: array
      items:
        Reference: '#/components/schemas/Ipv6PrefixRange'
      minItems: 1
    servedNfSetIdList:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfSetId'
      minItems: 1
    remotePlmnList:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
      minItems: 1
    ipReachability:

```

```

    Reference: '#/components/schemas/IpReachability'

ScpDomainInfo:
  description: SCP Domain specific information
  Type: object
  properties:
    scpFqdn:
      Reference: '#/components/schemas/Fqdn'
    scpIpEndPoints:
      type: array
      items:
        Reference: '#/components/schemas/IpEndPoint'
      minItems: 1
    scpPrefix:
      type: string
    scpPorts:
      type: object
  additionalproperties:
    type: integer
    minimum: 0
    maximum: 65535
    minProperties: 1

description: 3GPP TS 29.510 V15.3.0; 5G System; Network Function Repository Services;
Stage 3
url: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.510/'
ScpDomainCond:
  description: Subscription to a set of NF or SCP instances belonging to certain SCP
domains
  type: object
  additionalproperties:
ScpDomains:
  type: array
  items:
    type: string
  minItems: 1

OptionsResponse:
  description: Communication options of the NRF sent in response payload of OPTIONS
method
  type: object
  additionalproperties:
  supportedFeatures:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

ConditionEventType:
  description: Indicates whether a notification is due to the NF Instance to start
or stop being part of a condition for a subscription to a set of NFs
  anyOf:
    - type: string
    enum:
      - NF_ADDED
      - NF_REMOVED
    - type: string

```

**IpReachability:**

**description:** Indicates the type(s) of IP addresses reachable via an SCP

**anyOf:**

- type: string
  - enum:**
    - IPV4
    - IPV6
    - IPV4V6
- type: string

## External Docs

**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/'

