



# Nnrf\_NFDiscovery

---

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

- [OpenAPI, on page 1](#)
- [Info, on page 1](#)
- [Servers, on page 1](#)
- [Security, on page 2](#)
- [Paths, on page 2](#)
- [Components, on page 7](#)
- [External Docs, on page 10](#)

## 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  
**Min Items:** 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'  
**Min Items:** 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'  
**Min Items:** 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:** hnrfr-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'  
**Min Items:** 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
  Min Items: 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'  
**Min Items:** 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'  
**Min Items:** 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':
    Description: 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':
  Description: 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_NFDDiscovery 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'

```

## 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/](http://www.3gpp.org/ftp/Specs/archive/29_series/29.510/)'